

**A BOOK**  
**ON SUMMARY OF THE Ph.D THESIS**  
**KALIABOR COLLEGE**

(PERIOD : 1994-2018)

**Published By**  
**Research Cell, Kaliabor College**



*Editor:*  
**Dr. Pranjit Kr. Bhuyan**  
Coordinator, Research Cell, Kaliabor College

*Chief Editor:*  
**Dr. Hiranya Kr. Chaliha**  
Principal, Kaliabor College

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# *Preface*

First of all, it gives me immense pleasure to be a part of this book on summary of Ph.D thesis. This attempt was made to collect the summary of published Ph.D thesis from the teaching community of Kaliabor College and to publish it in a book form on the occasion of golden jubilee celebration. This book contains nineteen Ph.D thesis covering the period 1994 to 2018. Teachers from Arts, Commerce and Science stream made this collective academic contribution for the preparation of this book. This book highlights about the problems and prospect of women education among the tea tribes, socio-cultural affinities between different communities, language learning process of children, interface between Assamese folklore and economic development, ethno-botanical studies, the role of oral history in folklore, study of the folklore of the Tiwas, social demography, bank financing for alleviation of rural poverty, statistical study on rainfall frequency analysis, determinants and effectiveness of government expenditure, problems and prospects of small tea growers, translation in Assamese poetry-its accessible past, origin and development of Ankiya drama, taxonomic studies of orchid flora, a study of the folklore of the Karbis, a study on some fractals and their related dimensions, modification of polymeric material etc. The aim of this book was to establish a new academic dimension for the young researchers who may utilize these research materials for the better development of the society.

I on behalf of all the members of research cell of Kaliabor College would like to thank all the teachers for their cooperation and suggestion in the preparation this book. I would like to offer my sincere gratitude to the Principal, Kaliabor College for his interest and advice during the preparation of this book.

Editor

**Dr. Pranjit Kr. Bhuyan**

2018

## ***From Chief Editor's desk***

Kaliabor College was established in 1969 in middle Assam and has been serving its best for providing quality higher education since then. It has made rapid strides in recent years which were rewarded with grade A by NAAC and become one of the most prestigious institutions of the state. Research is an integral part of any institute higher education. The College has been giving priority in research amongst teachers as well as students. There has been a quantum leap in the number of Ph.D.s, i.e, by 28 in the last fourteen years. The college is also encouraging research amongst student community by funding students research projects and has been awarding "Atmaram Sarma Chhatra Gabesona Bonta" annually to best student research projects in all streams. There are also a good number of research publications by the faculty members as well as students. The research cell is acting as a catalyst for the effort. This book is an attempt to record the research efforts of the faculty members for use by scholars.



**Dr. H. K . Chaliha**  
Principal & Chief Editor

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# **DEVELOPMENT OF ASSAMESE LANGUAGE AMONG PRE-SCHOOL CHILDREN**

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## **INTRODUCTION**

The purpose of studying child development is to discover the intricacies of the all round growth of the child. The term development means a progressive series of changes that occur as a result of maturation and adaptation. It does not merely mean adding inches to one's height or points to one's abilities, but also refers to integration of many structures and functions to a very complex process. Thus, with development, adults grow more complex in nature and differentiate among themselves.

The goal of development is to enable people to adapt to the environment in which they live and to achieve this goal, “self realization” or “self-actualization” is essential.

Early behavioral foundations, particularly those laid in the first 2 years of life, are critical in development. Attitudes, habits and other patterns of behavior established during the early years determine to a large extent how successfully the individual will adjust in life as they grow older. Each phase of development has a characteristic pattern of behavior and follows a definite and predictable course. Development is aided by stimulation, which is most effective at the time of development of ability. Cultural changes affect development, because an individual's development is molded to conform to a set of cultural standards, changes in these standards

affect the developmental pattern.

Of all the phases of child development, the learning of language has attracted more attention because of (i) its importance in the human to human communication system and (ii) the complexity of language and the relative ease of its acquisition.

## **NATURE OF LANGUAGE**

A broad definition of language includes all behavior related to communication, verbal and non-verbal. One of the most important preludes to the study of child language development is the scientific description of the adult form of language the child is learning. Modern linguistics teach that “a language is a structured system of arbitrary vocal sounds and sequences of sounds which is used in interpersonal communication and which rather exhaustively catalogues the things, events and processes of human experiences”. (Caroll,1950) A language also contains a system of socially shared meanings which must be learned by a child . There is some evidence that the particular set of meanings and categories provided by a language, conditions the cognitive process of the child.

## **LANGUAGE LEARNING PROCESS**

In the process of language learning, the responses are initially gross and gradually become differentiated and structured. In a short time, the child discovers the critical points of distinction by an unconscious trial and error process. He learns to imitate the responses or combination of responses.

The process of language acquisition, although variable from child to child in terms of age, demonstrates a number of universal characteristics. For instance, all children approach language in a systematized word order. The precise system depends upon the language in question.

The relationship between cognition and language is a shifting one, with cognitive structures preceding linguistics in the early years and the reverse in later stages, by around the age of five. This shift may reflect the biphasic nature of language acquisition. In the first phase, language originates as a set of rules abstracted from the affectively laden context of jointly regulated activity between moth-

er and child. In the second phase, language acquisition proceeds rapidly to structural completion by way of a variety of cognitive processes.

Language demonstrates duality of patterning which refers to a double level of organization in which morphemes and phonemes serve to single differences in meaning. Thus both ‘cat’ and ‘bat’ are morphemes, while initials ‘c’ and ‘b’ are phonemes, which make possible the combination of a small and limited set of phonemes into an almost unlimited lexicon.

Language also shows productivity and demonstrates displacement. As a system of symbols, language differs from non-human system in that the symbols are conventional and rules govern.

## **PROCESS INVOLVED IN LANGUAGE ACQUISITION**

The manner in which infants acquire and retain the basic phonemes requires a certain amount of neuro-physiological maturation and growth which involves ‘phoneme expansion’ and ‘phoneme contraction’ which is in turn influenced by factors like the biological determinants, social interactions, imitations and rule formation, comprehension, reinforcement, innate language structure and cognitive development.

### **Acquisition of language:**

All human beings acquire a language. No one is born talking and a period of learning is a pre-condition of fluency. Speech first consists of the ability to produce certain sounds in combination that are recognized as words. The ability to associate meaning with these words is the second aspect. The muscle co-ordination needed to produce combinations that are recognizable as words forms a vital part in the acquisition of speech skills.

### **Readiness of speak**

Speech development depends upon the maturation of both the speech mechanism and the brain. Mental readiness to speak comes later than the motor readiness. Thus, during the pre-school stage, the child can babble sounds that approximate words and can never say isolated words in parrot fashion.

## **Motivation:**

Motivation is one of the pre-conditions of learning to speak. If the young child discovers that he can get what he wants without asking for it, his incentive to learn to speak is weakened. Baby talk, for example, is likely to continue until the child starts to play with other children. When he learns that they do not understand him, he will be motivated to improve his speech.

## **Guidance:**

Guidance in learning to speak is as important as guidance in learning motor skills; the best way for which is to be a good model who says each word slow enough for the child to hear clearly and distinctly.

## **Pre-linguistic utterances of infancy:**

Learning to speak is a long and complex process. Until the child is mature enough to learn, nature provides certain stop-gap form of communication for him. During the first months, babies use three pre-speech forms of communication-crying, babbling and gesture. Of these, the second is the most important, because it becomes the basis of real speech.

### **The Birth Cry:**

The birth cry constitutes the first use of delicate respiratory mechanisms which are to be involved in speech. It is also the first time the child hears the sound of his own voice.

### **Cooing and babbling:**

In addition to cries, a baby makes simple sounds during the first month of life. These are grunts of pain or distrust, squeals of delights, yawns, sneezes, sigh, belching, coughing, guttural barking sounds, growls and cries that sound like the whine of a young pig or bleat of a goat. These are known as cooing, which eventually disappear and develop into babbling by the second or third month and later into words at about eleven months.

### **Gestures:**

Gestures consist of meaningful movement of limbs or cer-

tain body parts as a substitute for speech until the baby can communicate in words.

### **Comprehension:**

Comprehension of the meaning of the speech of others precedes the use of words and at every age, the passive or comprehensive vocabulary is longer than the active or speech vocabulary.

### **The first word and single word sentences:**

On an average the first intelligible word is spoken by the age of 11-12 months. After acquisition of the first word children often use single words to express their thoughts.

### **Sentence formation:**

Following acquisition of the first word and the rapid increase in the vocabulary, the child begins to combine words. The first combination is usually non-verb combination and thereafter there is rapid development of sentence. The various stages of sentence formation as traced by Nice are:

1. The single word stage
2. The early sentence stage
3. The short sentence stage
4. The complete sentence stage.

Young children face one special problem in learning to make sentences--- short memory span, and thus they develop ‘telegraphic speech’. To do away with this problem of short memory span, they discard the unimportant aspects of the sentence and chunk together separate elements of meaning as though they were one single unit.

### **Children’s simplification:**

Children also have a tendency of shortening the adult word by:

- i) Omitting the final consonant
- ii) Reducing consonant clusters
- iii) Omitting unstressed syllables
- iv) Reduplicating syllables.

## **Use of negatives:**

The child's earliest negative sentence can be described as the word 'no' or 'not' followed by a sentence. Less frequently, a negative sentence consists of an affirmative sentence followed by 'no' or 'not'.

## **Factors affecting language acquisition:**

They are namely health, intelligence, socio-economic conditions, sex differences and family relationships.

## **STRUCTURE OF ASSAMESE LANGUAGE**

Assamese language has a structure of its own.

### **(A) Phonology**

- i) There are 8 vowel phonemes in Assamese showing contrast in the tongue position: front, centre and back; tongue height: high, high-mind, mean-mind, low, mid and low. Back vowels are rounded, others are unrounded. The vowels in Assamese are voiced. There is no contrast between a long and short vowel. Hence, length is non-phonemic in Assamese.
- ii) There are 21 consonant phonemes which include 12 stops, 3 nasal, one lateral, one trill and 4 spirants. The stops show voice-voiceless and aspirated-unaspirated contrasts. The nasals, the laterals and the trill are all voiced. The spirants show voice-voiceless contrasts.

### **(B) Morphology:** The Assamese language too consists of nouns, pronouns, verbs, adverbs and adjectives

## **JUSTIFICATION OF THE STUDY**

This study of acquisition of Assamese language based on the following hypotheses:

- i) Childhood speech developed from meaningless utterance to structural verbalization structural over the first three crucial years of growth
- ii) There is a developmental trend in the utterances of words belonging to various parts of speech.
- iii) The complexity of sentences increases with age.

- iv) The acquisition of language does not develop at a uniform rate.
- v) Children of different ages exhibit a tendency to shorten words and sentences which continue for some time.
- vi) Children from higher socio-economic conditions are more advanced in the acquisition of language than from the lower socio-economic condition.
- vii) Individual difference is noticed among children with regards to the development of egocentric and socialized speech.
- viii) Girls are more advanced in the process of acquisition of language than boys.

As language is a developing process, with the help of these hypotheses it is expected to find out the pattern of development of Assamese speech among pre-school children.

## **MATERIALS AND METHODS:**

The present study was conducted at Kaliabor over a span of 3 years. It was a longitudinal observational study that involved observation of the language development of 40 children from age 10 months up to the age of 3 years. These children were permanent residents of the place of the study and belonged to the middle and lower middle class families. The investigator visited the children at an interval of 20 days. During the sessions, all the major utterances of the child were recorded with the aid of the mother or any other adult member present .Stratified sampling technique was employed and the study population was divided into different groups on the basis of their sex and socio-economic conditions.

## **DISCUSSIONS AND CONCLUSIONS:**

The main findings of the study with respect to the hypotheses are discussed below.

### **The first word:**

Children generally utter the first intelligible word between 11 to 12 months. The first word uttered by all children irrespective of their sex and socio-economic condition is “Ma” or “Mai” or “Bow”, all meaning mother.

The age of uttering the first word was a month in advance in children of higher socio-economic as compared to the lower socio-

economic strata. This was possibly because mothers of the lower socio-economic group have less time to be with their children due to the heavy burden of household activities, and therefore, they get less stimulation.

### **Functional word:**

A child's functional words can be regarded as the simplified form of adult's words. Some words are simplified for the inability to utter some difficult letters; for example, in pronouncing a word with two vowel sounds, the child drops one of the vowels, such as Deutā as Detā.

A child generally drops the letter व in a word by another soft letter and thus the adult word takes form of a functional word like “āmār” as “āmā”.

Some of the functional words are not due to the child's inability to pronounce but because they are taught in that way, for instance “susu” instead of “pesāb” ie, to pass urine. This is an interesting phenomenon in speech development and is due to certain baseless pre-conception like the child is too young to utter the adult words. Such functional words are universal irrespective of the sex and socio-economic status.

Children tend to name an animal by the vocal sound it makes, for example, “bhuk-bhuk” means “kukur”(dog).

### **Growth of vocabulary:**

After the uttering of the first intelligible word, children tend to add new words to their vocabulary. The rate of growth of vocabulary is marked at age 15 months. At the initial stage, no marked difference was marked among boys and girls and among children of the different socio-economic strata. The growth rate follows a steady course till the age of 36 months. This is to conclude that children continue to add words to their vocabulary in order to satisfy the need of verbal communications among adults, which is directly influenced by the stimulation and motivation he receives from the environment.

As regards the total number of words in a child's vocabulary, there was a significant difference in the higher and lower socio-economic group which was possibly due to the richer word stock among the parents of high socio-economic group, the increased amount of time these parents spent with their children along with their interest in building a richer vocabulary for their children.

It was also noted that girls at 36 months of age had a higher word stock as compared to boys.

### **Single word sentences:**

Combining words to frame sentences generally begins before the child's second birthday. The utterance of a word at this stage is accompanied by a gesture. Whenever a child is thirsty, he says "māni" (Pani, Water). This single word in such an expression is not merely a word, but a sentence meaning "Muk māni diyā" (Give me water) or "Mur piyāh lagise" (I'm thirsty). To understand such single word sentences, it is thus very essential to understand the situation in which the child utters the word.

### **Sentence communication:**

The formation of sentences takes place at around 18 months of age. The first sentences are capable of meeting the child's limited needs and tiny experiences. These are usually noun-verb combinations. Though these sentences may be grammatically incorrect, the word order is correct, ie, the noun is followed by a verb. For example, "Mām khām" (I shall eat rice). The noun in these sentences is typically a functional word and the verb a structural word. The appearances of the functional sentences may be attributed to the fact that children generally attain mental maturity by around 18 months. With advancement of age, the child's needs and desires increase. Mere utterance of a single word fails to satisfy these needs and thus a child learns the technique of combining words to form sentences.

Structurally correct sentences emerge at around 21 months and most of the functional words are shed. From this kind of development it can be inferred that a child forms his first functional sentence to satisfy his immediate needs. With advancement of age, as the child's needs increase, these functional sentences fail to fulfill

them and thus by imitating adult speech, a child gradually switches over to structural sentences. Along with the increase in the number of structural sentences, there is also an increase in the number of words in these sentences, among all children.

An important feature in the stage of sentence formation is that children generally tend to shorten adult sentences. This could be due to their shorter memory span, incapacity of their vocal apparatus to produce a long sentence or simply because they feel that a sentence can carry a meaning without certain parts, which they tend to drop.

### **Egocentricity:**

Owing to both physical and mental immaturity, a child has to depend on others to meet all his needs. In this effort, a child's content of speech becomes egocentric. But with advancing age, as the child's social contact widens, in order to gain social approval, this egocentricity is replaced by sociability which is reflected in his speech.

### **Parts of speech:**

The first part of speech in a child's speech is a noun, which continues to be a major component till about 3 years of age. Different things in the environment raise inquisitiveness in children, they ask questions, seek to know the names of different objects and thus the number of nouns in their vocabulary increases. Verbs take second position in a child's speech contents and gradually other parts of speech are acquired.

From all that has been discussed, it is observed that language development follows a definite pattern irrespective of sex and socio-economic strata. Along with maturation, motivation and stimulation play a vital role in language acquisition. The first 3 years of life is the most important stage of language development and are regarded as "TEACHABLE YEARS". The more they are stimulated, the more motivated and advanced they are in language acquisition.

## **ADULT RESPONSIBILITY FOR A CHILD'S LANGUAGE:**

Adults need to provide a language environment for its development. Parents need to avoid baby talk and engage themselves in vocal play during the babbling stage. A child's questions need to be answered adequately. From about 18 months of age something should be read to the child and from about 2 years, parents need to engage in conversation with it. Naming of objects in the environment should be continued and non-verbal communications must be avoided.

The present study is only a beginning in the development of Assamese language in the early stages of development. Each step of development has an importance and demands elaborate investigation. This study aims at emphasizing the importance of the various factors that interplay in the language acquisition and development process and thus aid not just parents but also in teaching and preparation of textbooks for primary and pre-primary level of education for an enriched vocabulary in children.

# **ORIGIN AND DEVELOPMENT OF ANKIYA DRAMA AND AN ANALYSIS OF ITS LANGUAGE**

**Dr. Gahan Kumar Mahanta**

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The mimetic instinct is a distinctive feature of human races of the world. It is universal in its appeal and it reveals itself as one of the most primitive human emotions. The fundamental or prime base of drama as a performing art is traced back to such feelings followed by external actions. Though full fledged drama was not in vogue in the primitive society, efforts have been there to make imitation of various actions with the accompaniment of dance and music. Both dance and music are vehicles through which different passions were expressed and entertained by the primitive people. Drama is said to have originated first in Egypt and Mechopotemia before 2000 B.C. In these two chief places of ancient human civilization, the dramatic activities are reported to have been in vogue where in the character in God-form, the scene, the musk, the folk-mummings, the stage and the masquerades had been used. It is to be noted that the competition theatrical performances was held in Athens during the period of Piccestretruss (535 B.C.) and the award for the best performance was given to Thespis.

Since time immemorial, there has been the culture of music and Fine Arts in ancient Kamrupa, the place which was subsequently known as Assam. Epigraphy, historical records and monuments prove that the culture of Fine and Performing Arts like Music was in vogue in Assam in a vigorous way. There are some traditional records too which support this view. One of such ancient form is the puppet dance reported to have been in use at various corners of the

country. Some other institutions attained distinctive regional characteristics at different period of history. In Assam, reference to the prevalence Ojapali, Dhulia etc., are found in earlier records.

Sankardeva(1449- 1568) the great poet, artist and social reformer, introduced a novel form of entertainment by composing some dramatic works called ‘Anka’ or ‘Nata’. The form created by him was the first of its kind in the history of Assamese literature. The enactment of these ‘Anka’ or ‘Nata’ is called Bhaona. Sankardeva used this art as a vehicle of propagating the Neo-Vaisnava faith. The ‘Cihna Yatra’ was the first dramatic show organized by him which might mean a ‘Pageant in painted scene’. It was pantomimic show with scenicbackground. Later on, it was developed into regular play incorporating music, dance and dialogues. Ankiya drama is a generic term in Assamese. This means dramatic compositions in a single act and it depicts the ideals of Vaisnava faith and importance of pursuing Bhakti. The religious belief and faith on God was the main source of inspiration for literary and cultural activities of the age. By propagating the divine glory of Lord Krisna, Sankardeva tried to familiarize the doctrines of Vaisnava faith to the ignorant and illiterate people.

The subject matter, characters, dialogues- all the elements of Angkiya drama had the same goal in view. In structure and technique there are several new characteristics. Some of these are : 1) Prominence of Sutradhara 2) The lyrical nature 3) Use of Brajawali language 4) Rhythmic prose and 5) Use of dance and music etc.

The Sutradhara is an integral part of an Ankiya Drama. In Sanskrit Drama the Nandi and Prastawana are to be recited by the Sutradhara and after that, he leaves the stage. After the invocation the Sutradhara of Sanskrit Drama disappears; but in Ankiya Drama the Sutradhara is to be present all along on the stage. He announces the entrance and exit of a character on the stage and gives them directions. With the orchestra, he dances and using song , dance and commentary, he fills up the interlude period. Brief discourses on the ethical and spiritual points of the play also is delivered by him. The Ankiya Drama is of one act having different scenes. The role of the Sutradhara is very important in the performance of Ankiya Drama because it popularises the effects of the performance among the illiterate and uneducated people. It is the Sutradhara who explains eve-

rything to the audience. Between the dramatic character and the audience, he is to act as the middle men who helps to understand the actions and behaviour of characters to the audience. The Sutradhara is an actor, a singer, a skilled dancer and a trained talented stage director . According to the directions and the gestures of the Sutradhara, the characters of Angkiya Drama move and act.

The second characteristic of Ankiya Drama is its lyrical nature. From the beginning to the end, this type of drama is fulfilled with songs and verses. Through songs and music the plot or dramatic story advances towards the end. Several situations and incidents are described through songs. Though dialogues are in prose, a lyrical tone is underlying . Sorrows, happiness, afflictions,, pleasure, joy, emotion etc., of the characters are painted dexterously in the songs of Ankiya Drama. Including the Bhatima, Sankardeva used ten songs in Patniprasada, twenty six in Parijataharana, thirty four in Keligopala etc. In Arjun Bhanjana Yatra of Madhavdeva, nine songs are used. All these songs have been classified in four groups (1) Devotional lyrics, encomium or panegyric i.e., the Bhatima (2) songs bearing Raga, tala and man, i.e., the melody, time measure and rhythm (3) narrative long verse i.e., Payara and Capaya (4)song used for entrance of dramatic characters.

The third characteristics of Ankiya Drama is its language. In Assam, the language is called Brajawali. In the nineteenth century, a scholar, named Iswarchandra Gupta used the word at first to mean this artificial language. According to Dr. Neog the term Brajawali is in literary usage, but the term Brajawali is popularly used. The vaisnava poets and composers of mediaeval period created this artificial language by mixing Maithili and Assamese language. The influence of Bhojpuri, Abadhi and Brajabhasa is noticeable in the language of Sankardeva. Sankardeva was probably influenced by the classical tradition and he introduced a new course. The new language is easily understandable than the classical Sanskrit. Keeping in view of the dignity and intelligibility, Sankardeva , used the new literary language called Brajawali. Witnessing different society, culture and the technique of performance arts, Sankardeva, set up his mind to compose, such type of drama and song on the model of Vidyapati's Brajabuli language. But his dependence on Brajabuli language created a new language where the influence of local tongue including

that a Bhojpuri, Awadhi and Brajabhasa are there. It is, however differed in some points, from the language of Vidyapati. The language of other works of Vidyapati is Avahatta i.e., Apabhrasta. The language of the ‘Pdawali’ is a mixture of Brajapuri Awahatta and Maithili. In the later period, Brajapuri Awahatta came to be known as ‘Bhojpuri’. Scholars are of the view that the term ‘Brajabuli’ is a changed form of ‘Brajapuri’. This derivation has been shown as pu>bu, ri>li; i.e., ‘Brajapuri’> ‘Brajabuli’. In mediaeval Bihar, at least three dialects were in vogue. i.e. (1) Magahi (2)Brajapuri and (3)Maithili. Influence of these dialects on the language of Ankiya Drama is evidently there. Sankardeva used Brajawali in lieu of local tongue as a medium of the writings for three reasons. He wanted to break the barrier of language. So long, Sanksrit was used by the writers of the royal courts and it was taught and accepted by the elites, as a medium of learning. But as medium of communication, Sanksrit language could not serve the purpose of the common uneducated people. Sankardeva tried his best to spread the message of Bhakti through his writings and therefore, leaving Sanksrit he introduced a kind of mixed language which could easily be understood by the people of all the walks of life. Secondly, he probably assumed that language which is a mixed one would be easily intelligible by common folk. The characters of the drama are gods and goddesses and are not ordinary human beings. If dialogues are given in colloquial language, it would surely lose the dignity of heavenly characters. Therefore, he took a middle way which is neither purely Sanksrit nor colloquial or standard Assamese. Thirdly the word ‘Braja’ is related to the past memories of the Lord Krisna, who is the central figure of Vaisnava faith and fitter nature. It was also assumed by the common man to be the language of that area. People easily considered the language to have been used by the Lord and his kinsfolk. Such an assumption resulted in easy acceptance of the language.

# **BANK FINANCING FOR ALLEVIATION OF RURAL POVERTY OF NAGAON DISTRICT-A CASE STUDY OF LAKHIMI GAONLIA BANK**

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## **INTRODUCTION**

Indian economy is primarily a rural economy. The Census of 1991 reveals that 74% of total population of India live in rural areas. Agriculture together with allied activities contribute as much as 36% to the national income of India. The contribution of agriculture to the national income of India is high as compared to other developed countries of the world. Agriculture provides raw materials to small and cottage industries Khadi and village industries in our country. Therefore agriculture is the primary occupation and one of the sources of national income of our country. India continuously to be predominant by rural areas. Basic problems of the Indian rural economy are the problem of rural poverty, because the people living in villages of India are poor.

It is necessary to consider three variables for formulating rural development programmes. These are

- Intensive survey of the area.
- planning for the individual villages
- Rapid extension of the programs in the project area with evaluation process.

