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# SPECTRUM

## HUMANITIES, SOCIAL SCIENCES AND MANAGEMENT

*A Peer Reviewed Research Journal*

*Vol. 3, 2016*

**St. Anthony's College**
Shillong, Meghalaya, India
www.anthonys.ac.in

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*HUMANITIES, SOCIAL SCIENCES AND MANAGEMENT*

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# STRENGTHENING OF TEACHING PRACTICES IN THE COLLEGES OF TEACHER EDUCATION

**Albert L. Dkhar**

## ABSTRACT

*Teaching practices occupy an important place in the programme of teacher education. It is the culminating experience in teacher preparation. It provides opportunity to student teachers to start inducting themselves into the profession. It prepares student teachers for teaching by practical training. It is the practical use of teaching methods, teaching strategies, teaching principles, teaching techniques and practical training to practice or exercise different activities. Therefore, this paper tries to stress the need for strengthening of teaching practices in the colleges of teacher education.*

**Key Words:** Teacher Education, Teaching Practices, Student Teachers, College.

## Introduction

Teacher education programme has assumed a vital significance in today's fast developing world. It plays a significant role in the formation of quality citizenship of the state, nation and the world at large. Teacher education is not merely teaching the teacher how to teach, but also to kindle his / her initiative to keep teaching alive. Teacher education that aims to provide and bring about quality education has become the need of the hour.

Teaching practices occupy an important place in the programme of teacher education. It is the culminating experience in teacher preparation. It provides opportunity to student teachers to start inducting themselves into the profession. Performance during practice teaching provides some basis for predicting the future success of the student teachers in the state. Working with students in schools during teaching practice calls for a high degree of emotional involvement of a mostly positive nature. Student teachers feel themselves grow through the experience and get familiar with the culture of teaching. Teaching practice will make them feel engaged, challenged and even empowered. It prepares student teachers for teaching by practical training. It is the practical use of teaching methods, teaching strategies, teaching principles, teaching techniques and practical training to practice or exercise different activities.

In order to achieve quality teaching practice by student teachers of Colleges of Teacher Education (CTEs) in the Schools of the state, right coordination between the CTE and the schools along with other stakeholders are necessary.

## Methodology

The objective of the study was to find out the level of coordination between the Teacher Education Institutions with the Practice Teaching Schools in the state of Meghalaya, and in order to achieve this objective, one of the 4 CTEs in Meghalaya, located at Shillong had been chosen for the study. The investigator constructed interview schedules were administered to the Principal of the CTE and heads of 18 schools, where the CTE carries out practice teaching in and around the Shillong city.

## Data Analysis

The data collected through interview schedules from the heads of practice schools and the Principal of the College of Teacher Education were segregated and analyzed in three sections, namely, pre-practice teaching, during practice teaching and post-practice teaching. It may be noted that the tabular presentations show the responses from the heads of the schools only and the same are compared with the responses given by the Principal of the College of Teacher Education.

## Pre-Practice Teaching

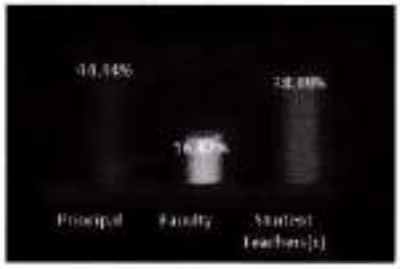
**Table 1: Responses of the Heads of Practicing Schools on Pre-Practice Teaching**

| Sl. No. | Questions | Yes | % | No | % |
|---|---|---|---|---|---|
| 1 | Did the College of Teacher Education (CTE) inform you of the schedule for practice teaching in your school well ahead of time? | 15 | 83.33 | 3 | 16.67 |
| 2 | Did the College inform you on the number of student teachers who were to come for the practice teaching? | 16 | 88.89 | 2 | 11.11 |
| 3 | Is the time schedule of the CTEs for practice teaching fit well into the school schedule? | 15 | 83.33 | 3 | 16.67 |
| 4 | Does the college give you an introduction letter for the student(s)? | 11 | 61.11 | 7 | 38.89 |
| 5 | Does the CTE extend all the help required for practice teaching in the school? | 9 | 50.00 | 9 | 50.00 |

It may be observed from table 1 that 83.33% of the heads of schools responded that the College of Teacher Education informed them of the schedule for practice teaching in their

schools well ahead of time, while 16.67% stated that they received information only 2 to 3 days before the student teachers came to the school for practice teaching. It may further be noted that the Principal of the CTE responded that the college informed the heads of schools on the schedule for practice teaching well ahead of time.