## **SOCIO ECONOMIC PROFILE OF NAGAON DISTRICT**

The district of Nagaon is one of the economically backward district of Assam as it is characterized by Low per capita income agriculture based on socio economic, infrastructure, heavy per-

centage of rural population below poverty line and poor industrialisation. It is situated on the South Bank Of The mighty river Brahmaputra. Geographical location of this district is just at the middle of Assam and hence at the centre of entire North Eastern region. According to the 1991 census report more than 75% of the working forces are engaged in agriculture and its allied activities. The Nagaon district is bounded on the north by the Brahmaputra river and on the east by Karbi-anglong district and Golaghat district on the south why Karbi-anglong and on the West Morigaon district.

## **RURAL CREDIT NEEDS AND BANK FINANCING**

India is a land of villages and present economy is primarily depending on agriculture and its allied activities. it contributes nearly 40% to the national income of India and 80% of the total working force are engaged directly or indirectly in agriculture it contributes to overall economic growth supplying food raw materials for industries and export earnings.

The institutional financing and other facilities are required particularly for the small and marginal farmers, agricultural labourers, artisans and entrepreneurs in the rural areas for upliftment of the living standard.

## **AGRICULTURAL CREDIT FACILITIES**

Based on the purpose and duration of borrowings Agricultural credit may be classified into direct and indirect categories .The direct credits are those who invented to agriculturist they are further classified into short, medium and long term credit depending upon their repayment period.

Direct advances to the agriculturist includes short term loan for crops medium term loan for investment purpose for 5 to 7 years and long term loan for development purpose for 10 to 15 years whereas is indirect advances are trade distribution, gold storage, Agro services, electricity, Agro Industries Corporation etc.

## **SOURCES OF RURAL CREDIT**

The sources of rural credit for the agriculturist are government, co-operatives, banks, relatives' money lenders, professional money lenders and others. According to all India debts and invest-

ment survey reports, the money lenders accounted for 70% of the rural credit in 1951-52. But this percentage falls to 37% in 1971 and further to 23.5% in 1971. The system of money lending by village money lenders has suffered from a number of weaknesses. The main defects are as follows

- The money lenders charge very high rate of interest
- They buy agriculture produce abnormally low prices during the harvesting period.
- They manipulate the accounts for their own benefits
- When farmers fail to repay the loan they grab lands.

Again the main objectives of institutional credit policy are

- To secure an increase in total volume of institutional credit for agriculture and rural development
- To direct a large share of credit to the weaker sections
- To reduce the regional imbalances in the availability of credit.
- To bring about greater cooperation between different credit Institutions under the multi agency system
- To improve the recovery of loans to ensure continuous recycling of credit.

The bank NABARD established on 12<sup>th</sup> July 1982 is a milestone in the banking history of India which accelerated the process of development of agriculture, rural industries and allied activities and more particularly the rural development. The bank NABARD Mili provides advances for agriculture which includes irrigation power and for rural development who is includes especially small scale industries and village industries.

NABARD will have special responsibility to ensure that the training facilities for the bank staff engaged in rural lending are adequate. The RBI should continue to take active interest and necessary measures to strengthen the efforts of NABARD in improving and expanding the training facilities for project and program landing.

#### Scheduled commercial bank

The commercial banks have more actively participated in providing loans as compared to the regional rural banks and cooperative banks. At the national level commercial banks have provided

loans of 68% regional rural banks 26% and cooperative banks have provided remaining 6%.

## **RURAL PROPERTY, RURAL UNEMPLOYMENT AND RURAL INDUSTRY**

The first step in the measurement of poverty is the determination of a particular level of income and expenditure which constitutes the minimum level of living standard as a poverty line. In various studies on poverty different methods have been employed who is fixed the poverty line. The first method is taking the norm fix by a working group set up by Planning Commission in 1962 and adjusts it for temporal and special price variations. The second method estimates expenditure calories intake relationship and derives the expenditure required to meet the given calories requirement from this relationship. The 3rd method basis poverty line subject to the fulfilment of the nutrition level.

## **METHODOLOGY**

In this study the level of poverty in Nagaon district is estimated for the year 1992 93 using primary household data collected from to select on the random basis. This study the main objective is to estimate the member of household people living below poverty line and not the estimation of poverty line for the study area.

## **OCCUPATIONAL GROUPS IN NAGAON**

In Nagaon district the occupational groups may be divided large farmer's small farmers marginal farmers agricultural labourers, artisans and non agricultural labourers.

## **RURAL UNEMPLOYMENT**

Rural unemployment categorised into two classes seasonal unemployment and disguised unemployment.seasonal unemployed are identified as those that remain without work in a particular season of The Year. This type of unemployment is among the agricultural labourers, rural artisans and also seen among the educated persons.

Disguised unemployment means when more people are engaged in agriculture then are really required for carrying on the agricultural operations efficiently, they are really surplus. The unem-

ployment situation schools for immediate solution of the unemployment to promote the economic development in the country.

## **RURAL INDUSTRY**

Industry can be classified as small scale industry, agro based industry, forest based industry, service based industry. Rural Industries provide additional employment opportunities to the people in general and rural people in particular rural Industries is one of the means to observe a major portion of seasonal and regular unemployed in the rural areas. There are various scopes and potential it is to set up agro based forest based and service based industries in the rural areas of Nagaon district. Rural industries are more labour intensive they provide additional employment to rural unemployed and agricultural labourers, artisans. Rural industries if develop to an optimum level it will generate employment opportunities create assets for the poor and thereby it will increase income, purchasing power, consumption, development of agriculture and in the process of rural development.

## **OVERDUES AND RECOVERY OF LOANS**

Banks have been playing a very important role for the economic development of all sections of the society. in most of the developed countries modern banking institutions have done considerably well in promoting the development activities of these countries. In fact banking is the lifeblood of modern society. Banking institutions particularly in the rural areas can help the development process by mobilizing Savings and investment.

Under the integrated rural development programme small amount of loans is given to a large number of people in the rural areas in the state as well as in the Nagaon district. It is known for the beneficiaries that the quantum of loan given is not at all sufficient to cover up their needs so this is small amount of loan is spent on and productive route which becomes a major reason for overdue.

It was also observed that the amount of loan sanction and disbursement has also been decrease during the subsequent years due to for recovery of loans.

There are number of reasons responsible for growing a word used in the district on 30<sup>th</sup> June 1988 the recovery ratio was

49% and outstanding over dues was rupees 823.18 lakhs. The total overdues of the regional rural banks at rupees 780 4.36 lakhs in the district as at the end of March 1983. The bank have disbursed loan to beneficiaries amount rupees 65.68 lakhs and the percentage of total advances was only 30% of the total bank credit.

## **PROBLEMS OF BANK FINANCING**

The bank financing problem in India can be classified into two forms as problems of Financing Institutions and problems of borrowers...

Problems of bank finance institutions are

- 1 .branch expansion problems
2. Policy and procedure problems
- 3 security problems
4. Refinance and resource problems
5. Outstanding and over dues problems
6. Profitability and operational cost problems
7. Working capital problems etc.

## **Problems of Borrowers**

1. Illiteracy
2. Formalities
3. Security
4. Delay in sanctioning
5. Inadequacy of loan six natural problems 7 under investment problems.

## **CASE STUDY LAKHIMI GAONLIA BANK**

The Lakhimi Gaonlia Bank (L.G.B) is the third regional Rural Bank in North Eastern India. The first and second bank are Pragjyotish Gaonlia bank and Trpura Gramin Bank. LGB has been sponsored by the United bank of India and it came into existence on 28<sup>th</sup> july,1980 under Regional Rural bank Act 1976 with the head office at Golaghat in the state of Assam. Initially the bank was operating in two districts viz. Sibsagar and Nagaon. Later on, the state government has reorganised these two districts, the Sibsagar district and subdivided into Jorhat, Golaghat and Sibsagar and Nagaon dis-

trict was subdivided into Morigaon and Nagaon. The bank was extended its area of operation of these districts without any changes of geographical area.

In 12<sup>th</sup> January 2006 Lakhimi Gaonlia Bank was amalgamated with Pragjyotish Gaonlia bank, Cachar Gramin bank and Su-bansiri gaolia bank and known as Assam Gramin Vikash Bank .

## **FINDINGS SUGGESTIONS AND CONCLUSION**

Following are the findings of the study

1. Agricultural activities are the main occupation of the district irrigation facilities and other infrastructural provisions are insufficient to serve this sector. Irrigation coverage is only 15% cultivated area in the district .In the absence of sufficient and assured irrigation facilities the cultivators of the district are dependent on vagaries of weather.
2. Varieties of crops are grown in the district the main crops in the district rice wheat jute cotton sugarcane mustard seeds Ravi pulses etc the main cropping pattern of the district has remain static all the cropping pattern has radically changed in other part of country.
3. Bank facilities in the district are also inadequate. There are altogether 92 Bank branches functioning in the district there is only one bank branch for every 20.35 thousand persons as against 18.4 1 thousand power bank office in the state.
4. There is no regulated market in Nagaon district.
5. There are 699 cooperative societies in the district but failed to serve the district properly.
6. Professional and Technical educational institutions are not at all sufficient in Nagaon district.

## **SUGGESTION**

Following are suggestion from my study...

1. The local resources and potentials of skills and experiences of man and woman should be given priority.
2. The urgency of time is to spread technical knowledge, which

will directly or indirectly help the weaker section of the society for taking up new avenues on scientific method to increase their production and earnings. Adult education programme on bank scheme can be taken by the government department, agencies and bank to impart training and motivate the beneficiaries under IRDP programme.

3. To mitigate the impact of irregular, uneven and scanty rainfall with wide fluctuations, irrigation facilities should be provided.
4. The government agencies should help in developing infrastructure, especially in case where problems come up at a later date.
5. Increasing training is necessary at this local level, particularly for development managers, regional and project planners, branch manager and staff of bank branches, co-operatives societies and extension offers.
6. It is important to involve the rural poor, particularly the target groups in the planning and implementation of rural programmes with their active co-operation.

## **CONCLUSION**

In many instances it has been observed that there is a delay in section of loans, non- utilisation of available funds for the purpose for which it was sanctioned, diversion of funds and lack of monitoring, under investment of funds and overdue problems. There is a great scope for rural development, particularly eradication of poverty from rural areas by co-ordinated approach of all organisations, agencies and the parties involved.

# **SYNTHESIS OF POLYURETHANE POLYVINYL BLOCK AND GRAFT COPOLYMERS BY INIFERTER TECHNIQUE AND THEIR PHYSICO-CHEMICAL STUDIES**

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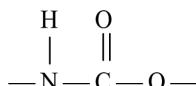
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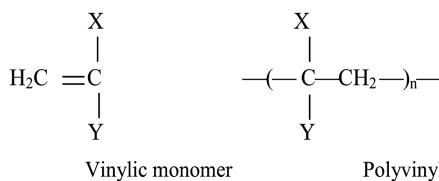
## **INTRODUCTION**

Polyurethanes are a broad class of polymers having only one aspect in common – the presence of urethane linkage.



But the urethane linkage may constitute only a portion of the total number of linkages in the polymer chain.

Polyvinyls are polymers of vinylic monomers, like styrene, methyl-methacrylate (MMA), methyl acrylate, acrylic acid, acrylonitrile (AN) etc.



Y-H,	X-ph, X – CN, X – COOH, X – COOME,	Styrene acrylonitrile acrylic acid methylacrylate	Polystyrene Polyacrylonitrile Poly acrylic acid Polymethylacrylate
Y-CH <sub>3</sub> ,	X – COOME, Y - CH <sub>3</sub> X-COOCH <sub>2</sub> -CH <sub>2</sub> -OH	methyl methacrylate 2-hydroxy ethyl- methacrylate	Polymethyl methacrylate poly 2- hydroxyethylmetha- crylate.

Segmented polyurethanes are block copolymers of the (AB)<sub>n</sub> type consisting of alternating rigid and flexible segments. They are a unique class of thermoplastic materials. The soft segments of segmented polyurethanes are usually derived from linear polyether or polyester macrodiols having molecular weight between 600 and 3000. The hard segment is often an aromatic diisocyanate that has been chain extended with a low molecular weight diol. By changing the nature of the diisocyanate, low molecular weight diol and macrodiol, a variety of hard and soft segments, having different compositions and chemical structures can be attained. This results in the alteration of the physical properties and morphology of the polyurethanes. It is this potential for tailoring the properties of polyurethanes to suit a specific purpose, has made it a highly versatile class of polymer.

Modification of polymeric materials to improve their performance as well as to widen their field of application has been a fascinating field of research. The scope of utility of polyurethanes can be widened by its modifications. One way of modification may be its block and graft copolymerisation with vinyl monomers. For controlled incorporation of vinyl blocks into polyurethane blocks, iniferter concept developed by Otsu can be employed.

Two iniferters, one thermal- and another photo- were investigated for block and graft copolymerisation. The C – C bond in tetraphenyl ethane moiety is sterically hindered, thermally labile and acts as a thermal iniferter group. Polyurethane with this thermally labile group behaves as thermal macroiniferter. Such macroiniferters were synthesised and utilised for the synthesis of (PU-b-PAN)-block and (PU-b-PHEMA)-block copolymers. N,N-diethyl dithiocarbamato group is known to act as photoiniferter. A diol with pendent N,N-diethyl dithiocarbamato group was synthesised. This diol was investigated for its iniferter nature by photopolymerisation of MMA. It was then incorporated into polyurethane to synthesise polyurethane macrophotoinitiator with pendent photolabile dithiocarbamato groups. This macrophotoinitiator was then used to synthesise PU-g-PMMA.

## **POLYURETHANE CHEMISTRY:**

The initial discovery of polyurethanes was made by Otto

Bayer and coworkers at I.G. Farbenindustrie, Germany in 1937. This followed as a competitive response to the work by Carothers of E.I. du pont de Nemours and Co. on polyamides or nylons.

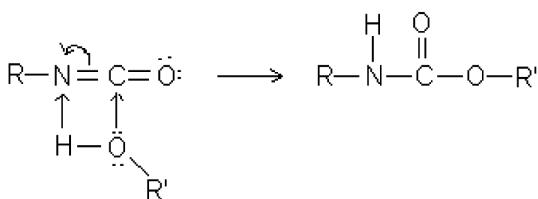
Segmented polyurethanes are a unique class of thermoplastic materials and are block copolymers of the  $(AB)_n$  type consisting of alternating rigid (hard) and flexible (soft) segments. Due to the different polarity and chemical nature of these segments, they tend to separate into two phases usually referred to as soft and hard phases. These soft segments are usually derived from linear polyether or polyester macrodiols while the hard segments are obtained from diisocyanates chain extended with low-molecular weight diols.

There are two methods for the preparation of segmented polyurethanes viz:

1. The pre-polymer or two step method and
2. One step process.

In the pre-polymer method, initially the diisocyanate and polyol are reacted together to form an intermediate polymer and this is then converted into the final polymer by further reaction with a diol or diamine chain extender. But in the one step method the polymerisation is carried out by simultaneously mixing together polyol, diisocyanate and chain extender in the presence of catalysts.

The chemistry involved in the synthesis of polyurethane elastomers centres around the reactions of the isocyanate group. Because of the existence of multiple structures, several classes of reactions involving the isocyanate group are possible. Reaction can occur across the C=N bond in a variety of ways including adduct formation, oligomerisation, cyclo-addition and insertion reactions. The primary reaction in the polymerisation of isocyanates is the insertion reaction. The reaction proceeds by a nucleophilic attack at the carbon atom in the isocyanate group, as shown in the equation for the reaction of an alcohol with an isocyanate.



The product of this reaction is a carbamate ester linkage, which is more commonly known as a urethane linkage.

**a) Basic urethane building blocks :**

A typical polyurethane block copolymer consists of rigid and flexible alternating segments. The hard (rigid) segment consists of a diisocyanate chain extended with a low molecular weight diol or diamine. The soft (flexible) segment is a long-chain macroglycol. The common materials used in polyurethane systems are described below.

**b) Isocyanates :**

The two most commonly used isocyanates in polyurethane synthesis are toluene diisocyanates (TDI) and 4,4 -diphenylmethane diisocyanate (MDI). Of these two, MDI has superior reactivity and polymers based on MDI may possess better physical properties. Other aromatic diisocyanates, such as naphthalene diisocyanate (NDI) and 3,3 -bitoluene diisocyanate (TODI) can also result in high performance polymers, but at a higher cost than MDI based materials. Because aromatic diisocyanates and polymers made from them are somewhat unstable towards light, aliphatic isocyanates have found wide use in coating applications. Typical aliphatic isocyanates include 1,6 – hexane diisocyanate (HDI), isophorone diisocyanate (IPDI) and methylene –bis(p-cyclohexyl isocyanate) ( $H_{12}MDI$ ).

**c) Polyol soft segments :**

These soft segment polymers are hydroxy terminated polymers with molecular weights usually in the range of 600 to 3000 and glass-transition temperatures well below ambient temperature. Polyols available for elastomer synthesis include polyethers, polyesters, polyalkyls and polydimethyl siloxanes.

Traditionally, polyurethanes have been produced with polyester and polyether soft segments. Polyester based urethanes possess relatively good material properties. However, they are susceptible to hydrolytic cleavage of the ester linkages. The polyether based urethanes exhibit a relatively high resistance to hydrolytic cleavage. Polyethylene oxide based materials show poor water resistance due to the hydrophilic nature of the soft segments. Polypropylene oxide

based polyurethanes are typically very soft. The polyether that results in a polyurethane with the best physical properties is polytetramethylene oxide (PTMO). Urethanes prepared with this soft segment show a level of mechanical strength comparable to that of polyester polyurethanes and possess relatively good hydrolytic stability and water resistance.

The polyethers of most interest in solid polyurethanes are the polypropylene glycols and the polytetramethylene glycols. These polyethers are usually prepared by the base-catalysed addition polymerisation of the monomeric epoxides

#### **d) Chain extenders :**

The reaction of equimolar quantities of a macroglycol and diisocyanate generally results in a polymer that may not exhibit microphase separation and may possess very poor physical properties. A low molecular weight bifunctional chain extender which, when reacted with the diisocyanate, results in a high molecular weight hard segment, is included to produce a polyurethane with a two-phase microstructure and desirable physical properties.

### **BLOCK AND GRAFT COPOLYMERS**

A general discussion on block and graft copolymer is presented here.

Block and graft copolymers are synthesised by using variety of methodologies. However, only a few approaches lead to the formation of block copolymers with controlled and well defined structures. The living chain growth polymerisations provide the most general methods for the synthesis of block copolymers with well-defined structures. Living polymerisation systems which can be used for the synthesis of block copolymers include anionic, cationic, group-transfer and polymerisation with Ziegler-Natta catalysts.

A method known as iniferter technique has been developed by otsu et al. to synthesise variety of block copolymers. Iniferter word is derived from the combination of initiator, transfer agent and terminator. Otsu et al. developed the iniferter chemistry where the same species serves the purpose of initiator, transfer agent and terminator in radical polymerisation.

Iniferters may be activated both by thermal and photochemical means. When an iniferter is used as an initiator, living radical polymerisation can be carried out using the same mild reaction conditions as in general radical polymerisation reaction .So far, several important types of iniferters such as thiuram disulfides, dithiocarbamates and tetraphenyl ethane derivatives have been used to carry out living radical polymerisation reaction. Both the thermally and photochemically labile iniferters were used for the preparation of block and graft copolymers.

Graft copolymers can also be obtained by irradiation techniques. Grafting of vinyl monomers onto polymers containing benzoin methyl ether side groups capable of undergoing a -scission on irradiation at wave length, $\lambda=360$  nm was reported by Jackson and co-worker. The dithiocarbamate group containing a polymerisable double bond can be used for the synthesis of macro monomers and graft copolymers.

## **STRUCTURE –PROPERTY RELATIONSHIPS IN POLYURETHANE ELASTOMERS AND BLOCK COPOLYMERS**

This chapter contains a general discussion on the structure – property relationships in Polyurethane elastomers and Block copolymers.

The polyurethanes contain a high concentration of polar groups. The interactions between these polar entities are of great importance in determining the properties of polyurethanes of all types, and specially the polyurethane block copolymers where local concentration of polar groups occur together. The rigid segments in polyurethane block copolymers particularly affect the modulus, hardness etc. and determine the upper-use temperature by their ability to remain associated at elevated temperatures. The flexible blocks primarily influence the elastic nature of the product and its low temperature performance and they make important contributions towards the hardness, modulus etc.

The thermal and mechanical properties of polyurethanes as well as the resultant copolymers are determined by a number of factors, including the type of soft phase and hard phase, interactions between the hard and soft phases, molecular weight and crystallinity.

## EXPERIMENTAL

This chapter describes the purification of chemicals used, synthesis of iniferters, synthesis of PU- macroiniferters incorporating the iniferter moiety in the main chain as well as in the side chain and synthesis of polyurethane-polyvinyl block and graft copolymers. Further this contains brief descriptions of different instruments and instrumental techniques used for the characterisation and physico-chemical studies of the polymers.

1,1,2,2-tetraphenyl ethane diol (TPED) was synthesised from benzophenone and 2-propanol.

A new photoinitiator, N,N-diethyldithiocarbamato-(1,2)-propane diol (DCPD) was synthesised from 3-chloro- 1,2 propane-diol (CPD) and sodium diethyldithiocarbamate (NaSR) in a solvent mixture of acetone and anhydrous ethanol.

TPED contains a sterically hindered C – C single bond for which it acts as thermal iniferter in free radical polymerisation. DCPD contains photolabile C – S bond which breaks on irradiation with UV-light (254-366 nm) and can act as photoinitiator.

Segmented polyurethane (PU) was synthesised from 4,4'-diphenylmethane diisocyanate (MDI), polypropylene glycol (PPG), MW 1000 and 1,4-butanediol (BD) by the two step process. The catalyst used was dibutyltindilaureate (DBTDL)

Polyurethane macroiniferters (PUMI) having varying percentage of TPED in the backbone were synthesised. This was done by changing the amount of TPED in the chain extender mixture of TPED and BD in the two step synthesis of polyurethane macroiniferter from MDI, PPG, TPED and BD.

Polyurethane macroiniferters and acrylonitrile (AN) were reacted to synthesize polyurethane-polyacrylonitrile (PU-PAN) block copolymers. Similarly, Polyurethane-poly-2-hydroxy ethyl-methacrylate (PU-PHEMA) block copolymers were also synthesised from polyurethane macroiniferters and 2- hydroxyethyl methacrylate.

Photopolymerisation of methylmethacrylate (MMA) initiated by DCPD were studied at varying reaction conditions. The ph-

topolymerisations were carried out in a Heber multilamp photochemical reactor at 254 nm.

The polymethyl methacrylate-polystyrene (PMMA-PSt) block was also synthesised from the resulting polymethylmethacrylate (PMMA) and styrene (St) in a Heber multilamp photochemical reactor at 254 nm.

A polyurethane photoiniferter (PU-SR) was synthesised from MDI, PPG and DCPD in a two step process.

This photoiniferter was used to synthesise polyurethane-graft-polymethylmethacrylate (PU-g-PMMA) copolymer.

## RESULTS AND DISCUSSION

The characterisations of polymeric materials synthesised were reported in this chapter. Polyurethanes, PU-b-PAN block and PU-b-PHEMA block were characterised by FTIR, NMR, Scanning electron microscope (SEM) and dilute solution viscosity study. Thermal properties of these polymers were also studied by TGA and DSC measurements.

DCPD was characterised by UV, FTIR, NMR and elemental analysis. Polymethyl methacrylates (PMMA) and PMMA-PSt block synthesised were also studied by FTIR, NMR and Gel permeation chromatography (GPC) measurement.

PU-SR and PU-graft-PMMA were characterised by FTIR, NMR and SEM. The dilute solution viscosity measurements were also studied. The thermal behaviour of these polymer were also studied by TGA.

## CONCLUSION

The objective of this research work was to investigate the applicability of the iniferter technique in the synthesis of block and graft copolymers of polyurethanes, through the intermediacy of polyurethane thermal and photo macroiniferters and then to carry out physico-chemical studies of them. All the results obtained from spectroscopic analysis, thermogravimetric studies and solution viscometric studies revealed the formation of block and graft copolymers of polyurethane. Differential scanning calorimetry(DSC) showed that graft copolymerization affected the glass-transition

temperature of the polyurethane soft segment. The scanning electron microscopy also revealed that hard-soft domain segregation of the polyurethane macroiniferter was influenced as a result of grafting PMMA onto it. The living radical nature of the polymer PMMA synthesized, was confirmed by its capability to form block copolymer with styrene and acrylonitrile.

The thesis ends with a detail list of references which have been used during the research work.

# **SYSTEMATIC SURVEY AND TAXONOMIC STUDIES OF ORCHID FLORA OF NAGAON DISTRICT (UNDIVIDED) WITH SPECIAL EMPHASIS ON THE CYTOLOGY OF SELECTED TAXA FOR IMPROVEMENT BY HYBRIDIZATION**

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## **INTRODUCTION**

Since time immemorial Orchids become the center of attraction among the naturalists. Orchids are accepted to be the World's most exotic and fascinating flowers, with their extraordinary Variety of sizes, shapes, colours, and markings. The painter in Water-colours, the Ceramic artist, the Sculptor and the Photographer all find in Orchids the inspiration for their art. Attracted by the exciting colour combination and unique structure of Orchids in olden time intrepid Orchid collectors took the risk of life in search of Orchids in Wild uncharted places where there were possibility of encounter with primitive peoples and other natural enemy in every step. This mania of Orchid collection increased with the discovery of each and every new species.

Orchids have been occupying an important position in the folk culture and rituals of different races since ancient time. In ancient time Greeks paid their respect to root tubers of Orchids, which looks like human testis, as a symbol of virility. At the time of Confucius, the Chinese considered many Orchids as the "The plant of the King's fragrance." In India, there are legends related with the

*Rhyncostylis retusa* and *Aerides* species. *Rhyncostylis retusa* were known as “Seeta Puspa” and *Aerides* species were known as “Draupati Puspa”. These species are considered as symbol of purity and worn by Indian women with utmost reverence. It is believed that Princesses Sita and Draupati especially adorned these sweet scented pretty flowers and wore it on their head while in exile. In Assam during Rangali Bihu festival (Mid April), the Assamese girls adorn the beautiful spike of *Rhyncostylis retusa*,, popularly known as Kopou phul, on their head. It symbolizes youthfulness during springtime. In Moluccan Islands, it is believed that the seeds of *Grammatophyllum scriptum* excite love. In Borneo, *Coelogyne asperata* is kept inside home in a belief that these Orchids help overcome human difficulties. In China, Orchids become the symbol for superior men and women of esteem. The term “Lan” is used representing an Orchid and also the men and women of esteem. *Dendrobium hookerianum*, *Dendrobium nobile*, . *Dendrobium gibsoni* are generally found grown by Gonpas of Arunachal Pradesh as symbol of sanctity. *Cymbidium grandiflorum* is used for holy worship by the Monpas of Arunachal Pradesh. In Tirap District, the wancho tribal houses are generally seen with *Vanda coerulea* popularly called “Rangpu” for their beautiful delicate blue flowers.

In addition to the ornamental value, a large number of Orchids are being used for medicinal purpose since ancient times. From ancient time Orchids are known world wide for the medicinal properties. Indian knew Orchids as medicinal plants right from vedic period. In the Sanskrit literature like “Nighantus” and “Amarkosha” by Sushruta and Vagvata respectively (150 – 300 BC), clear reference is there regarding the medicinal properties of Orchids. The mention of leaves of *Vanda roxburghii* (Sans. Vandaka) prescribing for external application in rheumatism and allied disorders of nervous system have been reported in the above treatises. The famous “salmisiri” (Sans. Saleep misiri ) used presently as tonic, aphrodisiac and as blood purifier is extracted from an Orchid. Native inhabitants in different part of the World use several other Orchids as medicine. Thus Orchids hold a good position to be used in the production of traditional medicine, proper utilization of which may change the economy of a country. In this connection, it is worthwhile to mention that traditional drugs worth a hundred crore rupees are being produced annually in India (Handa, 1986).

## **OBJECTIVES**

The World is an immeasurably poorer place if there were no wild Orchids. But the fact is that, this is going to happen due to the unjustified activities of human. For example to meet the demand of aristocrats in 19<sup>th</sup> century a large number of Orchids were collected from the wild of tropical countries. In Belgium and England especially vast quantities of tropical Orchids were introduced from the new colonies for auction to the proud possessors of green houses. It has been recorded that a major commercial Orchid nursery in England imported over a million plants of *Odontoglossum crispum* from South America in a single shipment. The nursery had two railway sidings that were in use day and night with the unloading of vans of plants that had been rushed from the docs of Southampton and Liverpool.

Near about 20,000 Orchid species are found around the globe. In India about 1300 species are found. The phytogeographical analysis shows that about 280 species of Orchids are endemic to India, whereas 30 genera have 50% or more of their species in India, endemic to India (Jain, 1986). Within India the Peninsular region has the highest degree of endemism (104 species) followed by Eastern Himalayas (86 species) and Eastern India (57 species). If these species are lost from these regions, these will be lost forever from the World.

There is always the danger that unless scientific conservation measures are taken along with proper utilization, India in general and North East in particular is sure to loose most of the valuable Orchid wealth that are of medicinal, horticultural and aesthetic values (Rao, 1979; Handa, 1986). Several Orchid species have become extinct, many are endangered and several are at the verge of extinction due to various activities e.g. indiscriminate cutting of forest, shifting agriculture and ruthless exploitation of Orchids for trade. For example, in the Laokhowa wildlife sanctuary of Nagaon district of Assam, a large number of Orchid species are lost with the quantum destruction of their host plants by antisocial elements. In the Hilly States of North East India, the practice of shifting cultivation causes the destruction of different Orchids species. In the meantime the clandestine trade is continuing without any check, even after banned notice from Govt. of India. So, it is high time to conserve

## the Orchid heritage

It is estimated that the North East India is one of the richest habitat of Indian Orchids. About 700 species of Orchids are found in this area. In Assam approximately 182 species of Orchids are encountered (Nageswar Rao, 1995). Nagaon is one district of Assam situated in the middle part of the state in between the Longitude 92<sup>0</sup> East and Latitude 26<sup>0</sup> North. Several reserve forests, Wildlife sanctuaries etc. are there in the undivided Nagaon district. Pabitora Wildlife sanctuary, Amsoi reserve forest, Doboka reserve forest, Laokhowa Wildlife sanctuary, Diju valley reserve forest, Bagsar reserve forest (Chikoni Hills), a fraction of famous Kaziranga National Park etc. are important natural habitats of Nagaon district harbouring a good number of wild flora and fauna. A large number of Orchids are supposed to present in these forests. But in last few years it is observed that the ecological status of these forests is deteriorating due to different factors. Regular deforestation is now a common phenomenon in some reserve forests. For example the original forest area of Laokhowa wildlife sanctuary is contracted up to approximately half of its original. Every day a huge number of logs are carried out from the jungle. With the felling of one host tree, large number of epiphytic Orchids are destroyed. Similar is the case in Diju valley reserve forest. With the destruction of host plants these species may lose their existence in the district. Increasing population and increasing unemployment problem are the major factors behind the unchecked deforestation. So, it is very important to make a detail survey of the family Orchidaceae in the district and to take proper measure for their conservation. Conservation of orchids fulfills not only the botanical interest but it may also help in finding out some solutions to the burning unemployment problem. Orchids have good demand as cut flower as well as plant material in the national as well as international market. Cultivating Orchids, small nurseries can be developed throughout the district, which may help in improving the unemployment problem of the district.

Considering all these aspects the present investigation is aimed to make a detail survey and taxonomic study of the Orchids found in the district and to conserve them in *ex-situ* (i.e. in Orchidarium) condition. One more objective of the work is to study the cytological behaviour of selected taxa to know the competency for hybridization.

zation. For hybridization it is very important to know the cytological behaviour of the selected plants for hybridization before the programme taken in hand. Chromosomes of distinct species may be expected to have differentiated to various degrees; chromosomes of closely related species would be more similar to each other than would be those of unrelated species. Thus chromosomes of related species would be partially similar to each other and are known as homogenous chromosome. Successful hybridization between two species suggests some degree of relationship between them; hence interspecific hybrids would have two or more homogenous chromosomes. The survey work will also help in selecting the Orchids, which are rare in distribution in the district, which will require large scale propagation and their conservation. Keeping all these aspects in mind the following plan of works are designed.

### **Plan of work**

1. Survey, identification and collection of the species throughout the Undivided Nagaon District.
2. Maintenance and propagation of the collected species/ varieties, inside the Orchidarium.
3. Detailed taxonomic studies including the ornamental values of each species / varieties.
4. Statistical analysis of the different taxonomic characters where and when necessary.
5. Selections of taxa showing better adaptability and better performance.
6. Cytological studies of suitable and selective taxa for improvement by hybridization.

### **SUMMARY OF THE FINDINGS OF THE WORK**

Investigations were undertaken to survey the family Orchidaceae in undivided Nagaon district, their preservation, taxonomic enumeration, improvement of some of them by selection, and cytological study of selected species. The salient findings of the investigation are summarized below. -

### **DISTRIBUTION**

1. Undivided Nagaon district of Assam harbour 32 Orchid species under 18 genera.

2. Out of 32 species 7 species were terrestrial and the rest are epiphytic.
3. Eight species were endemic to the North East India, 3 species were endangered, 13 were rare, and 3 species were threatened.
4. *Dendrobium*, *Cymbidium*, and *Papilionanthe* were the dominant genera in the district.
5. Diju Valley reserve forest and Kaziranga National Park harbour the highest number of species i.e. 19 and Pobitora harbour the lowest i.e. 3.
6. Habitat destruction becomes a major problem for the existence of Orchid species in the district.

## TAXONOMIC ENUMERATION

1. All the species found in Nagaon district belong to the subfamily Orchidoideae.
2. One unidentified species was suspected to be a mutant variety of *Dendrobium aphyllum* (Roxb.) Fischer.
3. Taxonomic works of all the species were carried out.
4. During taxonomic works no significant differences were noticed with the earlier workers except a suspected mutant variety of *Dendrobium aphyllum* (Roxb.) Fischer.

## SELECTION

1. Propagation rate was highest in *Dendrobium aphyllum* i.e.  $6.46 \pm 1.8$ .
2. Vase life was highest in *Cymbidium* and *Papilionanthe* i.e.  $21 \pm 2$  and  $21.3 \pm 1.52$  respectively.
3. *Aerides*, *Cymbidium*, *Dendrobium*, and *Rhyncostylis* were selected for improvement by selection.
4. After the investigation *Aerides multiflora*, *Aerides odorata*, *Dendrobium aphyllum*, *Dendrobium lituiflorum*, *Dendrobium nobile*, *Rhyncostylis retusa* were improved to be elite varieties

## CYTOLOGY

1. *Aerides multiflora* Roxb., *Dendrobium aphyllum* (Roxb.) Fischer., *Dendrobium aphyllum* (Suspected mutant variety) *Dendrobium fimbriatum* Hook. were selected for cytological studies.

2. Chromosome numbers in the investigated *Aerides multiflora* was found  $2n = 22$ .
3. 3 pairs of chromosomes were metacentric, 6 pairs were submetacentric, and 2 pairs were submetacentric with secondary constriction.
4. TF% of the species was calculated as 39.45.
5. Chromosome numbers in *Dendrobium aphyllum* (Roxb.) Fischer. was found  $2n = 38$ .
6. 12 pairs of chromosomes were metacentric, 6 pairs were submetacentric and 1 pair was submetacentric with secondary constriction.
7. TF% of *Dendrobium aphyllum* (Roxb.) Fischer. counted was 44.24.
8. Chromosome numbers in *Dendrobium aphyllum* (suspected mutant variety) was found  $2n = 38$ .
9. 12 pairs of chromosomes were metacentric, 6 pairs were submetacentric and 1 pair was submetacentric with secondary constriction.
10. TF% of *Dendrobium aphyllum* (suspected mutant variety) counted was 42.59.
11. Chromosome numbers in the investigated *Dendrobium fimbriatum* Hook. was found  $2n = 18$ .
12. 3 pairs of chromosomes were metacentric, 5 pairs were submetacentric, and 1 pair was submetacentric with secondary constriction.
13. TF% of the species was calculated as 41.93.
14. No notable differences were observed with the earlier workers except slight differences in chromosome size and Total Form percentage.

# **PROBLEMS AND PROSPECT OF WOMEN EDUCATION AMONG THE TEA TRIBES OF NAGAON DISTRICT: A CRITICAL STUDY**

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## **INTRODUCTION**

Tea is the very widely used favorite beverages in all over the world. Tea is one of the oldest industries in India with a history dating back more than 150 years. Women constitute more than half of the total labour force working on the tea industries of Assam and North East India. In the state of Assam majority of the women worker of the tea plantation are generally illiterate. Owing to illiteracy and ignorance they are victim of superstition and out dated beliefs and slow in changing their outlook. Their social status and standard of living is significantly low even today. The problem and issues faced by women workers on tea plantation are similar in all the tea gardens of Assam. These women generally share a common historical heritage of poverty and suppression. Being confined to limited horizon it is difficult to expect them to be more conscious of their rights and privileges. It is felt that the most important agent for improving the status of women workers of the tea plantation would be their proper education.

## **SIGNIFICANCE OF THE PROBLEM**

Women form an integral part of any social structure. They play a very important role for the progress of the society. Women constitute half of the total population of human race and they have to play different social role in their life like wife, daughter, sister etc. Women are builders of the nation right from early days in their homes and it is at their hands that the children received first educa-

tion. Though the tea industries has made significant contribution to the national economy in earning of foreign exchange and prosperity yet it has not been able to fulfill its commitment towards the progress of the workers specially the vast daily rated women labour force who remains as a neglected segment.

The main aim of the study is to examine in detail the main problems of educational backwardness of tea garden women in Nagaon district and analyzed the scope of improvement of their educational and living conditions. It also tries to find out the factors which are responsible for the educational backwardness, non enrollment of girls, parents attitude particularly with regard to the tea tribe women. Many steps have been suggested for working conditions of tea labours from time to time. Some studies are conducted by Choudhury (1977), Ahmed (1978), Narinder K. Singh (2001, Sahaaria (2005) on tribal children in relation to their intelligence, Achievements, problems of tea labours and the role of women workers in the tea industry etc. There is hardly any reference available with regard to problems of women education of tea tribe community and specially in the context of Nagaon district of Assam. Above all the study has created the necessary data base for any next venture in this area.

## **STATEMENT OF THE PROBLEM**

The problem of the present study is stated as "**Problems and Prospect of Women Education among the Tea Garden Tribes of Nagaon District - A Critical Study**".

## **OBJECTIVE OF THE STUDY**

The study is proposed with the following objectives:

- i) To find out the women literacy among tea garden tribes of Nagaon District.
- ii) To identify the factors causing non enrollment of girls at the school level.
- iii) To identify the factors leading to dropout and low enrollment of girls at school stage.
- iv) To study the availability of schools and other related facilities for education of the tea garden tribe women.
- v) To find out the government policies/ initiatives and their

- impact for the education of the tea garden women.
- vi) To study the impact of education in regard to the empowerment of women among tea tribes.

## **RESEARCH QUESTIONS**

- The researcher decided to answer the following questions:
1. What is the extent of literacy rate among the tea garden tribe women?
  2. What are the problems for non enrollment of girls at the school level?
  3. What are the factors leading to dropout and low enrollment of girls students at school stage?
  4. Are there primary schools and other related facilities in the primary schools of tea garden areas?
  5. What are various welfare schemes for the tea garden tribes in general and women in particular for improving their educational status and standard of living?
  6. What is the impact of education on women empowerment?

## **METHODOLOGY OF THE STUDY**

Keeping in view the purpose of importance of the present study the investigator has adopted "Survey Studies" based on Descriptive Research Method.

## **POPULATION AND SOURCE OF DATA**

Present study includes all the female population of tea gardens of Nagaon district.

## **SAMPLE**

The sample was selected from the total female population of the Tea gardens of Nagaon district. Total female population in Tea gardens of Nagaon district is 21142 out of which a sample of 892 was selected. The criteria of selection of sample were based on the principle of stratified random sampling. Age and stages of education was used for stratification.

## **TOOL USED**

In order to fulfill the objectives of the study following tools were used-

- i) Questionnaire
- ii) Interview schedule

## **DATA COLLECTION**

Primary data were collected by administering questionnaire and interview schedule. For this door to door survey was done on selected household and Tea garden primary schools during the calendar year 2009-10..

Secondary data were collected from census report published by government of India, government offices, Welfare officer, Manager, Mazdoor Sangha, books, Journals and visit websites.

## **ANALYSIS AND INTERPRETATION OF DATA**

The collected data were systematically arranged organized and tabulated for analysis. The investigator employed percentage analysis as the principal technique for the analysis of data.

## **DELIMITATION OF THE STUDY**

1. The study delimited to girls and women of the age group 6-14, 15-17 and 18 years and above of 16 tea gardens of Nagaon district only.
2. The findings of the study were confined to the sample size of 892 girls and women of 16 tea gardens of Nagaon district

## **MAIN FINDINGS OF THE STUDY**

The main findings of the study are drawn on the basis of analysis and interpretation of data. The majority of women workers in tea plantation of Assam are generally found illiterate even today. After independence of India three or four successive generations of women workers have grown up tea plantation in Assam but still they are steeped in ignorance and illiteracy. This study is an attempt to identify the factors which are responsible for their illiteracy

## **LITERACY PERCENTAGE**

- There are 19 tea gardens in Nagaon district according to 2001 census. Tea tribe population in 19 tea gardens is 42706 out of which 21564 are male and 21142 are female. The female literacy rate of 19 tea gardens as per 2001 census was 23.75% (5023

out of 21142). The study shows that altogether 537 out of 892 women (60.20%) are enrolled in school in different stages of education. Due to implementation of Government policies the literacy rate has increased by 36.45%.

- The study also reveals that 40.91% girls are literate up to primary level while 15.35% women educated up to secondary level and only 3.92% are pursuing education above secondary level.
- At present 82.04% girls in the age group 6-14 years are enrolled in primary level while 57.50% girls enrolled in secondary level and 4.30% enrolled in above secondary level of education.
- It is found from the study that nearly 39.79% (355 out of 892) are illiterate. On the other hand percentage of non enrolled girls in the age group 6-14 is 4.22%, in the age group 15-17 years 14.16% and 66.80% in the age group 18 years and above.
- Plantation Labour Act 1951 (PLA) had made provision for primary schools in every garden. Government of Assam in pursuance of the powers conferred by subsection (i) of section 43 of PLA 1951 has enacted the Assam Plantation Labour Rules 1956. It is seen from the study that despite of efforts made by Sarva Shikha Abhiyan (SSA) Assam and availabilities of primary schools in all tea gardens, 4.22% girls are not enrolled in the age group of 6-14 years and 29.04% of girls dropout at primary level due to economic constraint, household works, engagement of wage earning job, early marriage etc. Percentage of Non enrolled girls in the age group 15-17 years is 14.16% and above 18 years is 60.80%. This shows that most of the girls discontinue their studies after elementary stage.

## **REASONS FOR NON-ENROLMENT AND DROPOUT**

- The primary cause why girls are never enrolled into school or dropout at various stages of education is that they are made to engage in household works and early marriage. As many as 51.87 percent have stated this reason whereas 30.84 percent do not attend school owing to early marriage.

## **HIGHER EDUCATION**

- In case of higher education amongst women in the tea tribe

community, the results are not up to the mark, as only 3.92% have so far enrolled themselves or pursuing education in the above secondary level institution

## **INFRASTRUCTURAL DEVELOPMENT IN TEA GARDEN SCHOOLS**

- Despite the introduction of Sarva Shiksha Abhiyan (SSA) in all the district of Assam, little significant progress has been observed in the infrastructural development of primary schools in the tea gardens.

## **HEALTH FACILITIES**

- In spite of provisions under Plantation Labour Act 1951, health facilities for tea tribe community are not satisfactory.
- A vast majority of families in the tea tribe communities do not maintain proper hygiene; 91% of the families do not have modern sanitary facilities in their homes.

## **CAUSES OF SOCIO ECONOMIC BACKWARDNESS**

- Illiteracy and sheer ignorance of the outside world are the main causes behind the socio-economic backwardness of the tea tribe community. Most of the people are unaware of the government schemes exclusively devised for their development, and hence unable to avail the benefits that they are entitle to.
- Alcoholism is one of the biggest and most dangerous threats to the development of the tea tribe community. Only 6.91% of the families under study informed that no member consumes liquor. The rest of the families are under the grasp of alcoholism. There are also many such families where the female members are addicted to 'Haria'.

## **SAVING AND ECONOMIC SECURITY**

- Due to lack of education, these families do not have a habit of saving money for future use. Only 42% families have been seen to invest their money in reliable sources like banks or post offices.

## **SELF - DEPENDENCE AND WOMEN EMPOWERMENT**

- Only 48% of families are involved in the self help groups and

only 16% of the women are interested in taking up jobs outside their tea garden i.e. not too many women posses a progressive outlooks. Almost 30% of the women folk of the tea tribe community do not have strong opinion regarding marriage. It is seen that 31% girls were married off early and hence left school, whereas 14% reported to prefer inter caste marriage. This shows that the women of this community are not independent and yet to be empowered.

## **RECOMMENDATIONS**

This study highlight the condition of education of education and related problems, impediment on the implementations of the government schemes and attitude of the targeted groups and as well as enlighten section of the tea garden tribes community.

Following recommendations are put forward for the improvement of education and other welfare aspects of the tea garden women workers:

- Present educational infrastructure provided on tea plantation urgently needs to be improved.
- The government, labour union and garden authority should combine their efforts in coordinated manner to create awareness for education of the girl children in the tea plantation.
- Nursery schools in labour lines are to be established and proper crèche provision should be made for proper care and habit formation of the children. This will increase girls' enrolment in school and also reduce dropout.
- The schemes relating to compulsory education up to the 14 years should be properly implemented in tea garden areas by motivating parents for creating awareness about the importance of education of girls.
- Parent and respondent express that there should be separate schools for girls.
- At least fifty percent of the teachers at the elementary stage should be women to attract more girls to school.
- Provision should be made for imparting training on handicraft,

tailoring knitting, cooking etc. to make unemployed girls self dependent.

- Self help groups are to be strengthened for creating awareness about their rights and upliftment of their economic condition.
- Voluntary agencies should be involve in order to sensitize women and girls towards education and life skill development.

## **SUGGESTIONS FOR FURTHER RESEARCH**

- The study can be undertaken with a greater size and sample in order to establish more valid responses of the objectives.
- Similar study can be undertaken to know the status of all workers of tea gardens in terms of social, economic and health conditions etc.
- Another study can be taken on the welfare schemes taken by the government and their implementation and benefits received by the labour community.
- Alcoholism and its impact on health and family life is a crucial issue and great social evil in the tea garden community. A separate study can be undertaken on this issue.
- 'Witch hunting' and other social evils are still exist among the tea tribe community. So another study can be undertaken on such evil practices.

## **CONCLUSION**

Women workers in the tea plantation of Assam play a important role in tea production, but their significant contribution to the industry has yet failed to get proper recognition. The women workers are highly committed and spent long working hours in the tea gardens, bears numerous hazards at works, but their promotional prospect are blank. On the other hand very little importance is attached to their role as home makers by their families and society in general. The study has made it clear that principal reasons of their backwardness are illiteracy and ignorance. Due to illiteracy they are cling to superstitions, outdated customs, caste taboos and very slow in changing their outlooks. This is the main reason for their inability to make proper use of the benefits provided to them by law. They

are generally found lack of initiative, drive ambitions and has a sense of inferiority. Education has to play an active role in bringing them out of all these stigmas. Therefore, government, tea garden management, all the organizations of tea tribe community and society at large should work hand in hand for the upliftment of women worker and tea tribe community as a whole.

# **INTERFACE BETWEEN ASSAMESE FOLKLORE AND ECONOMIC DEVELOPMENT: A CASE STUDY OF TRADITIONAL OCCUPATIONS WITH SPECIAL REFERENCE TO NAGAON DISTRICT**

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Social factor of economic underdevelopment of Assam is investigated by the economists. But folklorists or anthropologists are to examine economics of underdevelopment of Assam from their own point of view. Dimension of culture-development interface is supposed to be fruitful for investigation into the folk culture of Assam. Impact of globalization, consumerism and media on different aspects of the Assamese folklore is essential to be examined at the present context of global change in socio-cultural sphere.

Economic determinism plays an important role in the development of a society. In Marxist philosophy the main approach is the materialistic interpretation of history where the economic determinism is the central theme. In the formation and change of a society cultural determinism is considered as an influential factor in anthropological study. So, culture is an important subject of study in one branch of anthropology. Many things of a society are decided by culture. There are many aspects in folklore which may retard or boost economic development of a society. That is why some aspects of folklore are to be discarded or some aspects are to be inculcated for economic development. But one thing is true that most of the aspects of a society are time-tested means or strategies for the survival of a group of people in a particular environment. These are

also essential for the sustainable development of a society. It is noteworthy that concept of development itself varies from culture to culture. So taking all these things into consideration the interface between Assamese folklore and economic development is examined.

So far research done in this field is perhaps deficient in the country to understand the problems of our society. There is still scope of systematic and holistic studies on this subject in the region. The case study at the micro level is going to probe and reveal the roots of problems of the region in general Assam in particular in this perspective.

Folklore and economic development interface is an important approach of study which can be fruitfully applied in cultural studies. This dimension is going to give us new perspectives in understanding different aspects of culture of a group. So, this dimension is applied into the field of our study. With the help of this dimension we try to explain the socio-cultural and economic problems of Assam. In folklore there are many taboos and superstitions which are detrimental to the economic development of a society. It is also true that there are some folkloric traditions which are conducive to the economic development of a society. This is a case study of traditional Assamese occupations to understand folk culture-economic development interface. Then a few selected traditional occupations are taken into consideration for delimitation of the field research. Assamese artisan classes automatically fall into the field of study. The area covers the whole state of Assam with particular reference to Nagaon District.

## **AIMS AND OBJECTIVES**

The aims and objectives of the study are enumerated below:

1. To study the relation between economic development or underdevelopment and folk culture change.
2. To gauge out the present day underdevelopment and turmoil of Assam.
3. To help to chalk out a proper developmental model for the state of Assam.

4. To understand the role of traditional knowledge in sustainable development in general.
5. To analyze the relation between traditional knowledge and traditional occupation.
6. To trace out the interface between traditional occupations and sustainable development in particular with the help of a case study.

## **METHODOLOGY**

### **A. Sample:**

Nagaon District is one of the most populous districts of Assam. Total number of inhabited villages of the district are 1, 375 (Census of India 2001). According to the provisional Census Report of 2011 total population of the state of Assam is 3, 11, 69,272 and of Nagaon district 28,26,006.

All total 73 samples are collected from different parts of the district. 88 % population of the district is living in rural area. As the urban population is insignificant in comparison with the rural people I found it judicious to select one typical Assamese village from Kalibabor subdivision for collection of probabilistic samples. This village is basically inhabited by indigenous people. Samples are selected randomly from the voter list of the village for quantitative data collection through schedules. Data are collected from all total 32 persons. Schedules are distributed among these persons. Sample sizes in qualitative research are typically small. The number of site at which the research is conducted is often one or a very limited number.

All total 41 purposive samples are collected. People pursuing different occupations traditional as well as nontraditional and belonging to strata of different communities are interviewed for collection of data. Muslim population, particularly migrants from Bangladesh, is a major socio-economic force in the district. So I selected people from this community for interview. Besides, I have been observing this community for a couple of years.

### **B. Primary Occupations selected for study:**

It is not possible to cover all the traditional occupations

prevalent in the district. Study of all the traditional occupations will not be fruitful as far as the field of study is concerned. Besides, in case study intensive study is made of a few cases. So, taking all these points into consideration the following traditional occupations are selected for research, viz., cultivation, fishing, weaving, pottery, carpentry, masonry, black smithy, and gold smithy.

### C. Procedure:

In completion of the research two kinds of work were involved—deskwork and field work. For the research of this nature, field work is the most important way of data collection. So, the study was a field based one. The field-work was carried out on selected traditional occupations in particular pockets of Nagaon districts where these occupations are still thriving or surviving. I am here concerned with the persons in these occupations not with the products of these occupations.

In order to achieve the objectives stated above as a part of methodology, a field survey of different cultural traditions and persons pursuing different occupations traditional as well as non-traditional of the district was conducted. The survey encompassed two types of data, viz., primary data and secondary data. Primary data was gathered by standard anthropological techniques i.e., structured schedules, key informant personal interview, and participant observation. Case study method and photographic documentation were also used for that purpose. The method of non-participant observation is automatically applied. The secondary data was collected from the official statistics, books, journals, unpublished theses, websites, magazines and newspapers and used with proper citation. Secondary data are used for the explanation of the theoretical part and corroboration of the primary data.

## **QUALITATIVE CASE STUDY**

Most of the research in social science is basically qualitative. Qualitative study is descriptive and description utilized in this type of study is ‘thick’ or ‘rich’. Research in social science particularly in anthropology utilizes case study technique for in depth study of one aspect of the society.

A comprehensive study of a social unit is called a case

study. The social unit may be a person, a group, a social institution, a district or a community. Here the occupations followed by the individuals of the society for their survival stand for the social unit. The social unit here will consist of a few selected occupations of the field i.e. the Nagaon district.

## **MIXED METHODS RESEARCH**

Mixed methods research means combination of quantitative and qualitative research methods. It is important to realize that this kind of research is not intrinsically superior to mono method (quantitative or qualitative) or mono-strategy research. A mixed method research is more or less inevitably superior to research that relies on a single method on the grounds that more and more varied findings are inevitably ‘a good thing’. It, like mono-methods research, must be competently designed and conducted. This research, just like mono-method research, must be appropriate to the research questions or research area with which you are concerned.

This is a multiple-case study and mainly qualitative, partly quantitative. Social scientist P.V. Young emphasizes on the interdependence of statistical and case study techniques.

The study is made in interdisciplinary approach and it encompasses subjects like history, anthropology, culture, folklore, economics, geography, environmental science, etc.

## **DIFFERENT SHADES OF MEANINGS IN OCCUPATIONS**

In the prehistoric period people’s occupation was only hunting, gathering and fishing. Occupation was those activities which help people in survival. Occupation was a kind of survival strategy. With the passage of time number of occupations increased and some of the occupations are in no way involved in the survival of the people. In a simple economy the number of occupation are very few. On the other hand a complex economy requires quite a good number of occupations.

In one society different kind of occupations are created out of necessity of the people. Occupations determine the economic condition of the people. In any society of the present time emphasis is given on the creation of employment opportunity for the people. In present India unemployment problem is the biggest obstacle for

the economic development. In the state of Assam also there are lakhs of people unemployed i.e. out of occupations. For the unemployed youths occupations of their choice are distant dreams.

Traditional occupations have cultural and religious significance. Hindu god Visvakarma is the god of the arts and crafts. Social taboos are also associated with a few occupations. So, people do not select their occupations as they like. Usually a Brahmin does not cultivate the land. People of particular communities only are engaged in fishing.

Some of the occupations are long-lasting. There are a few occupations which remain in vogue for a short period. As for example PCO (Public Call Office) attendant belongs to this kind.

Old occupations die down and new occupations develop due to the socio-economic changes in a society. New occupations also can become traditional as time passes. As time passes traditions develop in these occupations and become traditional occupations.

From one point of view occupations can be divided into two categories viz., traditional and non-traditional. From another point of view the occupations can be divided into rural and urban, high income and low income, respectable or coveted and low esteemed or undesired. This categorization may differ person to person and culture to culture.

With the passage of time so many jobs are coming up, earlier we never thought of.

There are so many unique professions or occupations in India. Among these most of the occupations are traditional.

Occupations are related to livelihood of the people. Of course, there are occupations where monetary involvement is absent. Occupation means the work where people are occupied. Occupations differ culture to culture. Traditional occupations also differ culture to culture. Status of occupations also differs culture to culture or place to place. There are hundreds of occupations followed by people in a society. Soldier, doorkeeper, gatekeeper, receptionist, broker, writer, artist, etc. are only a few to name.

Occupation is a job or profession or a way of spending time. On the other hand a profession is a paid occupation, especially one

that requires advanced education and training, e.g. architecture, law or medicine. All kinds of professions are occupations, but all occupations cannot be called as professions. Occupation means business, trade, etc; that which occupies one's time either permanently or as a hobby, etc.

Occupations create different classes in the society. Occupations help in formation of a stratified society. Earlier occupations were on the basis of division of labour. It is said that Indian caste system also developed on the basis of division of labour. During the course of history some of the occupations became associated with birth. Occupations help in the socio-economic discrimination among the people. Meanings of occupations are many. In occupations are inherent different shades of meaning.

As long as our culture survives our tradition will also continue more or less in a changed form. If tradition continues our traditional occupations along with traditional practices are going to survive. If our traditional occupations go to the hands of the people coming from different cultures (this is the present situation), traditional practices associated with the occupations will certainly change.

All over the world people nowadays give importance to ethnic identity or cultural liberty. It is noteworthy that most of the communities of the world can maintain their liberty through preserving traditional practices. Majority of the traditional practices can be preserved through continuation of traditional occupations. The government should encourage the preservation and continuance of traditional occupations. This will help in a big way in economic development of the people as well as will promote cultural liberty.

## **ASSAMESE FOLKLORE-ECONOMIC DEVELOPMENT INTERFACE**

The study of Indian folk arts and crafts fall under both divisions: Material Culture and Social Folk Customs. Though folklore means oral literature in common parlance, but it is a comprehensive term. Folklore can bring development to the region. Folk culture can be marketed as a product in tourism. So the unique cultural heritage of Assam can be made a factor of economic development.

Many of the aspects of Assamese folklore are already asso-

ciated with the economic development of the state. *Bihu* is the greatest Assamese festival. Main things of *Bihu* are commoditized. *Gamoshsha*, the Assamese towel is in the market in a big way. *Gamoshsha* has acquired new connotations in the greater society. This Assamese towel has great demand in the society. Assamese *ladu-pitha* can also be purchased in the market.

People in the metropolitan cities can celebrate *Bihu* acquiring all the items necessary in *Bihu*. Because of globalization and free market economy Assamese people are spread all over the world for their livelihood. So there is potentiality of Assamese folklore items among these people residing in different parts of the world. These people are always conscious of their identity left at home apart from the newly acquired identity.

Assamese folklore, it seems, may not continue without the support of the market driven economy. Nowadays media is making *Bihu* meaningful and important in the society. *Bihu* cassettes and discs are making waves in the Assamese society. This has acquired an industry form and given employment to a section of the people.

Our folk culture is closely associated with tourism. Tourism developed on marketing the cultural products is termed as the cultural tourism. Cultural tourism can contribute in a significant way to the economic development of our state. Our multiculturalism is not a drawback of our state; it can boost our economy through cultural tourism.

Interestingly 89% of employment in our state is given by the unorganized sector. In this unorganized sector is included our traditional jobs. So emphasis should be given on this sector.

## **CAUSES OF UNDERDEVELOPMENT OF ASSAM'S ECONOMY-FOLKLORISTIC APPROACH INCLUDED**

It can be established with historical facts that some of the root causes of underdevelopment evolved during the colonial period. The drain of wealth theory, and the theme of deindustrialization in late nineteenth century India are put forward for the causes of post independence economic backwardness. The colonial administration brought ruination to the cottage industry of the state.

Assam is called the land of *lahe lahe* for the reason that

Assamese people are lethargic in habit. The people have no work culture among them. There are historical reasons behind it. Nature is very liberal in offering its bounty to the people. During the late medieval period and early British rule people became addicted to *kani* (opium). It is said that bad effect of *kani* remains in the human blood for seven generations. So, perhaps, this is the reason for lack of entrepreneurship among the indigenous Assamese people.

One competition is going on between the indigenous communities and the newly immigrated Muslims regarding who will grab the future of Assam. In this competition the latter will be winner. Because, the population of Muslim immigrants is increasing very rapidly. Secondly, the indigenous people are idle and talkative. On the other hand, the emigrants are hard worker and eager to learn new occupations and techniques. Thirdly, the indigenous society is a degrading society. Addicted to alcohol, ever increasing greed to easy money, attracted to hedonistic life, lack of morality- all these together have been eating into the vital of the society. The society of the immigrants is away from these to a great extent.

Superstitions, beliefs and practices play a significant role in the economic development. Assamese people are more or less superstitious. In their socio-economic life the superstitions certainly exert an influence.

Religious belief and tradition influence the work attitude of the people. Different religions profess different work attitudes. In ancient Assam the caste system did not develop in the form as it was in North India. Very few people belonged to the Baishya caste which was engaged traditionally in the profession of agriculture and trade and commerce. Customs and taboos undoubtedly play a part in the work culture. A few occupations are regarded beneath the dignity by the Assamese people.

The Vaishnavism professed by Srimantasankardeva is also responsible for economic underdevelopment of the state as the philosophy does not inspire the people to aspire for wealth and prosperity. Begging was the general means of livelihood for the Vaisnava monks, even though it was often a humiliating and risky job. The tremendous impact of the Namasarana Dharma of Sankardeva on the Assamese people is unquestionable. Nagaon district is the birth place of the Mahapurusha. So, here the influence of the *dharma* is

very intense.

According to the census of 2001 population density is highest in Assam (340) among the North-eastern States and above national average (325). On the other hand in case of working population (35.78%) Assam is at the lowest position among the North-Eastern States and below the national average (39.10%). Around 64% people of the state are dependent upon the 36% working population. This is not a sign of economic well-being of the state.

The gravest problem of Assam is now the unemployment problem. One of the factors of economic underdevelopment is unemployment. Economic underdevelopment can be mitigated through employment generation. The intensity of the problem can be mitigated through the change of educational pattern of the state. Skill based education and training is more relevant for our society. Our traditional occupations are more important for the economic development of the state, because traditional occupations are labour intensive. This employment generation can be done through establishment of labour intensive cottage industry. This will in turn boost the traditional occupations.

In rural Assam 48% households are self-employed in agriculture. Out of 66% self-employed rural household 18% are employed mostly in traditional occupations excluding agriculture. Excessive numbers of persons are engaged in agriculture. For a vibrant economic development excessive labour force now engaged in agriculture should be diverted to other productive works. This can be done to a great extent by developing labour intensive traditional crafts.

Traditional occupation-holders are not in a respectable position in the Assamese society. Most of the traditional occupations are associated with the manual labour. At present in Assamese society people in the manual jobs are not respected. Work culture is almost absent in the society particularly among the indigenous Assamese society. So people pursuing traditional occupations are discouraged. People under compulsion are in these occupations.

The present erroneous education system has been playing a negative role on the economic development of the state. This is making the people averse to manual labour. In this system of edu-

tion there is no place of dignity of labour. Indigenous Assamese are not interested in agriculture in spite of having sufficient land for cultivation. So they are leasing their land for cash or handing over their land to the *adhiyars*.

The history of the Ahoms is a significant study to understand the economic underdevelopment of the state. During the Ahom period (1228-1826 A.D.) production and trade were under the control of the state. This was the foundation of the self-sufficient economy. This was also the cause of underdevelopment. The middle class was absent during this period and primary production was possible due to slavery. At the end of the Ahom period Assam became a place without a middle class. So it became a virgin field for the brokers and collaborators of the British. Socio-economic structure of the Ahoms in this sense was a chief cause of present underdevelopment.

The policy of the Ahom administration also adversely affected the economic development and entrepreneurship of the Assamese people. The Paik system developed in the Ahom administration discouraged trade initiative and occupations other than agriculture of the subjects.

The agricultural sector along with traditional occupations is going into the hands of the immigrant community of Assam. These people are hard working. They are surviving in spite of so much of hardship only because of their work culture. Their economic condition is slowly but steadily improving. Indigenous Assamese people are shifting to government as well as private jobs, petty trade and to other new service sectors. This happened due to change of economic scenario after the economic reforms in the 90s of the last century. New avenues opened up in the country and to some extent in the state also. In the newly emerging service sector, cultural or folkloric tradition is not a barrier now for the people of the state. Though earlier it was. But in case of manual labour as in agriculture folklore comes in the way. People of the ‘higher classes’ are still not engaged in the manual labour. These people do not till the land as in the days of the past.

The explosive population growth in many Afro-Asian countries has caused the depletion of natural resources which traditionally supported low-income economies, resulting in increased poverty

and environmental degradation. Same is the case with India particularly Assam.

## PRIMARY FINDINGS

There is no gainsaying the fact that majority of the problems of Assam are rooted in the underdevelopment. Largest sections of the people are economically poor. Simple technology is still used in production. The plain agriculture is the mainstay of the economy. Most of the people of Assam are agriculturalists. Fishing and rearing of livestock are other economic activities.

Majority of the people of Nagaon District are settled agriculturalists who keep poultry, pig and cattle for their sustenance. The other important economic activities or traditional occupations of them are fishing, weaving and spinning. Most of the traditions are associated with agriculture. Their traditional economic setup is changing. But they are able to cope up with the change. That change was drastic in the 80s and the 90s of the last century.

Migration of people from the erstwhile East Pakistan and present Bangladesh is a great factor to make a great change not only to the whole economy of the state but also to the economy of the district. A big section of the native people is displaced and deprived from the benefits of their lands.

Primary occupation of the people throughout the history of Assam is cultivation. Other occupations are secondary or part time in nature. Majority of the traditional professions and occupations are nowadays urban centric. That is because of the markets situated in the urban centres.

Traditional occupations can be divided into three categories on the basis of the present existence:

i) A good number of traditional occupations are **prevalent** in Nagaon District. Holders of these occupations are cultivators, potters, blacksmiths, goldsmiths, carpenters, masons, fishermen, weavers, priests, etc.

ii) There are a few occupations which are **on the path of extinction**. Occupation holders of this category are tool sharpener, mortar man, *bez*, *khanikar*, etc.

iii) Occupations of third category are **already extinct** in the district. Bell-metal workers, *teli, sonowal, lekhari, shilakuti*, etc. are in this category.

Problems associated with traditional occupations are:

- i. Industrial products flooding the market
- ii. Rise of prices in raw materials
- iii. Urbanization
- iv. Change of choice/taste
- v. Abandonment of traditional knowledge
- vi. Import of western technology.

River Kolong was the source of many a tradition of the Nagaon district. Revival of the river will help in continuation of those traditions along with traditional occupations. This will in turn bring the sustainable development of the district.

Mass media along with market force is professing consumerism among the people. So the economic traditions of the people is changing day by day and giving way to the consumerist globalized economy. Due to the market forces brought by globalization people pursuing traditional occupations had to change their occupations. In the new scenario people's choices and needs are changing drastically. Industrialization concomitant with globalization is responsible for the impact on the traditional occupations.

Traditional occupations ultimately lead to human welfare. Labour intensive industry will be the solution to the vexed socio-economic problems of the populous state. Traditional occupations are labour intensive as well as conducive to sustainable development. Encouragement and continuance of traditional occupations are necessary for inclusive development of our society. The following explanation of this statement- though sweeping seems to be not far from truth.

Traditional Occupationsà Preservation of Traditional Knowledgeà Preservation of Biodiversityà Sustainable Developmentà Human Welfare.

## A FEW HYPOTHESES FOR FUTURE RESEARCH

The following hypotheses are formulated for future research of the scholars:

- i) In traditional occupations there is little scope for overexploitation of nature;
- ii) Traditional occupations do not help in utter economic disparity in the society;
- iii) They help to create a subsistence economy: *Akaalo Naai Bharaalo Naai* -No acute scarcity no surplus.

For alleviation of poverty and development in rural Assam traditional occupations should be revitalized and encouraged for the real development of the state.

Interface between traditional occupations and sustainable development has now become the relevant topic of research. Many a traditional occupations are already dead. Some of them are dying untimely death. It is the need of the time to revive these occupations for the preservation of traditional knowledge so that sustainable development is possible. Imported technology is not going to save us from the crisis of imbalanced development.

## CONCLUSION

A good number of traditional occupations of Nagaon District are nowadays obsolete. Along with the traditional occupations traditional knowledge also lost into oblivion. People are now aware of the importance of indigenous knowledge in sustainable development. For sustainable development of the state conservation of the biodiversity is sine qua non. In this respect also traditional knowledge plays a remarkable role. It is the time to return to olden times and revive and recover some of our traditions and traditional know-how. Gandhiji's concept of development now seems to be more relevant for sustainable development in a state like Assam.

We cannot shape nature according to our wishes; we have to shape ourselves according to the wishes of nature. Resources of the nature are not unlimited. *Aai Chaai Byay* -cut your coat according to your cloth. Traditional occupations will help in this regard.

Economic development of Assam will help in continuation

of the traditional occupations. The affluent section of the society will buy the cultural symbols produced by the craftsmen as decorative or valued items. Again some wealthy people will pursue traditional crafts as hobbies. So, traditional occupations will survive in some way or other. Most of the things now depend on the economic policy of the government.

The important findings of the research are as follows:

- i) The underdevelopment is basically not rooted in its culture. Culture has not made the people disinterested in wealth, property and prosperity.
- ii) The traditional professions, occupations and artisanship solely cannot give the economic sustenance to the indigenous people. The traditional professions, occupations and artisanship are now in the hands of the non-indigenous people particularly immigrants from Bangladesh.
- iii) The indigenous people have not left their traditional culture abruptly as a result of influence of globalization and mass media.
- iv) Cultivation particularly rice cultivation is not economically viable now. So indigenous people, who possess land are not much interested in cultivation. Among these people cultivation is secondary activity for livelihood.
- v) Assamese people are basically risk averse, so they do not make entrepreneurs. The new generation is more interested in white collar job. Because turnout of cultivation is meager in comparison with that of jobs which have ‘status’ in the society.
- vi) The landholding of the people is very small. Due to population explosion land is split.
- vii) Cultural diversity is one of the factors of economic underdevelopment of Assam because of our inability to harness this force.

Because of the cultural diversity the socio-economic problems become complicated. This results in ethnic clashes and identity crisis. This leads to huge unnecessary expenditure of public fund to tackle these problems.

- viii) Assamese culture cannot sustain without a sound economic base. Assamese culture is the result of mainly agriculture. Be-

cause of stagnancy in agriculture indigenous people of Assam are no more interested in traditional occupations and professions. If a sound economic base is not created developing agriculture and properly utilizing natural resources, Assamese culture cannot sustain. In near future dominant cultures will submerge the Assamese culture leaving only few vestiges of native culture.

- ix) Economic models suitable to the local culture only will be fruitful. Right from the independence of India almost same economic model is followed for development. Specific to the local tradition and culture of the state of Assam is not followed. In the sixties the per capita income of the state was the highest so far and above national average. At present the per capita income of the state is below national average. There are many factors involved in this:
- Increase of population due to migration from other nations particularly from Bangladesh.
  - Stagnant agriculture.
  - Rampant corruption in different levels.
  - Natural calamities specially floods.
  - Insurgency.

The problem lies not among the people but somewhere else. The Assamese people are no more indolent. Majority of the people live in the villages and are agriculture dependent. Due to price rise of pesticides and manures agriculture is not profitable. In many places productivity of the land also decreased to a great extent. So the rural people are no more interested in traditional occupation like agriculture. It is noteworthy that most of the traditional occupations are related to agriculture in one way or other. The society would be benefited if the findings of the research are put into the policies for the development of the society. The policies in turn are implemented by the proper authority in proper way. But unfortunately this is not the case in our society.

The traditional occupations will provide the survival strategy for the people. But these occupations cannot provide all the needs of the people in a consumerist society. The economy of the indigenous Assamese is no more a subsistence economy. The econ-

omy of the tribal communities is different. This is in a transitional stage-in between subsistence economy and market economy. The case of the immigrants and other migrant communities is also different. They are struggling for survival. So for their survival they are trying their hands whatever they found in their way. It is also true that they are skilled in these activites. They are adapted to the life with minimum amenities. The traditional occupations can provide only the minimum facilities. So these communities had no other options other than engaging themselves in traditional practices already left by the indigenous communities. It is also important to note that a section of the poor indigenous people also remained in traditional occupations for the survival.

An economic model which is suitable for Assamese culture should be adopted for Assam where Assamese culture can survive. Natural condition of Assam which is unique, should have an economic model which is also unique. The government should encourage these traditional occupations. These occupations are dependent on indigenous and modern basic technology and they can generate more employment. In the economy of Gandhi also rural development through traditional occupations was emphasized. In a country like India it should be the topmost priority for employment generation thorough rural development. In case of Assam it is more relevant. The traditional occupations can help in maintaining the biodiversity of the state; already a big portion is depleted in the name of ‘development’.

Connotation of development differs from person to person and culture to culture. What type of development we need for the state of Assam? Whether we need the development of western model or a model determined by our culture? Bhutan has its own yardstick for the measurement of development viz., Gross Domestic Happiness. Gandhi’s model of development if judiciously applied will be beneficial for all round development of our society.

# **TRANSLATION IN ASSAMESE POETRY: ITS ACCESSIBLE PAST.**

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Translation practice has confirmed the major insight of the modern critics on the arbitrariness of the linguistic sign. Inspite of being a difficult task the ‘belief’ that there can be a correct translation of a foreign text is still prevalent. The translators that I have dwelt in my thesis Jatindranath Dowerah (1892–1964), Ananda Chandra Agarwalla (1874–1940 ), Durgeswar Sarma (1855-1961), Dimbeswar Neog (1899-1966), Ananda Chandra Baruah (1906-1982) and Parvatiprasad Baruva (1904-1964) were nurtured in the romantic spirit of the west. The nineteenth century is detailed and well documented. Its history is accessible and this accessibility is another factor in my research endeavour. The romantic response looks within and is therefore introspective. Lyrics are interior meditations and while they may pose problem for translations, philosophical and ideational affinities brings diverse creations closer to one another. This helped the translators to internalize the poem and turn it into an Assamese poem for an Assamese reader. With emphasis on the activity of the imagination and the importance of intuition, instincts and feelings the translators were successful in bridging the gulf between the source language and the target language culturesinspite of the distance in space and time.

Although the focus of my work takes cognizance of the cultural moorings but in its periphery the translation discourses are taken into consideration. The thesis attempts to make a comparative analysis of the original and the translated poems of the poets mentioned above, though at times I have resorted to the analytical and

interpretative method. I have selected those poets whose translation works helps to establish an illustrative value as far as my research endeavour is concerned. Analysis of the poems are done by taking individual verses both from the original and the translated poems. The Assamese poems are transliterated with di-critical marks. Different translations of the poets, different emphasis, diverse vocabulary are explored and expostulated.

In the introductory chapter the importance and necessity of translation is emphasized. Krishna Kanta Handiqui emphasized the importance of translation in his essay “Anubadar Katha”. Through this article he refuted what Kaliram Medhi the President of Assam Sahitya Sabha had stated about translation. Translation according to Kaliram Medhi was something to be discarded. Krishna Kanta-Handiqui in his essay gives examples to show how translation helps in reviving literature, citing examples from East European countries like Czechoslovakia, Hungary, Serbia etc.

Translation in Assamese poetry played a significant role in Assamese literature passing through different phases from the pre-Vaishnavite era till the romantic poets. From this perspective the tradition of translation will be focused in the second chapter. Assamese literature has a heritage of translation from the days of Madhava Kandali in the fourteenth century C.E. Even though Madhava Kandali’s translation of Valmiki’s *Ramayana* was not an original composition we can see glimpses of Assamese society of his time. Translation flourished in the Vaishnava age with the motive of propagating religion as discerned in the works of Sankardeva, Madhavdeva and others. The advent of the British in the Indian soil added a new dimension to translation in Assamese poetry. In the pages of *Arunudoi*, a Baptist Mission publication from Sibsagar translation gets a new thrust. The translated works ushered in the beginning of a new literary trend. Assamese translation gets a new impetus in the ‘Jonākī’ age. It heralded the Romantic age in Assamese poetry, followed by the flourishing of lyric poetry in Assamese literature. This was built upon and enhanced in the later magazine cycles like *B-ānhī*, *Aāvhan* and *Rāmdhenu*.

The general trend of translation theory dated from the Greek and the Romantic era to the twentieth century is dwelt on in the third chapter. Christianity demanded the translation of the *Bible* for

evangelical purposes. John Dryden's emphasis on metaphrase, paraphrase marked the beginning of a more systematic and precise definition of translation. Later Friedrich Schleiermacher's respect for the foreign text was to have considerable influence over scholars in modern times. Eugene Nida's concepts of formal and dynamic equivalence draws translation theory away from the stagnant literal versus free debates into the modern era. While replacing source language text by target language text it is obvious that meaning will be modified with degrees of loss and gain. In the Vaishnava age Madhavdev, Bhattacharya, Ram Saraswati and Ananta Kandali were also successful as translators by following this method. The proliferations of Romantic poetry in the nineteenth century asserted the autonomy of translation, its status as a text in its own right. In 1980 Susan Bassnett's book *Translation Studies* emphasized the identity forming power of translation, the ways in which it creates representations of foreign texts that answer to the sensibility and interests of the translating culture. The translation theorists most of the time reiterate on the same content of faithfulness versus beauty, "word-for-word" against "sense-for-sense" and so on. The translation theories are referred to by various terms like fidelity, translatability, equivalence, autonomy etc. The plethora of opinions subsumes under these counters. This leads to the question of the creation of a third language in translation. If it affords more freedom to the translator the notion is welcomed for it reinstates translation not as re-writing but something original while according only a chronological priority to the source. For instance Jatindranath Dowerah has brought out a matchless version of the *Rubaiyat* of Omar Khayyam in Assamese as *Omar Tirtha*. But the *Rubaiyat* was itself adapted from the original Persian. Jatindranath Dowerah translated the poem from his own cultural vantage and intent as Fitzgerald did from his.

In the fourth chapter translation is seen as an intercultural communication. Unlike a poet or an author a translator conveys not his thoughts and feelings but of someone else who could be the product of a different environment and culture .Thoughts and its expressions are always intimately linked to the social and cultural contexts in which they are created. Gideon Toury's emphasis on cultural forces shaping the literary output as expounded in his essay *A Rationale for Descriptive Translation Studies* is relevant and logical. The cultural significance of translation undermine certain norms

to be acquired by the translator because the rhetoric diverge from one culture to another. After the second world war cultural determinants were more visible and even the translator was looked upon as an agent in bridging the gulf between different cultures. The translator is expected to discard the familiar with the unfamiliar, the dissimilar with the similar in source and target cultures. Thus Dimbeswar Neog could accomplish the same kind of response as the readers of the original text in his translation of Wordsworth's *Lucy Grayas Bakulī*. In the following two stanzas we see that stormy night is emphasized by "megheondolāi"(cloud) "town" is replaced by "hāt" and instead of taking a lantern to lead her mother "through the snow" by Lucy , in the translated poem Bakulī has been asked to go ahead "jābideiāgbārdhī tai" to see her mother through the night. It is the reverence for the original context, realities and counters that determines the idiom and manner of the translation where Bakulī is sent ahead as is done in our villages instead of carrying a lantern as Lucy does.

‘*To-night will be a stormy night-  
Yet to the Town must go,  
And take a lantern, Child, to light  
Your Mother thro’ the snow’.*

‘*māribadhuhumuhājī,megheondolāi;  
āi, tai jābihāṭaloi;  
rātiha’baka’rbātmārarbāṭat,  
jābideiāgbārdhī tai!*’

(The sky clouds over and the storm will rage. Night will be on your mother somewhere on the road, you carry on child to your mother).

Parvatiprasad Baruva in his translation of Shelley's *Lines to an Indian Air* and Hafiz's *Feast of Spring* as *Basanta Uchav* addresses the nightingale as *BhīmrājPakhi*in the first poem and *Bulbul* in the second. *Bulbul* is a Persian word while *Bhīmrāj* is rooted in Assamese. By making Hafiz's poem accessible he also emphasizes the composite challenges of Assamese culture. As translators the Assamese poets were successful in interacting with two cultural contexts, the

English and the Assamese. This put the reader at ease and he/she could respond to the text in the same manner in which the original readers responded to them.

In the fifth chapter the fact that the Assamese poets translated those poems that were in synchronization with their own emotions is emphasized. In the process they greatly enriched the Assamese language and brought out the fact that the environmental diversity did not stand in the way in generating the same mental and emotional stirrings in another culture, in another language. For instance the melancholy inherent in Jatindranath Dowerah enabled him to translate Shelley's poems with such grace and vigour that it could be mistaken for an original composition. In his *Āpon Sur* a translation of Shelley's *To A Skylark* the lines "our sweetest songs are those that tell of saddest thought" translated as "hanhākandājagatarrūticirantanbiśādatulāhargān" his response to Shelley may be due to a kind of affinity in their emotional response to the situation. The poems of Shelley which Dowerah translated reflected the melancholy that leave their imprint in the composition of both these poets. The sadness that the Russian poet Turgenev and Jatindranath Dowerah shared as poets encouraged him to translate Turgenev's *Poems in Prose* as *KathāKabitā*. Ananda Chandra Agarwalla's own poetic compositions were burdened with moral bearings and whether it is considered as a quality or a flaw no other Assamese poet could supersede him in this respect. This particular attribute of his poetry must have motivated him to translate H.W. Longfellow's poem *A Psalm of Life* as *Jīvan Sangīt* and he could capture the essence of the original poem ie. the transience of human life in a way which makes it difficult to recognize it as a translated poem. The romantic poets were keenly conscious of the chasm between the transient, commonsense world of appearances and the eternal infinite realm of ideal truth and beauty, which can be perceived by means of the imagination. The new conception of the imagination as a creative, transforming force, central to the artistic process encouraged the development of the lyric. Appreciating the creativity of an artist Durgeswar Sarma in a precise way in his *Gīt Aru Chabi* was successful in transcreating the whole idea of the original poem by Browning's *Fra Lippo Lippi* that how trivial things of life which might escape the notice of an ordinary person can be transformed into something artistic. Ananda Chandra Baruah's transla-

tion of A.C. Swinburne's poem *A Match* as *Mil* the projection of the same simplicity of diction, lyricism of feeling, the same contrast of leaf and flower as apparent in the original poem makes it difficult to differentiate from the original poem. *If love were what the rose is/ And I were like the leaf* in Swinburne's poem is translated by Ananda Chandra Baruah as *golāpphular dare huvāha'leprem/moie tiseujīyāpāt* (If love was like the rose, I am a green leaf). Parvatiprasad Baruva's adherence to the romantic mode of the English romantic poets and their alienation from the madding crowd are informed at the same time by a social awareness. With the ease of translation that he was capable of and the subjective affinities with some of his own poems his translated poems are from Shelley, Byron and Hafiz.

The enrichment of the Assamese language by the translated works of the above mentioned poets was the natural outcome of their grounding in their own language and culture. They were greatly influenced by the Western Romantic Movement. Although they were translating from a non cognate language, human nature being the same, subjective and individualistic inspiration cannot be exclusive and the modern Assamese poets discussed above have proved the point. The attempt to evaluate these poets within the perspectives of the recent advances in translation theories brings out the difficulties these poets faced owing to the cultural, social and lingual differences. This work to some extent brought out the greatness of these poets who could overcome these constraints. The primary motive of the poets in translating poetical works into Assamese language, seems to have been not to enrich the Assamese language, though it was a natural outcome, nor even to transplant the cultural and religious content, which naturally followed but to bring to the people the emotions and inspirations that they themselves felt. Translation works can come to its own only when constraints, to a great extent, are overcome. The poets who are dwelt with in my work have proved the adaptability and the richness of the Assamese language. They were gifted with a more propitious talent which enabled them to keep the spirit without moving away from the letter.

# **DETERMINANTS AND EFFECTIVENESS OF GOVERNMENT EXPENDITURE IN ASSAM**

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## **INTRODUCTION**

Government intervention in the form of public expenditure produces profound impact on the economic life of a country. Government intervention is necessary in order to realize the objectives of growth and poverty reduction, provision of physical and social infrastructure, equitable distribution of income and protection of environment. Governments - central, state and local- around the world incur substantial amount to realize these objectives. Almost all countries experienced tremendous increase in their public expenditure, particularly after World War-II. This trend continued till late 1980s'. However, in the late 20<sup>th</sup> century, there had been some erosion of government role, consequent upon strengthening of market principle and private sector. Still, government remains dominant player in the economic affairs of a country. During this time also many countries faced fiscal constraint of varying degrees. The result was that they found it difficult to meet their expenditure commitment. Earlier, the focus of such public expenditure programs was on the quantum of inputs used in terms of monetary and material resources. Any shortfall in the stated objectives was sought to be corrected by allocating more resources. Little attention was paid to assessing the impact of public expenditure program on the economy. As the policy of increasing public expenditure became unsustainable, and since compressing public expenditure had the danger of slowing down the economy, public authorities looked for other ways to find a solution. Many countries took steps to reform their budget procedure and service delivery mechanism and move from ‘input-

output' focused budget to 'outcome' focused budget. Enhancing efficiency and effectiveness of public expenditure was the main guiding principle of such reform measures. This shift in the policy framework was expected to enable countries to achieve the same outcomes at reduced level of spending or improved outcomes from the same level of spending. Since financial resources at the hands of the governments are limited, it is very important that these resources are spent judiciously and efficiently. Therefore, public expenditure should be judged in terms of its effectiveness in realizing the stated objectives. Following this line of thinking, from around mid-1990s, a number of studies were made in order to analyze public expenditure in terms of their efficiency and effectiveness. Most of these studies used cross country data set to evaluate public expenditure programs. There were a few attempts that focused on individual country, state or region. In India, to our knowledge, no attempt has been made to investigate the effectiveness of public expenditure at the state level. On the other hand, many scholars have recommended carrying such investigation at micro level. The present study is an attempt to investigate the effectiveness of government expenditure for the state of Assam.

Assam occupies a strategic position in the north-eastern region of India. It comprises 2.41 percent of the total area and 2.65 percent of the total population of the country. 87.28 percent of Assam's population live in rural area and almost 70 percent of the population depend on agriculture and allied activities. It is rich in natural resources and is a biodiversity hot spot. In spite of its enormous potentialities, the state has been lagging behind as far as economic development is concerned and it is regarded as one of the economically backward regions of the country. Assam fared poorly among the Indian states in terms of per capita income, human development index and other key economic indicators. Major obstacles being faced by the state are devastating flood, insurgency and transport bottleneck. It has a low economic and industrial base. Although agriculture is the main stay of majority of the population, its development is hampered by a number of factors such as (a) poor irrigation facilities (b) difficulty in marketing agricultural produce (c) absence of multiple cropping and, (d) inability on the part of the farmer to use modern technology. Law and order problem and inadequate infrastructural facilities have made Assam unattractive for private in-

vestment, both domestic and foreign. In the post reform period, bulk of the private investment flowed to more advanced states bypassing the poorer states like Assam. Against this backdrop, the responsibility of uplifting the economy and putting it on a high growth trajectory lies on the state government. Assam needs substantial public investment in basic infrastructure, social sector, agriculture and for employment generation. But the state government's ability to make sufficient investment in these areas is limited by poor resource base of the state. Moreover, the Fiscal Responsibility and Budget Management Act limits state government's maneuverability in respect of both revenue and expenditure as it has to adhere to specific debt and deficit targets prescribed in the act in a time bound manner. The state depends heavily on central funds to discharge its expenditure responsibility. Central transfer constitutes a major portion of the state's total revenue. Heavy dependence on central transfer creates problems at times due to volatility of such transfer. In view of the resource constraint faced by the state, expenditure reform has to be a key element in the overall strategy for development. Past experience shows that whatever resources are available have not been spent judiciously and effectively. The size and composition of budgetary expenditure reveal that it is heavily loaded in favor of unproductive expenditure to the neglect of productive expenditure. Even in the latter case, public spending has not produced the desired result. Leakage of fund meant for programme, corruption in public life, and an inefficient and unresponsive delivery system have contributed to poor development outcome. In all these years, the emphasis has been on the amount of resources put into a particular programme and not on what results have been achieved out of such exercise. There is a need to re-orient the public expenditure management procedure so that maximum results can be achieved out of the available public resources. While size of public expenditure is important, more emphasis is needed to be laid on enhancing the efficiency and effectiveness of such spending. Besides ensuring fiscal discipline, such an effort will entail the same development outcomes at reduced level of spending, thus, releasing resources for further investment. Thus, there is a strong case for evaluating public expenditure in terms of its effectiveness in realizing various development outcomes in the state of Assam. Such a study will help in identifying the deficiencies in the system and measures needed to improve it.

In evaluating effectiveness of government expenditure in Assam, not all categories of government expenditure are taken up for discussion. In selecting expenditure categories and their respective outcome variables, we have taken cue from studies made at national and international level. Moreover, only those variables are selected, for which reliable and adequate data are readily available.

Our study finds evidence of a positive relationship between government expenditure and state income, supporting Wagener's hypotheses. The impact of government expenditure on gross domestic product is found to be positive and significant. However, the value of the coefficient is small. Capital expenditure is negatively associated with gross domestic product. Most of the expenditure categories are ineffective in realizing the objectives they are intended to achieve. The significant determinants of government expenditures in Assam are- state's own tax revenue, share in central taxes, state's own non-tax revenue, grants from centre, net devolution from centre and fiscal deficit.

## **OBJECTIVES OF THE STUDY**

The proposed research work is an attempt to make an empirical analysis of the trends, the determinants and the effectiveness of public expenditure in Assam during the previous thirty years starting from 1980-81. For this purpose, the study will look at the allocation of funds to different heads according to functional classification of budgets of relevant years and link them to various outcome indicators. This will give an idea about the extent to which public spending is effective in realizing the stated outcomes. For each functional head, a number of outcome indicators are available. Selection of good and appropriate indicators is important for getting best results in this type of analysis. Two criteria should govern the choice of indicators. Firstly, indicators used by other authors should be selected in order to facilitate comparison. Secondly, those indicators should be selected for which most up-to-date data are available. Keeping all these things in mind, the different sectoral outcome indicators that the study will make use of are-

- Education:- Gross enrolment ratio in primary and secondary education, literacy rate
- Health: - Infant mortality rate, life expectancy at birth

- Agriculture: - Growth rate of Agri-GSDP
- Irrigation: - Annual irrigation potential created
- Road: - Road length per sq km area
- Power: - Per capita availability of power
- Rural development: - Rural poverty ratio

The specific objectives of the study are-

1. to analyze the trend, pattern and growth of public expenditure in Assam.
2. to analyze the impact of level and compositions of public expenditure on Gross State Domestic Product (GSDP).
3. to analyze the impact of sectoral expenditure on various sectoral outcomes.
4. to find out the factors that determine the level and size of public expenditure.
5. to find out, in the light of our study, the discrepancies that might exist in the public expenditure programs and suggest measures to correct such discrepancies.

## **HYPOTHESES OF THE STUDY**

The hypotheses to be tested in this study are-

1. The impact of level and composition of public expenditure on Gross State Domestic Product (GSDP) is positive and significant.
2. Public expenditure is effective in mitigating the incidence of poverty.
3. Expenditure on Education significantly affects education outcomes viz. literacy rate and gross enrolment ratio.
4. Expenditure on Health significantly affects health outcomes viz. infant mortality rate and life expectancy at birth.
5. Expenditure on Agriculture positively and significantly affects agricultural output.
6. Expenditure on Irrigation is effective in creating irrigation potential in the state.
7. Expenditure on Road is effective in creating road length per sq km area.

8. Expenditure on Power significantly affects power availability.

## **CONCLUSION**

Using the data of thirty years from 1980-81 to 2009-10, we take some selected heads of expenditure according to functional classification of budget, and link them to various outcome variables relevant to each head of expenditure. Then, we examine whether expenditure variables significantly explain variations in outcome variables.

Analyzing the trends and patterns of expenditures of the government of Assam, we observed that all the heads of expenditures shows a rising trend. Compression in expenditures can be seen in the post reform period. This is the result of reform measures being undertaken both at the center and at the state. However, surge in expenditure can be observed in the later period of our analysis, particularly from the year 2004-05.

## **MAIN FINDINGS OF THE STUDY**

1. Gross Domestic product is significantly affected by total government expenditure. However, the value of the coefficient is low. One important finding is that, in case of Assam, effect of capital expenditure on Gross Domestic Product is negative. Though both plan and non-plan expenditures are significant, non-plan expenditure exerts greater influence on gross domestic product. Other expenditure variables that significantly and positively affect gross domestic product are- social sector expenditure, health expenditure and road and communication expenditure.
2. Our study fails to find any significant relationship between government expenditure and poverty reduction.
3. In order to find out effectiveness of expenditure on education, we take literacy rate and gross enrolment ratio as our outcome variables. Our study finds that government educational expenditures are significant only in case of literacy rate.
4. In the health sector, our findings do not reveal any significant relationship between health expenditure and the two outcome variables, namely, life expectancy at birth and infant mortality rate.

5. Among the Economic Sector expenditures, the expenditure variables that we consider for analysis are-agriculture, rural development, irrigation, power and road. Our analysis reveals that among the five expenditure variables taken up for discussion, only Irrigation and Power expenditures are significant, but small in magnitude. Other expenditure variables are insignificant and they have failed to produce any noticeable impact on their respective outcome variables.
6. We have considered altogether thirteen variables that, we believe, would explain the determination of government expenditure in Assam. Among these variables, the significant determinants of total expenditure are- state's own tax revenue, share in central taxes, state's own- non tax revenue, grants from center, net devolution from center and fiscal deficit. Our results are not in conformity with the results of most other studies because the variables like per capita income, density of population, urbanization and rate of inflation are found to be insignificant.
7. As regard to the effectiveness of government expenditures, no marked difference can be observed between pre-reform period and the post reform period.

Overall, it can safely be said on the basis of our study that government expenditure in Assam has not been effective in realizing various objectives. One possible reason is that government expenditure in the early years of our study period was too low to produce any noticeable impact on the outcome. There is every reason to believe that public money is not spent properly in Assam. Leakage and misappropriation of fund meant for development purpose is common. The service delivery mechanism is inefficient and unresponsive to people's aspirations. There is a tendency of spending a major portion of plan allocation at the fag end of the financial year. All these factors have contributed to the poor performance of government sector.

All these need to be changed if Assam wants to make progress. In the changed scenario, fund is not a constraint as it was earlier used to be. What is needed is an effective delivery system so that benefits from public expenditure reach those people for whom funds are meant. Effective monitoring of public expenditure program will also help in improving results.

# A STUDY OF THE FOLKLORE OF THE KARBIS: AN AESTHETIC APPRAISAL

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This research fulfills the twin purposes of presenting the ethnographic material of Karbi folklore and examining the material with the category of aesthetics. The ethnographic material is born out of the data collected in the field following Richard Dorson's classification of the fields of folklore studies into oral folklore, social folk custom, material culture and folk art. In terms of the last two fields, namely, material culture and folk art I have chosen food and foodways as part of material culture for a specific investigation whereas folk art study is restricted to an inquiry into performative acts in Karbi folklore.

As far as the category of the aesthetic is concerned, in the dissertation I argue that Kantian aesthetics with its four features of *disinterestedness, universality, necessity* and *purposiveness without being purposive* is an ethnocentric construct of epistemology which runs counter to the essentially ecology-generated mythic consciousness that marks Karbi folklore praxis when it comes to the applicability of the former to the cultural texts of the latter in aesthetic evaluation. Kant's theory on non-functional, autonomous nature of art, along with his notions of genius gave rise in Western Europe to the institutionalization of literature, literary history and literary criticism with subsequent development of the institutionalization of art, art history and art criticism. The emergence of the artist/writer as creator, and the resultant growth of an elite class of specialist audience/reader were configured by the rise of capitalism and formation of class in the complex societies of Europe. Contrasted to this, I em-

phasize that the folk artist and the folk singer or storyteller as crafts-person and voice of the community is shorn of aspiration, individuation and personality projection which serves as a critical counterpoint to the ethnocentric artist as the genius, thereby making the category of the aesthetic problematic and non-negotiable when it comes to applying it to the evaluation of folklore.

In the explication of the Karbi folklore material for aesthetic appraisal, I argue that the folk sense of aesthetics is culturally bound. I contend that a centrally defining category of the aesthetic in relating Karbi folklore to the idea of the sublime and the beautiful has to take into account the folk imaginary's rootedness in natural space. My central thesis is that an abiding and overriding sense of place informs the Karbi sense of aesthetics. With evidence derived from the theoretical framework of existing research in the areas of folkloristics, cultural geography and phenomenological anthropology and their application to the folklore material that I present in the dissertation, I seek to establish that the social, the spatial and the spiritual realities coalesce in the Karbi mythic consciousness to generate a worldview that spawns numerous forms of expressive and verbal behavior which are rooted in socially constructed folk perceptions.

Oral traditions, food and foodways as part of material culture, social folk customs, and performative acts as part of folk art – all the fields of Karbi folklore generate ritually intervened mythic structures of meaning which allow the Karbi folk imagination to negotiate everyday reality. Nature worship, ancestral worship, rites de passage, and a hierarchically structured sense of social or communal reality which relates effortlessly to cosmogony as well as to a mythical past which in turn determine man's status in the universe are some of the key features of the cultural praxis of Karbi folklore. Aesthetics in my argument is not an extrinsic pursuit of what is edifying and elevating in human actions that can be separated and internalized as life-enhancing sublime experiences exclusive of life's quotidian engagements. Aesthetics for a primarily oral society like the Karbiis part of a larger design where the felt experiences of life are inseparable from the function of charting the course of day-to-day life lived within a hierarchically constructed social reality.

In later sections of the dissertation I also record my appreciation of the collapse of the mythic consciousness and the gradual rise of what Michel Foucault calls ‘epistemic interference’ paving the way for the emergence of textualization giving rise to a literate culture and seeking to threaten the traditional aspects of Karbi folk life, and at the same time, generating new forms of folk behavior in the oral-literal continuum. The clash between the collapsed form of the mythic consciousness and the emergent epistemic form of the rationalist consciousness, or at least a semblance of that consciousness, triggers off a massive renegotiation of the sense of identity. This renewed sense of identity facilitates the coming into being of a re-enactment of folk cultural forms which seek to address issues related to power, identity and performance critically affecting cultural production rendering Karbi folklore into one of the most potent areas of future research.

# A STUDY OF THE FOLKLORE OF THE TIWAS (LALUNGS) AS A SOURCE OF ORAL HISTORY

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The term ‘oral history’ when applied to a voiceless society like the Tiwas, is bound to raise a number of issues. Firstly, all throughout medieval, pre-colonial and colonial times, historiography in Assam has neglected the Tiwas. Secondly, unlike the Ahoms who were the subjugators of the Tiwas to a large extent, the Tiwas were a non-literate culture. Thirdly, the Ahoms had an extremely rich tradition of writing history by designated historians called the ‘buranji’s. In spite of the fact that these ‘buranji’s offer narratives of the kings and their reigns, there is a chronological written record of a culture that was rich in statecraft, agricultural innovation and martial skills. When modern history was being written in the late 18<sup>th</sup>, 19<sup>th</sup> and the early 20<sup>th</sup> century by the British historians, non-literate societies like Tiwas were naturally left out. As a result, the Tiwas have no recorded history.

The Tiwas (Lalungs) are regarded as a major tribe of Assam, and their population in Assam is 1,70, 622, according to the census report of Govt. of India, 2001. They reside in Nagaon and Morigaon districts primarily, and concentration of Tiwas (Lalungs) living in community form are found in the Dimoria area of Kamrup Metro district, in Titabor of Jorhat district and in Dhemaji of Dhemaji district. There is a large population of Lalungs living in the hills of Hamren sub-division of the Karbi-Anglong district. Apart from Assam, there is Lalung population in the Ribhoi district of Meghalaya who are, along with the Lalungs of Hamren generally known as ‘Hill Lalung’. According to the eminent cultural historian

B K Baruah, the Lalungs belong to the Bodo group of tribes of Indo-Chinese family. The Tiwas (Lalungs), henceforth referred to as ‘Tiwas’, are the speakers of the Bodo group of languages belonging to the Tibeto- Burmese family.

The role of oral history in folklore has to be underlined in the perspective of folklore research. Folklore studies as a discipline underlines the need to understand ordinary people’s traditions customs and behavior. It can be an important source of alternative knowledge. For non-literate cultures, folklore is the most important source of history. Professor B N Datta, who is an eminent folklorist of the north-east, is of the view that folklore has a deep association with history, and he points out two schools of folklore studies which can justify the role of oral history in folkloristics.

Keeping in view these imperatives from the theoretical orientations, the research was conducted. Elaborate field trips were organized, meetings with a large number of tradition-bearers as informants were arranged, and prolonged interviews were conducted and recorded on a pool data that was structured mainly into four areas of enquiry vis-à-vis the Tiwas: history of the origin and migration, history and tradition of the social administrative organization, history of toponymy or place name and legendary heroes and history of various fairs and festivals. The design of the research was so intended that the four areas of enquiry mentioned above would go into the four main chapters of the Thesis. It must be added that in the course of the field-study and the interviews, many divergent views on all the four areas emerged.

As far as the myths of the origin of the Tiwas are concerned, we can have very sketchy narratives from the experience of our field study. However, the Tiwa informants came forward with quite a few versions of the origin presented below is a case of point.

The most commonly held myth is that the Tiwas were born out of water and they were very much unintelligent (naive) so that left only a piece of ‘Warrandal’ or ‘Bahar Lekechi’ (a thin bamboo twig) in the areas as boundary marker for their land in which they came into being, which is very much temporary in nature and it can get decomposed in a short span of time. The Karbis were born much after the Tiwas in the same area. They left ‘Modar’ (coral tree),

‘Simalu’ (silk cotton tree) and stone as a sign of their place of possession. Since these objects were stronger in terms of endurance, the Karbis could lay claim to the place as their place of origin. Because of that the Tiwas had to abandon their original place of birth which was then occupied by the Karbis.

The second area of enquiry in the Thesis pertains to social administration system of the Tiwas. A number of oral sources could be collected in order to construct a narrative which offers a well-established social administrative system which functioned as a social, judicial and cultural entity for the Tiwas. A Tiwa household is a part of larger unit called the ‘Kul’/‘Kur’(clan) which formed an even larger social unit called the ‘Khel’ or fraternity. Above the ‘Khel’ is the ‘Bara Raji’ or ‘Bara Khel’ (also called ‘Bara Bisaya’ or ‘Baro Bangia’). The largest social unit can be regarded as a rudimentary form of a state council. The state council was presided over by the king, known as ‘Deoraja’. There were as many as four major ‘Deoraja’s reigning respective principalities. There were other minor principalities called ‘Sato Raja’ and ‘Pancho Raja’. The king was also regarded as the custodian of all the shrines, ‘Puja’s festivals and fairs. The king was at the top of the hierarchy whose branches went down from the officers like the Borbaruah to Bormaji to Pator or Senapati to the ordinary personal attendant of the king called the Panibhari or Khanamukhi. As far as the cultural aspect of social administration system was concerned, the role of the ‘Samadi’ or youth dormitory has to be emphasized. The ‘Samadi’ had a well-structured hierarchy and allotment of function.

Apart from these social functions, the administrative system was seen exercising its full control over the society once an occasion with regard to the rites of the passage is concerned. The community members offered full allegiance to the power and authority of the social system in order to perform the rites.

Sense of rootedness to a place was a central hallmark of a traditional culture. If the culture happened to be a tribal one, then the place assumed significant role in shaping up the worldview of the community occupying the place. One of the important ways in which humans established their relationship with a place was in the way they named the place. Thus, place names assumed great importance in understanding the history, culture, custom and behavior.

Place names and the oral history surrounding them in that sense can become a formidable area of enquiry. The Tiwa place names undertaken not only throw light on the way the Tiwas as a community behave, but also add to the narratives of migration, settlement and engagement with reality.

In the engagement with everyday life, a society faces certain challenges which may not be met with ordinary responses, as a result, heroes are born, their praise sung over periods of time and they became celebrated through songs and legends. An attempt has been made to look into Tiwa oral sources which contain narratives of legendary heroes. These heroes are as follows: Jongal Balahu/Jongal Khitri, Mohan Fador, Dhanbor, Hebera Lalung, Bhibikumar and so on. These legendary heroes captured the folk imagination of the Tiwas and their exploits are recounted in legends and lore which form part of their oral narratives.

Fairs and festivals mark the primordial urge of a community's response to changing season in nature. These fairs and festivals bring the community together in expressing its joy and celebration through offerings to gods, community feast and a common sharing of traditions. Some of the important Tiwa fairs and festivals are as follows:

‘Sagara’ or ‘Sagara Misawa’ is the main festival of the Tiwas of Kandali (Thengkuchigaon) and Amsuwai and in some other places in the hill. There are some essential items to collect and prepare for the celebration of ‘Sagara’. The festival starts from the house of the ‘Loro’ (Chief priest). This is a spring festival and it is celebrated in the time of “Modar Phular Mahat” (in the month of blooming of coral tree, which is generally March-April). There is no role for the women in the festival except providing food items including rice beer in the houses they visit to perform the dance.

‘Lakhumi Puja’ is performed by the families individually before the tilling of land for showing seeds and at the end of harvest. It is celebrated in the Dimoria area in which they chant ‘mantra’ for Lord Mahadeva and Goddess Parvati and then tilling is allowed. The same Puja is observed at the interval of 5 years by the Hill Lalungs of Amsuwai. But for celebration, they come down to the plains of Gobha near to their king’s residence. They call this festival as ‘Yangli Phuja’.

‘Bhetikoha Utsav’: Earlier the Khola king had to pay tribute to the Gobha king. To make the payment they had to cross over the Nellie kingdom. Once when they went to Gobha to pay the tribute, their kinds were snatched away by the subjects of Nellie king on their way to Gobha. Nellie was much larger kingdom than Khola and was more powerful too. The subjects of Khola came back and informed the matter to their king. The people then displayed the scene of robbery in a dancing action which later on became a regular function in the day of ‘Raja Bihu’ every year in Khola kingdom. This dance and festival is called ‘Bhetikoha Utsav’; means snatching of tribute.

The fascinating thing about the Tiwa history is that all four areas which had been undertaken in the study merged into one cultural entity in the collective imagination of the Tiwa people. It is true that there are gaps and breaches in the narrative of the Tiwa people for lack of either historical record or mnemonic structure. However, it is hoped that this study will fill in some of these gaps in the oral history of the Tiwas and prove to be an important addition to the academic scholarship of the community.

# **ETHNOBOTANICAL STUDIES ON THE NEPALI COMMUNITY OF NAGAON AND SONITPUR DISTRICT (ASSAM)**

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The present ethnobotanical research work may be systematically summarized as follows:

- a) Ethnobotany not only deals with the plants used for medicinal purposes but also includes study of fibers, dyes, food, taboos, origin etc. The present ethnobotanical study was undertaken to explore the traditional knowledge regarding the plants of the Nepali community of Nagaon and Sonitpur district, Assam.
- b) To have a clear understanding of the present status of the ethno-medico-botanical investigation, considerable literature related to the field have been reviewed. The literature consulted was not only of the study area but also of the country and to some extent from the countries abroad.
- c) The information regarding the geographical features, location of the study area, geology, soil types, vegetation, climatic conditions and meteorological records such as maximum and minimum temperature, which also have great impact on the floristic composition of the study area, and have correlation with the traditional herbal medicinal use by the Nepali community.
- d) Names of the Nepali inhabiting villages in the study area were collected with the help of Gorkha Development Council of Ganeshguri, Guwahati.
- e) Data on the soil of the study area was collected from the selected places of (Nagaon and Sonitpur district, Assam). Soil type of Nagaon was collected from the District agricultural development

strategy of Nagaon district (2004) prepared by Agriculture Technology Management Agency (ATMA), Nagaon. Information on the soil types of Sonitpur district was collected from NBSS & LUP, Jorhat Centre in Sonitpur district (*Source:* NBSS Publ. 101).

- f) Brief account of the origin, history, socio-cultural aspects such as family structure, village system, clans, customs, marriage systems, dress, ornaments, festivals, food, beverages etc of the Nepali community of Nagaon and Sonitpur district, Assam have been collected and illustrated.
- g) Intensive field work covering all the seasons were carried out during the last  $3^{1/2}$  years following the methodologies as suggested by Jones(1941), Schultes (1960, 1962), Jain (1964a, 1967a, 1986, 1987, 1989) and Ford (1978). The work carried out was to collect and record the data on the ethnobotanically important plant species related to the community under study. Medicine-men and women and other people of the community who have indigenous knowledge of the use of plants were interviewed and information regarding the uses of plants which have medicinal values or other uses was collected. Information regarding the preparation, use and mode of administration of the plants, extracts etc. for the treatment of different types of diseases and ailments of both human and animal were collected. Repeated quarries for authenticity of the information have also been made.
- h) During the collection of plant specimens, serial numbers and field data including vernacular name, the spot of collection, flowering and fruiting status etc. were recorded. Collected plant specimens were preserved as herbarium following the methodologies as suggested by Jain and Rao (1977). Necessary photographic documentation has also been done during the field itself.
- i) To study the critical morphological characters of the collected indigenous plant specimens were processed for identification. Plants were identified with the help Dr. P.Gogoi, Emeritus scientist, NEDFi and also by consulting available literature. The identifications were further confirmed by consulting the Kanjilal herbarium (BSI, Eastern circle) of Shillong, Meghalaya.

- j) Collected plant specimens were enumerated along with the correct nomenclature, citation of the references of the original publication, name of family and vernacular names. These were followed by the brief description of the plants, phenological data, date of collection, collection number, distribution, utilization pattern of the plants and lastly established reports of their uses as medicine, if available has also been recorded.
- k) For utilization reports of each species, a number of published account like Kritikar and Basu (1935); Nadkarni (1954); Chopra *et al.* (1956, 1969); Nayar *et al.* (1989); Drury (1991); Asolkareta *l.* (1992); Pal and Jain (1998); Rawat and Chowdhury (1998); DuttaChoudhury (1999); Bhattacharjee (2001); Sharma *et al.* (2003); Sharma (2003); Dutta&Dutta (2003); Das *et al.* (2006); Das *et al.* (2007); Das *et al.* (2008); Das *et al.* (2010); Khatoon, R *et al.* (2012); Khatoon, R *et al.* (2013); Pinokiyo, A *et al.* (2014); KowserAlamLaskaret *al.* (2015) were consulted.
- l) A total of 240 plant species under 189 genera belonging to 88 families have been collected and identified and reported which comprises of Pteridophytes 4 species and Angiosperms 236 species. From the study it was found that about 77% of the plant species are used as ethno-medicine and 40% of plant species are used as ethno-veterinary medicine.
- m) The collected plants were tabulated according to their pattern of use and it was observed that the maximum numbers of the collected plants are used in medicinal purposes for curing both human and animal ailments. Among the medicinal use of the plants the maximum numbers of plants are used to cure different types of stomach troubles which are followed by the dermatological disorders, jaundice, gynaecological problems etc. For cattle diseases the maximum numbers of plants are used for treating stomach troubles followed by endoparasites, foot and mouth disease, urinary trouble etc.
- n) Phytochemical analysis of the three important plant species (i.e. *Litseaglutinosa*, *Abrusprecatorius* and *Benincasahispida*) was carried with the help of the procedure as suggested by Harborne (1998), Sofowara (1993), Brindha *et al.* (1977) and Trease and Evans (1998) and the results suggest that these plant parts (i.e. bark and seed) have potential for the development of new drugs

but they require further in-depth study.

- o) Phytochemical screening through Liquid Chromatography Mass Spectrometry (LC-MS) technique was done for aqueous extracts of some of the important plants (i.e. *Litseaglutinosa*, *Abrusprecatorius* and *Benincasahispida*, but only the aqueous seed extract of *Benincasahispida* have shown the presence of one compound. The compound isolated through LC-MS has been found to match with that of 6-methoxy-2-oxo-1,2-dihydro-4-quinolinecarboxylic acid (NIST Library). Many compounds of this class have been reported to exhibit neuro-active properties in nature. A close relative of this compound, 6-chloro-2-hydroxyquinoline-4-carboxycyclic acid has been reported for the treatment of anxiety & sleep disorders by Ten and John of UP John Co, USA.

The structure of the identified compound is given in the Fig. 11.

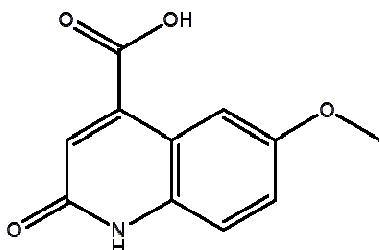


Fig. 11: 6-methoxy-2-oxo-1,2-dihydro-4-quinolinecarboxylic acid  
CAS Registry No.: 32431-29-1

- p) Microbial screening of the three plant species (i.e. *Litseaglutinosa* (Lour.) C.B. Rob., *Abrusprecatorius* L. and *Benincasahispida* (Thunb.) Cogn.) was carried out against some animal pathogens i.e. *E. coli*, *Salmonella* sp. and *Staphylococcus aureus*, using the methodology suggested by Vincent and Vincent (1944). Results show that some of the plant extracts inhibited the growth of bacteria under study and thus confirmed the authenticity of the reports given by the Nepali medicine men.
- q) Strategies of conservation of medicinal plants vis-à-vis indigenous knowledge have also been discussed.

# **SOCIAL DEMOGRAPHY OF COLONIAL ASSAM**

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Social Demography of Colonial Assam is a historical perspective to understanding the impact of demography on society and economy of colonial Assam. It has been carried out within the conceptual framework that demographic structures have been the major contributing factor towards ‘social formation, economic organisation and in the functioning of government’. The present work has tried to draw attention to historical social demography in the making of Assam’s varied socio-economic and political structure from the mid nineteenth century to the fourth decade of the twentieth century. The study area of the present research concentrated on the *social demography* of Assam and the Brahmaputra valley in particular for the period when it was held under colonial rule. The geographic coverage of the study is therefore, selective and is limited to the six districts of the Brahmaputra valley namely (arranging from west to east) Goalpara, Kamrup, Nowgong, Darrang, Sibsagar, and Lakhimpur keeping in view the availability of data, nature problem of the problem etc and covering the period between 1826 to 1941, the former date marking an end of the six hundred year long local government under the *Ahom* rulers and beginning of a new era under the

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<sup>1</sup>The present spelling is Nagaon but it was spelt as Nowgong in the colonial records. Therefore, this study being carried out in historical perspective uses the spelling that was used in the colonial records.

<sup>2</sup>The present spelling is Sivasagar but it was spelt as Sibsagar during the colonial period, hence the use in this study.

political dominance of a foreign mercantile company (which latter assumed control under British Crown) and the latter date marked the last census year during colonial rule.

In this study on *Social Demography of Colonial Assam* the first chapter, *Introduction* presented the framework of the study along with the historical and demographic background of the researched area. The history of Assam was distinguished by stupendous population composition initially as a result of colonial administrative designs, their arbitrary redrawing of provincial boundaries which inevitably left Assam with 'strange bed-fellows' and a margin of 'slightest of numbers', demographically. The chapter illustrated the characteristics of the studied period as a backdrop to understand the subsequent changes. Significantly Assam experienced an abnormally high rate of population increase among the Indian states as an outcome of the unprecedented immigration, in the period between 1901 and 1941. The period was also marked by economic collapse, changing configurations of agrarian power and assertion of new identities. Demographic forces in colonial Assam created the changing conditions of living in both workplaces and socially created space.

The second chapter, *Social Demography: Caste, Ethnicity and Religion* analysed the relation between change in demography and emergence of particular social structure. The factual accounts and the discussion in the chapter examined the implications of highly general, 'scientifically' defined categories in population, in the fields of knowledge and in the emergence of a complex social structure. Here we have discussed how colonial knowledge brought in notion of inequality. The social lives and practices of forest dwellers, shifting as well as settled cultivators, pastoralists, fisherman, and artisans were all crucially affected by the way they were seen by state and society, as well as the self-conceptions of their own practice. The whole span of colonial Assam's demographic structure has reflected a trend towards absorption of different tribal groups into caste Hindu society at varying levels and passing from an egalitarian to hierarchical social structure. The study found that the process was the consequence of both assimilative tendencies and exploitative

forces at work which culminated in significant increase in the population of high social castes as well as in the speakers of Assamese language. The pressures for demographic change has been traced to the aspirations (and vulnerabilities) that come with improving economic conditions; to shifting attitudes about authority, or to anticipation of new economic and/or identity threats and opportunities ahead.

The third chapter Demography, Society & Economy broadly analyzed the population of Assam valley, with reference to its growth, distribution of working force according to occupation, immigration, economic nature of the immigrant, pattern of land use under different agricultural crops and status of industry and trade as it difficult to trace the specific causes of social transformation that condition the behaviour of peoples and social aggregates, without a reference to the extant society and economy. For example, the discovery of tea with its significant base- the wastelands together with coal and petroleum changed dramatically every aspect of the subsequent nineteenth-century society in the Assam valley. The chapter enquired the broad nature of the region's economy in terms of continuity and change in production, consumption and competition and proceeds in the following sequence of: decline; growth and an illustration of the economic forces affecting both the sequences. Two consequences follow as a result of demographic transition: first an increase impacts positively upon economy by bringing down death rates and secondly economic change usually brings in population growth through migration. In conclusion it may be stated that the ways in which economy and society in Assam changed between 1700 and 1900 were extremely complex and provide few clear-cut answers to questions of 'better' or 'worse'. A broad analysis of the provincial population change in the relevant period failed to reveal any systematic relation between growth in population and growth in productivity.

The fourth chapter analyzed the interface between demographic change, socio-economic reorganisation and population settlement pattern as a result of demographic change in the Assam valley during colonial rule. Since the discovery of tea in the early nine-

teenth century, the valley of Assam had a period of rapid population increase compared to its state of depopulation in the years preceding British domination. Migration was a major component in this changing demography, stimulated by government interventions and economic opportunities. Demographic shift as a result of change in fertility and mortality rates together with in-migration has been one of the most important changes affecting human society, polity, economy as well as in the emergence of new landscapes, housing and settlement patterns, growth of cities and the increase in urbanization.

While population growth along with their physical movement is directly related to emergence of new landscape; change in settlement patterns and urbanization does not ensue because of simple growth. The migration induced demographic explosion was but poverty induced rural migration which occurred not due to urban pull but due to rural push and this distressed migration initiated urban decay. Space here was stratified and the working class such as the tea labour were confined to residual land, lacking in basic urban services. Thus the absence of big urban centres distinguishes the history of Assam. In terms of a demographic measure of urbanization, the period experienced a slow upward trend in the proportion of total population living in cities. The factors conditioning urban growth like functional differentiation were conspicuous by its absence. The problem have acquired severity as migrants have shown high selectivity in choosing their destinations (understandably linked with availability of employment and other opportunities), leading to regionally unbalanced urbanization. Lack of government willingness and commitment, inadequate financial and human resources, coupled with meagre agrarian reform rendered the process of urbanization difficult to achieve.

The fifth chapter is a summary of the ground covered in this thesis highlighting the principal points which emerge as conclusions of the study. Both determinants and consequences of population change and growth have been discussed, in the decadal time series of these components during the colonial period. The past significantly determines the present but the larger contexts within which the individual variables are located are often lost sight of. This work started with the very general hypothesis that for an understanding of

the present social structures, the past and the context are crucial for deciphering the process of change and that the past historical demographic trends played a crucial role in determining the nature of demographic present. Related to this proposition was the assumption that specific contexts were associated with particular demographic dynamics. In demography, change has often been seen as endogenous to the social structures. Historical demographers have attempted to model demographic-economic-urbanization interaction for different parts of the world in the past societies. The demographic change has also been related to specific pattern of expanded reproduction of labour.

# **PROBLEMS AND PROSPECTS OF SMALL TEA GROWERS OF NAGAON DISTRICT IN ASSAM**

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## **INTRODUCTION**

Tea is an agro-based labour intensive industry. It is one of the most popular beverages in the world. Tea brew is acclaimed as a divine remedy for various ailments since the initiation of tea drinking and Taoists called it “elixir of immortality”. The tea industry is one of the oldest industries of India under organized sector and it has also been considering as an integral part of tea after the China and also the fourth highest exporter of tea in the world market. The tea industry in India is more than 176 years old. Robert Bruce in 1823 discovered tea plant in the wild or in upper Brahmaputra Valley.

Indian tea plantation industry is able to maintain substantial growth in relation to volume of Indian tea production during the last two decade. There has been a dramatic change in tea disposal in the domestic market since 1960, because at the time of Independence only 79 million kg (About 31 percent of total production of 255 million kg) of tea was retained for internal consumption, but in 2008 as much as 802 million kg (About 82 percent of total production of 981 million kg) of tea went for domestic consumption purpose only.

One of the most significant role of the tea industry in Assam at the end of the last century was the participation of unemployed youths as a Small Tea Growers and thereby, resulting in increase in production of tea the State along with improvement of

their economic condition. Tea cultivation was once the domain of aristocrats with hardnosed British Sahibs on horseback supervising them. But tea plantation in Assam has come full circle as hundreds of small farmers have taken to grow the production. The profession has now shifted to common man, especially unemployed youths who have taken up tea cultivation as a business venture. The concept of Small Tea Growers is rather a recent phenomenon in Assam leading to socio-economic revolution in the remote areas of the State. Small Tea cultivation in India was first set up in the Nilgiris of Tamilnadu in 1930. But in Assam, it is comparatively a recent development. Small Tea cultivation of Assam is only four decade old i.e. it started in the year 1978, at the call given by Mr. Soneswar Borah, Ex-Agriculture Minister of Assam. He is on the other hand known as father of Small Tea Growers of Assam. Now its contribution to the economy of Assam and that of the nation as a whole has been considerably increased. Assam is considered the heart of India's \$1.5 billion tea industry and produced about 55 percent of the total production of India in 2008.

## **CONTRIBUTION OF TEA INDUSTRY IN THE ECONOMY OF ASSAM**

Assam is one of the major tea producing states in the world. It has a glorious past. The economy of Assam is primarily dependent on the earnings of tea. The tea industries of Assam have employed more than six lakhs labours along with seven lakhs of people which were bona-fide dependents of resident workers. Women constitute almost 50 percent of the workforce. About 20 Lakhs People of Assam are estimated to be directly or indirectly dependent on the tea industry of Assam ( Seuji Pat : Souvenir of All Assam Small Tea Growers' Association on occasion of 26<sup>th</sup> Annual General Meeting Held from 17<sup>th</sup> may to 19<sup>th</sup> May 2013).

## **DEFINATION OF SMALL TEA GROWERS**

Tea Board of India (TBI) defines “cultivation of tea on a plot of land not more than 25 acres (10.12hectres or 75 bighas) for production and sale of green tea leafs processing units is known as Small Tea Cultivators or Small Tea Growers.” (Tea Industry, A Road Map Ahead, G. D. Benerjee and S. Banerji, 2008, p-535). The

following categories of Small Tea Growers can be considered on the basis of size of land holding for purposes of this study:

- 1) Very Small Tea Growers with land holding up to 5 bighas
- 2) Small Tea Growers with land holding between 6-10 bighas.
- 3) Medium Small Tea Growers with land holding between 11-30 bighas
- 4) Large Small Tea Growers with land holding between 30 - 75 bighas

## **OBJECTIVES OF THE STUDY**

The general objective of the study is to analyze the problems, prospects, growth and development of Small Tea Growers of Assam. The specific objectives of the study are as follows:-

1. To study the motivational factors relating to Small Tea Growers of Nagaon District.
2. To study the problems faced by Small Tea Growers of Nagaon District relating to holding of Land, Employment, Sources of Capital, Production and Marketing
3. To study the role of various agencies like TBI, AASTGA , AB-ITA and other Government agencies.

## **SAMPLING TECHNIQUES**

The Stratified Simple Random Sampling method has been taken for the study considering the nature of universe (based on size of land holding pattern). The study was confined only to Nagaon district of Assam. Nagaon district occupies only 449 and they have been engaged in tea plantation works very scattardly. Further, out of the total small tea growers' of Nagaon district of Assam, only 50% i.e. 225 has been selected for the purpose of the study through the stratified random sampling technique.

**Table:-1: Numbers of STG'S in the Nagaon District as per Land Holding Pattern**

Sl. No.	Classification of STGS'	Total Nos. of STGS'	Selected Nos. of STGS'
1	Very small tea growers(0-5 bighas)	76	38
2	Small tea growers(5-10 bighas)	134	67
3	Medium small tea growers (10-30 bighas)	188	94
4	Large small tea growers (30-75 bighas)	51	26
	Total	449	225

## FINDINGS

The Small Tea Gardens of Assam have been contributing a lot for development of the economy of Assam as well as India in the field of generation of employment opportunities, promotion of equitable distribution of national income, making effective mobilization of untapped capital and human skills, utilization of unproductive and low productive of land, leading to growth of rural areas and economically underdeveloped regions. The study is covering all aspects in-depth analysis of the small tea gardens of Assam. Tea plantation is a way of life of one third population of Assam, and has a great contribution to the entire economic as well as socio-cultural scenario of Assam. A brief summary of the findings of the study and Suggestions the earlier chapters are presented below shortly

There are 449 Small Tea Gardens and 24 Big Tea Estates have been engaged in production of green tea leafs. It is also found that the economy of the district is predominantly agrarian. As per the Tea Board of India there are 24 big tea gardens covering land area of 8757 hectares. The total area registered for tea plantation is 13,964.34 hectares and tea is cultivated in an area of 8299.72 hectares.

It was found that Small Tea Gardens have to play a pioneer role in the economic development of our country, which is also required to accelerate the rate of economic development. For development of Small Tea Gardens in Assam, the financial institutions, Government of Assam and Tea Board of India are most important. The major findings of the field survey are given below:-

1. It was found from the survey that only 11.56 percent of the Tea

Growers has registered their gardens and 88.44 percent of Small Tea Growers could not register their gardens.

2. The motivational factors to motivate the respondents for small tea cultivation during the course of the study, it has been found that 70.54 percent of Small Tea Growers are motivated to doing small tea plantation for fulfillment of their physiological needs such as food, clothing, shelter, drinking water etc., 5.80 percent of small Tea Growers are motivated for safety needs, 12.05 percent of Small Tea Growers are motivated for fulfillment of their social needs, 6.25 percent of the Tea Growers are motivated through ego-needs and 5.36 percent of Tea Growers are motivated through self fulfillment needs such as satisfaction.
3. Among the 225 Small Tea Gardens covered by the survey, only 11.11 percent of the units are within the initial investment of less than Rupees 25 thousands, followed by 36.44 percent in the range between Rupees 25 thousands to 50 thousands, 17.78 percent units having initial investments between Rupees 50 thousands to 75 thousands, 16 percent units in the range between Rupees 75 thousands to 1 lakh and 18.67 percent units having initial investment above Rupees 1 lakh.
4. It was found from the study that 60.88 percent of the Small Tea Grower's started the tea plantation with their own sources of funds, 32 percent Tea Grower's got funds from family and relatives and only 7.12 percent Tea Grower's got funds from Banks and other financial institutions.
5. The analysis of data revealed that the trend of production of green leaves from year by year increased. In the year 2008, production of green tea leaves was 24,87,000kgs and it rose to 31,51,200 kg in the year 2012. The increased trend of production of green tea leaves in 2012 by 26.71 percent.
6. The average production of green tea leafs is 686.24 kg in per bigha of land.
7. 86.22 percent of the Small Tea Growers have sold their green tea leaves through the agents. The survey revealed that the majority Small Tea Grower's i.e. 62.22 percent, the prices are fixed on weekly basis. Also in quite a few cases, the price of green tea

leaves is fixed on a fourth nightly basis. Emphasis on fixing the prices on daily, monthly, quarterly basis is low.

## SUGGESTIONS

1. The government should initiate the process to provide permanent land patta to all Small Tea Grower's who are presently doing the small tea garden business in the government land.
2. The Small Tea gardens should avail labour welfare measures provided by the Tea Board of India and other government agencies and adequate incentives should be provided for improving labour productivity.
3. The tea estates should enhance implementation of available improved technology and cultural practices. Farm mechanization should be adopted wherever feasible, maintain quality. Efficient technical support to the Small Tea Grower's in from of field level training and advisory services on improved production practices with special emphasis on developing leaves quality consciousness should be ensured.
4. In the context of marketing of green tea leaves, following initiatives might be able to solve the all such relevance of Small Tea Grower's
  - i) In case of marketing, the All Assam Small Tea Grower's Association (AASTGA) can set-up co-operative form of cultivation and a standard for production of green tea leaves and their price before every tea growing season.
  - ii) Direct sale of green tea leaves produced to tea factories, i.e. without presence of middlemen in the marketing channel, should be encouraged.
5. The Small Tea Grower's should lay more emphasis to improve the quality of green tea leaves using of better by use of better planting material, standard plucking of green tea leafs at appropriate time and regular intervals, adoption of proper pruning cycle, use of timely adequate dose of fertilizers as per the soil testing report, timely control of pest and disease and trained-up the labour forces on quality consciousness.

6. In the context of entrepreneurship development programme and training, the government should take some effective initiation for constitution of legal bodies to develop the small tea garden business and also provide proper entrepreneurship development training to all prospective Small Tea Grower's of the district.
7. formation of co-operatives society among Small Tea Grower's and creation of self-help group by the Small Tea Grower's themselves will obviously solve the problem of fixation of prices of green tea leaves as well as other problems of small tea garden business.
8. Government should initiate the common Insurance policy for reduction of the risk and uncertainty of natural losses of Small Tea Grower's.
9. To guide Small Tea Grower's, A Special Cell should be opened in the district under the Tocklay Research Centre, Assam Agricultural University (AAU), which the Small Tea Grower's can approach at any time to discuss their problems.
10. Majority of the Small Tea Grower's of the district were not aware of the various schemes of the tea board of India, Government and Financial Institutions. Tea Board of India and banks should be advised by the government to print broachers and pamphlets in local language about the financial/non-financial assistance available at each Bank and District Industrial Centre, All Assam Small Tea Grower's Association and distribute it to prospective and existing Small Tea Grower's.

## **CONCLUSIONS**

This survey conducted on Small Tea Garden show us that the Small Tea Garden movement is the largest single important economic activity that is happening at the movement in Assam. The Small Tea Plantation could be considered a bonus for Indian tea sector. It would provide fruitful opportunities for self expression and increasing their material wellbeing of the local rural youths. The profile of Small Tea Grower's is a fair sprinkling of Graduates, post - Graduates, Technically qualified persons, Teachers etc. among the Small Tea Grower's, the majority of the grower's present an altogether different picture. In Assam, younger generations feel frustrat-

ed because they do not have assurance that their education and other skills and talent would be utilized. Therefore, encouraging these youths in taking up small level of tea cultivation would strengthen the backbone of the rural economy and will also curb social unrest.

However, the Small Tea Grower's has been providing thousand of Self employment and employment (both permanent and seasonal) to another couple of people. It has recognized that small Tea Plantation sector is one of the largest employment potential sectors which can generates more employment opportunities and socio-economic development of the nation. In this respect, the Government, Tea Board of India and other Financial Institutions should take pragmatic steps for its overall development. It is obvious that Small Tea Grower's would nullify all the maladjustment of the larger tea industries. It is imperative to take care of Small Tea Grower's in future with suitable floor-price not as an ad-hoc measure but as sustained policy.

# **TEACHING COMPETENCY AND TEACHERS' ATTITUDE TOWARDS TEACHING: A STUDY ON THE TET-QUALIFIED TEACHERS IN SONITPUR DISTRICT OF ASSAM**

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The role of the primary level teacher is considered to be more important for the students as they need constant attention of their teachers and consider their teachers as the source of inspiration and guidance to them at this level. So, the effectiveness of teachers is very important with posses' of good personality, understanding skills, competencies and favourable attitude towards teaching.

Competency refers to a state of being well qualified to perform an activity, task or job function. However, the structure and assessment of competencies may differ from one community of practice to another and even within a community. Typically a competency is divided into specific indicators describing the requisite knowledge, skills, attitudes and context of performance.

An attitude is a hypothetically constructed that represents an individual's likes or dislikes towards an item. Attitudes are encompassed or closely related to our opinions and beliefs and are need to be based on our experiences. A person's attitude represents how he/she feels or state of mind about something. Attitude towards professions are one of the most important factors to be successful in the profession (Cakir, 2005).

RTE Act 2009 with a target to bring change in quality of education it came into force on April 1, 2010 in India. With the implementation of RTE Act 2009 a huge number of teachers were recruited in Assam, and untrained teachers, as per MHRD to be trained within the year 2015. So, to train them it was entrusted on

KKHSOU in Assam.

Considering the importance of competency and attitude of teachers and endorsed criteria of RTE Act 2009 for quality development in education the present study has been conducted on “*Teaching Competency and Teachers’ Attitude towards Teaching: A Study on the TET-Qualified Teachers in Sonitpur District of Assam*”.

## **OBJECTIVES**

1. To study the level of teaching competency among the TET-qualified teachers.
2. To study the level of attitude of teachers towards teaching.
  - i) i-To study the level of attitude of teachers towards teachers' professional behaviour.
  - ii) ii-To study the level of attitude of teachers towards school-related aspects.
  - iii) iii-To study the level of attitude of teachers towards teacher community relationship.
  - iv) iv-To study the level of attitude of teachers towards teacher -student relationship.
3. To find out the rural-urban difference in the teaching competency of teachers.
4. To find out the rural-urban difference in the attitude of teachers towards teaching.
5. To find out gender difference in teaching competency of teachers.
6. To find out the gender difference in the attitude of teachers towards teaching.
7. To find out the relationship between teaching competency and attitude towards teaching.
  - i. To find out the relationship between teaching competency and attitude among teachers working in rural area.
  - ii. To find out the relationship between teaching competency and attitude among teachers working in urban area.
  - iii. To find out the relationship between teaching competency and attitude among male teachers working in rural area.

- iv. To find out the relationship between teaching competency and attitude among male teachers working in urban area.
- v. To find out the relationship between teaching competency and attitude among female teachers working in rural area.
- vi. To find out the relationship between teaching competency and attitude among female teachers working in urban area.

## **NULL HYPOTHESES**

Ho1- There is no significant difference in the levels of teaching competency among the TET-qualified teachers.

Ho2- There is no significant difference in the level of attitude of teachers towards teaching.

Ho- There is no significant difference in the level of attitude of teachers towards professional behaviour.

Ho- There is no significant difference in the level of attitude of teachers towards school-related aspects.

Ho- There is no significant difference in the level of attitude of teachers towards teacher-community relationship.

Ho- There is no significant difference in the level of attitude of teachers towards teacher-student relationship.

Ho3- There is no significant difference in teaching competency of teachers working in rural-urban area.

Ho4- There is no significant difference in the attitude among the teachers towards teaching working in rural-urban area.

Ho5- There is no significant difference in teaching competency of male-female teachers.

Ho6- There is no significant difference in the attitude among the male-female teachers towards teaching.

Ho7- There is no significant relationship between teaching competency and teachers' attitude.

Ho-There is no significant relationship between teaching competency and teachers' attitude among teachers working in rural area.

Ho-There is no significant relationship between teaching competency and teachers' attitude among teachers working in urban area.

Ho-There is no significant relationship between teaching competency and teachers' attitude among male teachers working in rural area.

Ho-There is no significant relationship between teaching competency and teachers' attitude among female teachers working in rural area.

Ho-There is no significant relationship between teaching competency and teachers' attitude among male teachers working in urban area.

Ho-There is no significant relationship between teaching competency and teachers' attitude among female teachers working in urban area.

## **DELIMITATION OF THE STUDY**

- It is confined to the Government lower primary schools of Sonitpur district of Assam only. So, it excluded the upper primary level and private schools.
- The study is not related to the other teachers of primary level who are not appointed through the TET.

## **RESEARCH METHODOLOGY**

The population of the study consists of all the TET-qualified teachers working in different lower primary schools in Sonitpur district.

There are 2370 (2252 rural and 118 urban) lower primary schools in 7 educational blocks and 2747 TET-qualified teachers in Sonitpur. Among them 2493 (male 1391 and female 1102) are in rural and 254 (male 124 and female 130) are working in urban areas.

The sample has been collected by stratified random sampling technique and study has been done on 258 teachers (129 rural and 129 urban teachers). Among 129 rural working 72 male and 57 are female teachers, whereas 63 male and 66 are female in case of urban areas.

## **TOOLS USED**

- General Teaching Competency Scale-GTCS-PBLM by BK Passi, MS Lalita
- Teacher's Attitude Scale towards teaching and teacher student relationship by Arti Anand, Harbans Singh, Vishal Sood

## **Statistical technique used**

- Chi square analysis
- t- test
- Correlation
- Bar graph

## **MAJOR FINDINGS**

- The most of the lower primary TET-qualified teachers (i.e. 37.59%) have average level of teaching competency. The calculated chi-square value is found significant at both 0.05 and 0.01 level. In dimension-wise study too it is found significant differences in the levels of teaching competency
- In the general level of teachers attitude towards teaching, most (44.96%) of the teachers have obtained moderately favourable attitude. Only, 1.55% teachers have shown extremely favourable and 4.26% have shown extremely unfavourable attitude. The calculated *chi-square* value (245.82) proves significant differences among the teachers in their attitude level towards teaching. Similarly it is also found significant differences in dimensions wise study of attitude towards teaching.
- In teaching competency, there is found negligible difference between working in rural and urban schools. However, the 't' test has proved that the difference is not statistically significant and it indicates that there is no real difference between rural and urban TET-qualified teachers in teaching competency.
- With regards to the teachers' attitude towards teaching, the difference between rural-urban TET qualified is found not significant at both 0.05 and 0.01 level.
- In sex wise study differences observed between male and female teachers working in rural area and it is found negatively signifi-

cant at both 0.05 and 0.01 level. But contrary to that, no such significant difference is observed between male and female teachers working in urban area.

- A significant difference has been found between male and female teachers teaching attitude working in rural area. But interestingly, no such differences have been observed between male and female teachers working in urban area.
- In relationship between teaching competency and teachers' attitude towards teaching for the entire sample, it is found significant but low positive correlation among the TET-qualified teachers. Similarly in locality wise study also there is found low and negative relationship but significant. While gender wise study, there is found significant relationship among male teachers working in rural area but contrary to that, no significant relationship is obtained in case of female teachers. But, for urban area, low and negative relationship was found among male and female teachers. But the calculated correlation was found not significant in case of male teachers; whereas, in case of female teachers it was found negatively significant.

## **CONCLUSION**

Considering the goals of RTE 2009, the present study is conducted on TET-teachers of Sonitpur district to understand their teaching competency level and also to know their attitude towards teaching with the variables rural/urban and male/female.

In study, average level performance is found in teaching competency and attitude among teachers. But to be an effective and a successful teacher and to build our nation and prepare our students to be qualitative and efficient for facing the challenging world, the teachers need to be positive attitudes covering all the related aspects of attitude, and they must be competent enough to teach our students efficiently. So, the study has concluded that from the present perspective, the TET teachers in Sonitpur district need to develop more positive attitude towards teaching in one side and need to empower themselves in their teaching service on the other.

# **SOCIO-CULTURAL AFFINITIES BETWEEN THE BODOS AND NEPALESE— A CRITICAL STUDY IN THE CONTEXT OF BTAD**

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The operative phrase ‘affinities’ contained in the title of the thesis mentioned above foregrounds close ties between two groups of people, the Bodos and the Nepalis, who have been living together for a considerable period of time in the northern part of the Brahmaputra valley. The usual dictionary definition of ‘affinity’ implies ‘a feeling of closeness and understanding that someone has for another person because of their similar qualities, ideas or interests’ (Merriam-Webster Dictionary, 2012). When it is specifically applied to human culture and used in the context of two or more groups of people living together in a constitutionally guaranteed political arrangement, as in the BTAD in Assam, it assumes larger implication. ‘Affinities’ in such a context is rooted in the concept of cultural pluralism formed with the elements of mutual coexistence based on tolerance, understanding, respect and commonly shared political, cultural and social goals. It can be argued, in purely theoretical terms, that cultural pluralism also allows space for the play of group assertions in terms of ethnic difference. It has been seen that such articulation of ethnic difference slides towards the public expression of the aspirations of the constituent groups. Recent history of ethnic assertions has proved that such expressions have often given rise to ethnic conflict as well. Ethnic conflicts in this context can be described as the bargain for greater share of the political and cultural arrangement. It is to be noted that such bargains refuse to negotiate the issue of ‘affinities’ or social and cultural closeness between groups living side by side in a constitutionally guaranteed

political space within the modern state. It is the argument of the present researcher that in the overall context of Bodo politics of identity where marking of cultural boundaries is maximized at the cost of the discourse of cultural pluralism, the ties between the Bodos and the Nepalis, which go against the grain of contemporary discourse of identity politics, serve to recommend a fascinating area of research.

The study explores the context of affinities between the Bodos and the Nepalis which is problematized as the entity known as the Bodoland Territorial Administrative Districts (BTAD) has been witness to, and is a result of a tumultuous and epoch-making history of the assertion of the identity of the Bodo people in which cultural distinctiveness rather than cultural pluralism was the driving impulse. While the Bodos have been the autochthonous group living in the Brahmaputra valley for thousands of years, the Nepalis are relatively new entrants as migrants and settlers in the valley including the areas now known as the BTAD. And yet, these two groups of people under study have shown remarkable sense of mutual respect, goodwill and camaraderie which went nearly unaffected even during the most violent times of turbulence and change in the closing decades of the 20<sup>th</sup> century and the first two decades of the present century.

It must be born in mind that the complex phenomenon of Bodo identity formation is based on colonial scholarshaiп, (Hodgson, Grierson, Endle, Wadell) mainly ethnography, anthropology, report writing and other forms of western epistemology. Based on these narratives, scholars like Suniti Kumar Chatterji put forward a kind of meta-narrative in which the Bodos were associated with a greater fraternity, i.e., the Kirata group of heroic people whose ancestry went back to King Bhagadutta, the son of Narakasura of the times of the Mahabharata. The last description of the Bodos as part of the Kirata fraternity extended their outreach as far as the Himalayan country of Nepal. On the other hand, linguistic evidence led colonial philologists and grammarians to the conclusions that the Bodos belonged to a language group called the Indo-Mongoloid branch of the Sino-Tibetan group of languages that was also described as the Tibeto-Burman group of people. The linguistic evidence further linked them to a language sub-group which came to be

known as the Bodo group of language which comprised of ethnic groups like the Bodos, Garos, Tiwas, Rabhas, Dimasas, Chutiyas, Morans, Mataks, Sonowals, Tipras among others in the North East of India and Rais, Limbus and Dhimals in Nepal.

When in the 20<sup>th</sup> century, the Bodos themselves sought to construct their identity around these terms and descriptions, they were confronted with the peculiar problems inherent in historiography. Because, as opposed to the seamless narrative structure of the oriental mythology which wove tale after tale without so much as paying regard to logical sequencing of historical events, historiography as a discipline of western epistemology demanded that a coherent and chronological narrative be told. Consequently, the construction of Bodo historiography was faced with the issues of ruptures in the historical narrative as a discourse. It is here that the Bodo endeavour to put forward a narrative had to fall back on the discipline of folklore as a marker of identity. This study both analyzes Bodo folklore as a marker of Bodo identity and gives a narrative account of the various aspects and forms of Bodo folklore in order to understand Bodo traditional way of life, worldview and belief systems. The study of Bodo folklore and folk life is juxtaposed with the equally compelling study of the Assamese Nepali folklore and folk life in order that the elements of affinity could be brought to high relief. In the lay imagination and worldview of both the Bodo and Nepali folk life, there is a celebration of the robust sense of community life together with close communion with nature. Both the cultures share the propitiation and celebration of nature and natural phenomena that further goes into the making of the bond between the two peoples.

Apart from adopting the methodology of folklore research complete with fieldwork-based data collection, collation and inference building, the present study also combines the methodology of historical research to delve deep into the ties of affinity between the Bodos and the Nepalis. It analyzes the politics of Bodo identity assertion in the larger context of Assamese subnational formation during the colonial period and goes on to establish how the Bodos were woefully marginalized during the transition from the pre-modern agrarian economic times to the modern capitalist colonial times where the resources of the state were usurped by an emerging and

distinctly identifiably upper-caste, western educated middleclass. The study further investigates the trajectory of the formation of a nascent Bodo middle class and its endeavours to write its own contemporary history with a slew of social reformist measures and political posturing. The study also incorporates the extremely dramatic form that the politics of Bodo identity assertion took in the closing decades of the 20<sup>th</sup> century and ramifications of such assertion triggered off, finally paving the way for the creation of an autonomous entity like the BTAD within Assam.

Alongside exploring the Bodo politics of identity assertion, the study also culls a narrative of the identity formation of the Nepalis settled in Assam who call themselves Assamese Nepalis. Such a narrative has to take into account the historical ties between Assam and Nepal, the country from which these settlers arrived and made permanent settlements. The study therefore looks into the historical causes of migration and the patterns of settlement in the Brahmaputra valley over more than a century and half ago. The study also includes an analysis of the racial composition of the Nepali nationalism including its caste Hindu composition with distinct hierarchy as well as the numerous ethnicities with their own customs, manners and even languages. When the settlement happened in the Brahmaputra valley, it is the argument of the present researcher, that a patently new nationalistic formation took place in Assam among the Nepalis in which most of the caste fault lines that prevailed in the Himalayan country that these people left behind have been rendered blurred. After defining the distinctiveness of the Assamese Nepalis as socio-cultural group, the study also explores the formation of political aspiration among this group of people.

In order to specify the socio-cultural affinities between the Bodos and the Nepalis, the study further takes up the advent of the Nepalis in the BTAD area and offers a historical narrative of their settlement pattern there. It highlights the innate ability of the Nepali people to evolve coping mechanism in times of conflict, a mechanism which the group of people have internalized into their culture through their history of interacting in an inherently multi-cultural and pluralistic society since time immemorial. The Assamese Nepalis adapted to the physiological and socio-cultural environment in the Bodo habitat by both being remarkably unobtrusive in their eco-

nomic and socio-cultural activities and in their political aspirations.

The spirit of camaraderie, which has been studied under the category of ‘affinity’ in the present study stems from three important elements as identified in the thesis and these three elements are: a) historical- in terms of the shared ancestry of Kirati brotherhood between the Bodos and certain ethnic groups in the Nepali nationalistic formation, b) cultural- in terms of the common or shared heritage of the magico-religious belief systems that exist in both the groups of people, and c) strategies and coping mechanisms that the Nepalis in Bodoland have devised over the decades in terms of physical/ environmental adaptation with the Bodos and finally socio-political adaptation in the fast-changing politics of identity in the Bodo society in the last hundred years or so.

The inherent sense of goodwill and fellow-feeling that the Nepali settlers harbor towards their Bodo neighbours has been identified as one of the defining factors going into the bond of affinities that exists between the two groups of people under study. It is to be noted that in the changing times of globalization when more and more people are moving away from their natural moorings of agrarian niches to the urban centres of towns, cities and metropolis, the study explores the emerging politics of culture in which multicultural pluralism as exemplified by the affinities between the Bodos and the Nepalis will take centre stage. Thus the work of researcher engulfs the area discussed above in the thesis being undertaken.

# **IDENTITY POLITICS OF DEORI COMMUNITY IN ASSAM: A STUDY**

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The present works entitled ‘Identity Politics of Deori Community in Assam: A Study’ is an attempt---- to examine socio-cultural status of the Deori community in Assam; to study the genesis and development of identity politics of the Deori community of Assam; to examine the response of Governments with regard to the demands of Deori community people and to examine the role of the Deori Autonomous Council in protecting the identity of the Deoris.

## **METHODOLOGY OF THE STUDY**

The study is based on both empirical as well as analytical method. Primary and Secondary sources of data are used in the present study. The present study was conducted in the 7 district of upper Assam by selecting a sample of total 343 respondents from Deori population. Among them, a number of 49 samples were drawn from each district through purposive sampling method. Structured interview schedule was prepared as the tool of Primary data collection. Data were inserted and analysed with the help of STATA 14.

## **Chapter wise findings**

### **CHAPTER- I**

**Chapter-I** delineates the details outline of research plan of the present study.

### **CHAPTER- II**

**Chapter II** has been divided into **three sections**. **Section I** explained that the emergence of the autonomy movement of the different tribes of North East India is differs from tribe to tribe, but all the movements are centered around on the protection of their ethnic identity.

**Section II** states that after independence of India, the feelings of the tribes and their ethnic sentiments developed in such a way that, they increasingly felt the plains tribes were much more backward than the other people of the State. This feeling was articulated through formation of various socio-cultural organizations and students organizations. They were gradually building up their movement based on their ethnic identity.

**Sections III** stated that ethnically Deoris are affiliated to great Tibeto-Burman group and their language also belongs to the Tibeto-Burman linguistic families. Entering to India from North East Asia i.e. from Chinese and Mongolian Territories, the Deoris are *Priestly Community* of people who are professionally worshipping of God since its inception. However, due to constant feuds with the neighbouring populations they had to move westward i.e. migrated from Sadiya-Kundil area to the plains of Assam. There are four broad divisions or *khels* among the Deoris. Each one derived their name either from a particular place or river such as Dibangiya, Tengapaniya, Borgonya and Patorgoyan. In terms of socio-cultural life of Deori community, they have unique language, religion, culture, tradition and way of living. Deoris are still maintaining most of their traditional socio-cultural traits intact, at the same time keeping a window open for incorporating modernism without affecting the core of the culture.

### CHAPTER – III

In **Chapter III**, the study reveals that the process for emergence of ethnic identity consciousness of Deori community started during the colonial period. Under the bold initiatives of Bhimbor Deori, creating a self rule concept among Deoris, he was striving continuously to improve the social, economic, political and educational conditions through the Tribal League and more particularly by forming the All Assam Deori Sanmilan (AADS) a social organisation of Deori community in 1936.

An observation of the study reveals that the backwardness and underdevelopment in social, economic, political, cultural educational field etc.; spread of Education; rise of Ethnic Identity consciousness; role of emerging Political Elites; impact of Science and Technology; negligence of the Assam Government for welfare of the Deori community and Ethnic Identity crisis of Deoris all of these causes together responsible for the emergence of Deori Autonomy Movement in Assam. This is also unanimously agreed by all the age groups of Deori people and all the respondents (56.54 percent of male and 62.65 percent of female) having different levels of educational qualifications. The formation of All Assam Deori Student's Union in 1959, Deori Sahitya Sabha on 20<sup>th</sup> of January, 1965, the All India Deori Youth & Students Association in 1992 and more particularly the entrance of All Assam Deori Autonomous Demand Committee on

1994 in the politics of Deori Autonomy movement gained a new force to carry out their agitation activities. In fact, the autonomy movement of the Deori community acquired political character when the Sadiya Conference of the All Assam Deori Student's Union raised the voice for a Separate Greater Autonomy for Deoris of Assam for the first time on 5<sup>th</sup> of June 1982. For that, the majority of respondents 65.38 percent of male and 68.67% of female unanimously agreed on post independence as the period for the emergence of Deori Autonomy Movement. Under the leadership of AADSU, a 12 point of charter demands was prepared with provision for Separate Autonomy for the Deoris in Assam and Recognition of Deori Language always topped its agenda. Hence, Deori ethnic assertion which originated in the Colonial period turned in due course of time to demand for Separate Autonomy on the 5<sup>th</sup> of June 1982. The trajectory of the movement since then has been passing through various ups and downs to the present position of demanding Sixth Schedule status to Deori community.

## **CHAPTER – IV**

In **Chapter IV**, The Government of Assam, as a part of positive response, recognised Deori language as language subject in the Primary stage of education on the 28<sup>th</sup> of January 2005 and in the same year signed the Memorandum of Understanding (Deori Accord) on 4<sup>th</sup> of March 2005. However, the formation of Deori Autonomous Council (DAC) could not meet the aspiration of Deori community. The study reveals that certain important impasse involved between the State and the demands of the Deori community and the expectation of fulfillment of these demands. To identify with and understand the issues concerned, a set of carefully constructed questions were put forward to 343 respondents, comprising both male and female persons, probing into the very nature of the problem. The replies reflected the imperative of the demands and the expectations associated with. The State's response to this demands and the outcome thereof formed the central theme of study in this chapter.

In the section addressing the problem of Deori language more than sixty percent of both male (60%) and female (63.85%) respondents are found unhappy with the initiatives taken by successive governments towards protection of the language. The community therefore, looks forward to the government for uplifting the language - ancient and rich. Likewise the percentage dissatisfied on the questions regarding educational and employment opportunities, opportunities for political representation, elimination of backwardness and underdevelopment, welfare policies, government initiative for development and preservation of Deori culture and identity is all above sixty per cent of the total 343 respondents, comprising both

male and female population. In term of age and educational qualification of the respondents similar responses are showed to government efforts; the percentage on the questions about government initiative for development and preservation of Deori culture and identity is higher (78.72%) than the other aspects. The dissatisfactions has been multiplied by factors such as remoteness and poor condition of their dwelling places, ignorance about governmental schemes and policies, high dependency on agriculture for livelihood, failing to have adequate political representation in the Legislative Assembly of Assam and in the Parliament of India. However, it is significant to note that majority of both male and female respondents are more hopeful on the State Government than the Central Government.

## CHAPTER – V

**Chapter V** is divided into **two sections**. **Section I** states that the Deori Autonomous Council is the Apex Council consisting of satellite areas of Village Council called the Deori Village Council (DVC). There are no separate compact areas or boundary for this Council. However, any area having more than 50% of Scheduled tribe population in the Deori dominated areas with population of approximately 3000 to 5000 will have Village Council. Each Village Council shall consist of 10 (ten) elected members out of which 5 (five) will be from Scheduled Tribe community. The DAC shall consist of 20 (twenty) elected members out of which 2 (two) members shall be nominated by the Government of Assam give representation to those communities of the council area which are not otherwise represented in it.

**Section II** deals with the role of the Deori Autonomous Council to meeting the aspiration of the people is discussed in details. Since its formation, the Deori Autonomous Council has taken variety of popular programmes starting from agricultural activities to preservation of Deori culture and so on. The study reveals that the present Deori Autonomous Council yet to have fulfill the people's aspirations as well as looked-for more active role to play in the coming days. Addressing the problem, only 11.37 percent of both male and female respondents are found usually avail the facilities of DAC while majority are being to some extent and deprived from such facilities. Almost similar percent of respondents in terms of age groups and occupations replied on availing the facilities. Notwithstanding an increase in the grant of the DAC by the State Government in the succeeding years (from 2005 to till present) only a very small percent of the respondents are satisfied with the actual work. Out of the 343 respondents, more than 70 percent of respondents answered dissatisfaction in regards to question for protection of the identity of Deoris. The respondents are also unanimous opinion on the non-stablisation of the DAC since 2005 multi-

plied by other factors such as the existence of unending intra conflict, use of DAC as a platform for power acquisition, emphasis on individual interest over nation interest and more particularly series of allegation of corruption against the Council, did not augur well for the Deoris of Assam.

## **CHAPTER – VI**

This chapter summarizes the entire findings, states the theoretical implication of the present study and test the logicality of the research questions formulated by the investigator for a coherent understanding of the problems stated.

Summing up, no doubt, the demands raised by the Deori organizations for the protection of Deori Identity has its historical rationality. However, under the leadership of AADSU rechristening their demands to convert the present Deori Autonomous Council (DAC) to Sixth Schedule status of the Indian Constitution creates another impasse in the politics of Assam.

# **A STATISTICAL STUDY ON RAINFALL FREQUENCY ANALYSIS OF NORTH EAST INDIA**

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Agriculture plays a vital role for the economic development of North East India. Every year most part of North East India has been affected by flood caused by heavy rainfall which damages crops and properties of people. Rainfall has a direct impact in the economy of this region. Also the study of extreme rainfall is very much useful for design of dam, road, bridge and hydrological planning. So proper estimation of extreme rainfall is necessary for economic development of this region.

The main objective of this research work is to make a statistical analysis of maximum annual rainfall frequency of the region North East India. An attempt has been made to find the best fitting model for the estimation of maximum rainfall of North East India.

For this study maximum annual rainfall data of 12 stations covering North East India have been considered. Four parameter estimation methods known as L-moments, LQ-moments, LH-moment and TL-moments are used for regional rainfall frequency analysis of the region. Firstly, regional maximum rainfall frequency analysis using L-moments has been carried out for the region. Using heterogeneity test, the homogeneity of the region has been tested. It is found that the region formed by 12 gauzed stations, is a possibly homogeneous one. Five extreme value probability distributions namely generalized extreme value (GEV), generalized logistic (GLO), generalized Pareto (GPA), generalized log normal (GNO)

and Pearson type III (PE3) are used for this study. Z-statistics criteria and L-moment ratio diagram are used as goodness of fit tests to select the best fitting distribution. PE3 distribution is identified as the best fit distribution for the region. Regional relationship has been developed using PE3 distribution.

Secondly, regional maximum rainfall frequency analysis has been carried out using LQ-moments for the region. Using heterogeneity test, it is found that the region is homogeneous one. Five extreme value probability distributions used for L-moment are also considered for this study. Using Z-statistics criteria and LQ-moment ratio diagram it is found that GPA distribution is identified as the best fit distribution for the region. Regional relationship has been developed using GPA distribution.

Thirdly, regional maximum rainfall frequency analysis has been carried out using LH-moments of four orders for the region. The four orders of LH-moments are known as  $L_1$ -moment,  $L_2$ -moment,  $L_3$ -moment and  $L_4$ -moments. Using heterogeneity test, it is found that the region is homogeneous for  $L_1$ -moment and possibly homogeneous for other orders of LH-moments. Three extreme value probability distributions namely generalized extreme value (GEV), generalized logistic (GLO) and generalized Pareto (GPA) are considered for this study. Using Z-statistics criteria and LH-moment ratio diagram it is found that for  $L_1$ -moment GPA distribution is identified as the best fit distribution and for other orders of LH-moments GLO distribution has been identified as the best fit distribution for maximum rainfall estimates of the region. Regional relationship has been developed using GPA and GLO distributions.

Fourthly, regional maximum rainfall frequency analysis has been carried out using TL-moments for the region. Using heterogeneity test, it is found that the region is possibly homogeneous one. Three extreme value probability distributions namely generalized extreme value (GEV), generalized logistic (GLO) and generalized Pareto (GPA) are considered for this study. Using Z-statistics criteria and TL-moment ratio diagram it is found that for GPA distribution is identified as the best fit distribution for maximum rainfall estimates of the region. Regional relationship has been developed using GPA distribution.

A comparative study among the estimation methods has been done using Monte Carlo simulation. For this purpose, two error functions namely relative root mean square error (RRMSE) and relative bias (RBIAS) have been employed. From the comparison it is found that the GPA distribution designated by  $L_1$ -moment is the most suitable and the best fit distribution for maximum rainfall estimates of the region North East India. Also  $L_1$ -moment method is significantly more efficient than the other methods used in this study.

# A STUDY ON SOME FRACTALS AND THEIR RELATED DIMENSIONS

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## INTRODUCTION

Geometry is concerned with making our spatial intuitions objective. Classical geometry provides a first approximation to the structure of physical objects; it is the language that we use to communicate the designs of technological products and very approximately, the forms of natural creations. In much of the human history, people have studied only regular, smooth objects like a triangle, square, circle, sphere, cone, ellipse etc. Obviously these smooth geometrical objects are idealization from what we actually have in our surroundings and this is sort of a legacy we have from all time great mathematicians like Pythagoras and Euclid. They developed the concept of idealizing the objects what we see in actual reality. In this way a very useful mathematical system was developed which we know as classical geometry or more popularly as Euclidean geometry. It is the most widely known and widely used scientific system in our civilization. Its impact in our mind is so deep that we naturally love and accept smoothness and as a result everything that are made by mankind are in the shape of some combination of its objects. Euclid and his successor like Apollonius, Archimedes, Galileo strongly believed that everything in this Universe are somehow in the shape of its objects.

Euclidean geometry is a very useful mathematical tool for describing simple objects having ideal shapes such as cubes, cones and cylinders etc. But as nature exhibits not simply a higher degree of complexity but an altogether different level of complexity, most

of the objects in the real world are so complex and irregular that the shapes and dimensions of these objects cannot be described by classical Euclidean geometry. For example, the motion of a particle suspended in a fluid (Brownian motion), the length of a coastline of an island, the surface area of the human lung, the shapes of trees, clouds etc. Euclidean geometry leave aside these types of objects to investigate their morphology as being 'formless' or 'amorphous'. The existence of these eye-catching patterns always challenge people to study their forms.

Responding to this challenge Benoit Mandelbrot, a Polish-born French mathematician brings to us new set of ideas and thus new ways of looking at the nature. He conceived and developed a new form of geometry of nature and implemented its use in a number of diverse fields. It describes many of the irregular and fragmented patterns around us, and leads to full-fledged theories by identifying a family of shapes called '*Fractals*'. Fractal geometry was popularized by the mathematician Benoit Mandelbrot, and it was he who coined the term fractal in 1977. Though the mathematical work of fractal geometry was first initiated by Cayley, Fatou and Julia in the late 19th and early 20th centuries, progress of research in this line was slow until the development of the electronic computers. Much of the current interest in fractals is a consequence of Mandelbrot's work. His computer simulations of maps of the complex plane have resulted in extremely complicated and beautiful fractals .

A fractal is a complex geometric shape with details down to the smallest spatial scales. Fractals are essentially self similar, whereby a subset of a fractal, and any subset thereof, may resemble the fractal as a whole. Consequently, a measure of the area of a fractal is often difficult to determine. A fractal may be quantified by a fractal dimension. The concept of fractal dimension has been applied in texture analysis and segmentation, shape measurement and classification, image and graphic analysis and in many other fields. There are quite a few definitions of fractal dimension making sense in certain situations.

Thus, different methods have been proposed to estimate the fractal dimension of an object under investigation. The box-

counting dimension is the most frequently used measurement method in various application fields. The reason for its dominance lies in its simplicity and automatic computability.

## **OBJECTIVE OF STUDY AND CHAPTERS**

From above we can say that fractal geometry comprises of analysis, computation and geometrical explanation of many of the irregular and fragmented patterns around us.

We set our journey as follows:

Before proceeding to the principal goal, we give a lay out of some fundamental concepts and results which will be helpful in understanding the subsequent chapters included in our thesis.

**Chapter 1** deals with a brief descriptions of the developing work done by some brilliant mathematicians in the field of chaos and fractals. Here, we have mentioned some basic concepts and results which are closely related to our research work. These are gathered from different literature, thesis, monographs and research papers.

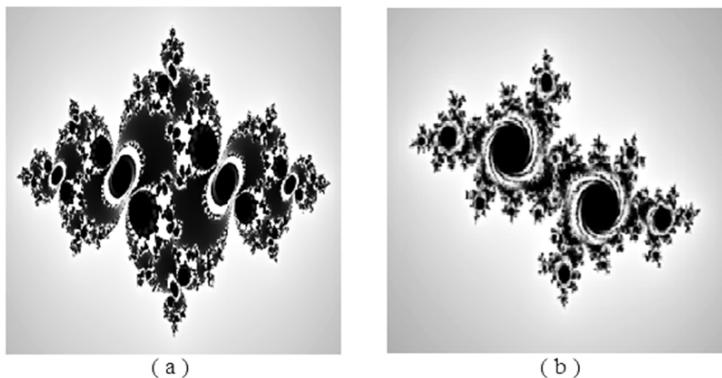
**Chapter 2** As our first problem, we investigated the Cantor set from the perspective of fractals and Box Counting dimension. Cantor sets can be constructed geometrically by continuous removal of a portion of the closed unit interval  $[0, 1]$  infinitely. The left out points form the Cantor set. The dimension of such a set is not an integer value. In fact, it has a 'fractional' dimension, making it by definition a fractal. The Cantor set is an example of an uncountable set with measure zero and has potential applications in various branches of mathematics such as topology, measure theory, dynamical systems, fractal geometry etc.

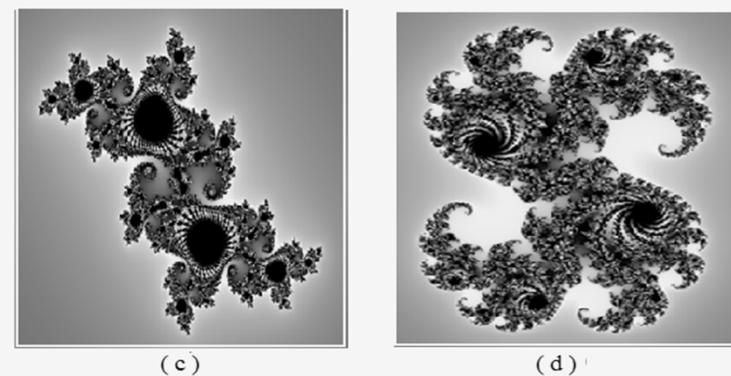
Initially, we reviewed the method of construction and properties of Cantor middle one-third set and the concept of fractal dimension in box counting scheme. We proposed a concept of generalized Cantor set as a generalization of classical Cantor middle one-third set and discussed the characteristics of fractal dimension of our constructed generalized cantor sets. We also discussed about possible application of our constructed generalized cantor set to study the chaotic behavior of piecewise linear chaotic maps.

**In chapter 3**, we have discussed about some of the properties of

Julia sets. Julia sets are amongst the most frequently pictured fractals, combining both aesthetic and actual beauty. The modern day interest in Julia sets and related mathematics began in the year 1920, which was initiated by French mathematician Gaston Julia. In 1918 he wrote a paper titled '*M'emoire sur l'iteration des fonctions rationnelles*' (*A Note on the Iteration of Rational Functions*) where Julia first introduced the modern idea of a Julia set. In this paper Julia gave a precise description of the set of those points of the complex plane whose orbits under the iteration of a rational function stayed bounded. Interest in the subject flourished over the next 10 years and many other well-known mathematicians like Harald Cramer began to study Julia sets. Despite the lack of computing machine available at that time he was able to become the first man to approximate an image of a Julia set. Due to the lack of computing machine the progress of research in this line slowed down and after some years Julia's work was forgotten by the mathematical community. It was the France mathematician Benoit Mandelbrot who brought back Julia's work around 1977. With the aid of computer graphics he showed that Julia's work is a source of some of the most beautiful fractals known till today.

As our second problem, we did a review of some preliminary concepts and definitions involved with Julia set. We used suitable examples to clarify those concepts and definitions. We then investigated some dynamical properties and some properties related to the structure of the Julia set. We further investigated on the method of visualizing the Julia set. In figure 1 , we have given some Julia sets produced by our method.





*Figure 1 [Julia sets on the complex plane for the parameter values  
 (a)  $-0.75 - 0.0345i$ , (b)  $-0.6 - 0.4i$ , (c)  $-0.087 - 0.65i$ , (d)  $0.3 + 0.25i$  ]*

In chapter 4, we have discussed about the Mandelbrot set. The Mandelbrot set has a celebrated place in fractal geometry, a field first investigated by the French mathematicians Gaston Julia and Pierre Fatou. In 1978 Robert W. Brooks and Peter Matelski investigated some subgroups of Kleinian groups and as a part of this investigation they first introduced the concept of what we now call Mandelbrot set.

Benoit Mandelbrot (1924-2010) was a Polish-born French mathematician, who spent most of his career at IBM's Thomas J. Watson Research Center in Yorktown Height, New York. He was inspired by Julia's above mentioned paper on complex dynamics and used computers to explore these works. In the year 1977, as a result of his research, he discovered one of the most famous fractals, which now bears his name: the Mandelbrot set. On 1<sup>st</sup> March 1980 Mandelbrot first visualized this set. He studied the parameter space of the complex quadratic polynomials in an article that appeared in the '*Annals of New York Academy of science*'.

The Mathematical study of the Mandelbrot set actually began with the works of Adrien Douady and John H. Hubbard who established many of its fundamental properties and named the set in honor of Mandelbrot. Interest in the subject flourished over and many other well known mathematicians began to study the Mandelbrot set. Heinz-Otto Peitgen and Peter Richter are the name of

two such mathematicians who became well known for promoting the Mandelbrot set with computer oriented graphics and books .

As our third problem, we have studied some dynamical behaviors and graphical complexity of the Mandelbrot set for the complex polynomial of the form  $z^2 + c$ . We have also discussed about the role of critical points in such a study with the help of Schwarzi-an derivative as well as some amazing facts about the fascinating fractal provided by the set.

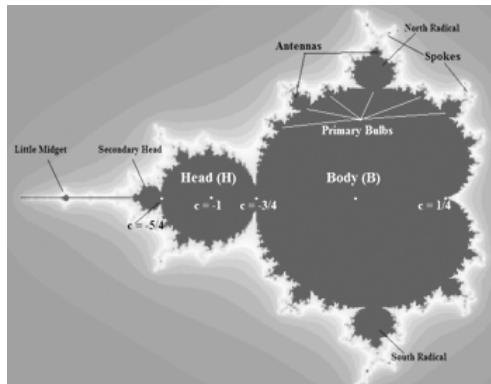


Figure 2 ( *Mandelbrot set & its Components* )

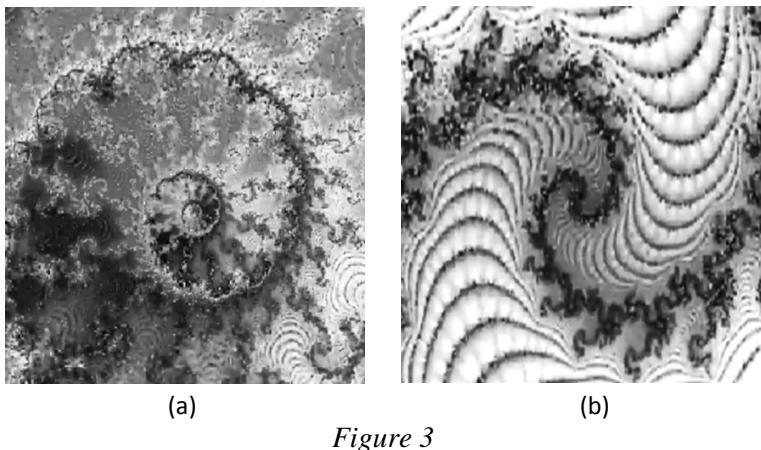
In chapter 5, we have done some investigation on some dynamical as well as structural properties of the Mandelbrot set. We have also discussed about some amazing features shown by the periodic numbers and rotation numbers related to the primary bulbs of the Mandelbrot set.

The graphical presentation of the Mandelbrot set is highly motivating as well as provocative of many questions that could not have occurred without it. The dynamical behavior and graphical complexity of Mandelbrot set provides a beautiful example of the fascinating world of fractals. Every little piece of it is loaded with some mathematical meaning. Our study helped us to understand some of such mathematical properties. We observed some amazing features shown by the periodic numbers and rotation numbers related to the primary bulbs of the Mandelbrot set which are guided by sequences like Fibonacci sequence, Farey sequence etc. We think there is enough scope of further investigation to find out many such

amazing features in the Mandelbrot set.

One of the amazing features of the Mandelbrot set which makes it as a celebrated icon of fractal geometry is that it is infinitely detailed, that is, if we zoom in to the set new and ever finer strange images will successively be revealed. In figure 3, we have given such two images which was found out by zooming near the boundary of

(a) north radical, and (b) head of the Mandelbrot set.

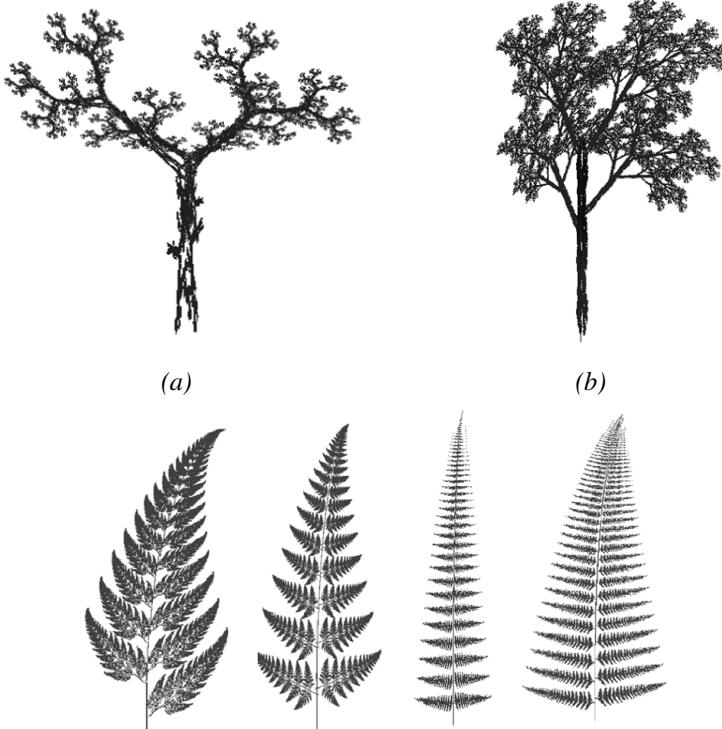


(a)

(b)

*Figure 3*

In chapter 6, we have done some investigation on some concepts of the theory of metric space to analyze fractal objects. If we iteratively apply a finite set of contraction mappings to any point on a compact metric space, we will come arbitrarily close to a set of points in the space which is very often fractal. The present work addresses the problem of how iterated function systems may be used to construct such fractal objects. For this purpose, we discuss two algorithms producing fractals, namely that of deterministic algorithm, and random iterated algorithm. We have also discussed about the connection between Hausdorff dimension and iterated function systems. In figure 4 we have presented some natural fractal objects by using random iterated algorithm. Here the constructions are based on the mathematical role hidden in the objects themselves.



(c)[ Four mutant varieties of fern]  
Figure 4

In chapter 7 The real breakthrough for the development of Fractal Geometry and Non-linear Dynamics in particular Chaos Theory came with the profound work of a group of researchers such as Adrien Douady, John H. Hubbard, Robert L. Devaney, Heinz-Otto Peitgen, Peter Richter, David P. Feldman, M.F. Barnsley, D. Saupe etc. Since then, this field is not only confined to a small area in mathematical sciences but also serves as a unifying thread interlacing many other branches of mathematics and science such as Topology, Measure theory, Geo-physics, Engineering , Fluid mechanics, Physics, Chemistry, Biosciences, Medical sciences etc., and thus, it offers wide scopes of doing research in this field.

Inspired by these works, some problems are proposed here to extend future research work on Fractal Geometry.





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