**Figure 1: The Member of the CTE contacting the Heads of Practice Schools**



The Principal of the CTE responded to the investigator that the Principal or the faculty member in charge of practice teaching contacted the heads of practice schools. However, as shown in Figure 1, only 61.11% of the heads of schools responded that the Principal or the faculty members contacted them for practice teaching and 38.89% of the heads of schools responded that they were contacted directly by the student teacher(s).

The Principal of the College of Teacher Education responded that the college informed all the heads of schools on the number of student teachers who were to go to different schools for the practice teaching. However, as shown in table 1, 11.11% of the heads of schools responded that the College of Teacher Education had not informed them on the number of student teachers going to their schools for practice teaching.

Table 1 shows that 88.33% of the heads of schools responded that the time schedule of the College of Teacher Education for practice teaching fitted well into the school schedule and the opinion of the Principal of the CTE was that the Principal or the faculty member in charge of teacher education discussed with the heads of schools well in advance on the schedule for practice teaching.

**Figure 2: No. of Days requested by the CTE for Practice Teaching from Schools**


It can be observed from Figure 2 that the 88.89% of the heads of practice schools responded that the CTE requested only for 5 - 14 days for practice teaching in the schools and that they had provided the same which is in full agreement with the response received from the Principal of the CTE and only 11.11% of the heads responded that the college requested for 15 - 25 days of practice teaching and they provided the same to the student teachers. However, the CTE is not satisfied with the number of classes allotted by the practice schools to the student teachers for both method papers.

**Figure 3: No. of Student Teachers taken by the Schools for Practice Teaching every year**


Figure 3 shows that 50% of the heads of schools responded that the schools provide for 6 – 10 student teachers to undergo practice teaching in their schools, while 38.89% of the heads allowed 1 – 5 student teachers for practice teaching and only 11.11% of heads of schools responded that they take about 11 – 15 student teachers for practice teaching, while no school took more than 15 student teachers in a year for practice teaching. It can also be noted here that the Principal of the CTE had responded that the college is in touch with more than 15 schools for practice teaching.

The Principal of the CTE responded that the college gave a letter of introduction of the student teachers to all the schools where the student teachers go for practice teaching and the same was confirmed only by 61.11% of the heads of schools, as shown in table 1 and on further interaction and enquiry, it was identified that student teachers failed to hand over the letters of introduction to some of the institutions.

As can be noticed in table 1, 50% of the heads of schools responded that the College of Teacher Education extended all the help required for practice teaching in the schools, while the rest of the 50% of the heads of schools stated that they had received no help from the CTE for the practice teaching. However, the Principal of the CTE responded that the college extended all help required for practice teaching in the schools.

The Principal of the CTE responded that the college had given instructions on the duties and responsibilities of the student teachers during their practice teaching in the secondary schools. The Principal also informed that the teacher educators of method papers gave demonstration lessons integrating the micro teaching skills for better effectiveness of classroom teaching and that the performances of the student teachers are assessed before practice teaching.

### During Practice Teaching

**Table 2: Responses of the Heads of Practice Schools on Matters during Practice Teaching**

| Sl. No. | Questions | Yes | % | No | % |
|---|---|---|---|---|---|
| 1 | On the first day of practice teaching, do you personally meet the students? | 16 | 88.89 | 2 | 11.11 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Do you provide all the necessary facility to student teachers? | 15 | 83.33 | 3 | 16.67 |
| 3 | Do you provide secondary classes (Classes IX and X) for the student teachers for practice teaching? | 4 | 22.22 | 14 | 77.78 |
| 4 | Do you introduce them to their respective subject teachers? | 16 | 88.89 | 2 | 11.11 |
| 5 | Do you ask the subject teachers to guide them and help in their teaching? | 12 | 66.67 | 6 | 33.33 |
| 6 | Do the student teachers observe the class room teaching of the subject teacher(s) before the student teachers begin their teaching? | 4 | 22.22 | 14 | 77.78 |
| 7 | Do you check the lesson plans of the student teachers before they go for class room teaching? | 5 | 27.78 | 13 | 72.22 |
| 8 | Do the student teachers follow the teaching practice schedule strictly? | 16 | 88.89 | 2 | 11.11 |
| 9 | Do you observe the class room teaching of the student teachers and provide feedback to them? | 3 | 16.67 | 15 | 83.33 |
| 10 | Do your subject teacher(s) observe the class room teaching of the student teachers and provide feedback to them? | 4 | 22.22 | 14 | 77.78 |
| 11 | Do you assign any other activities like co-curricular activities, maintenance of discipline, addressing the morning school assembly, etc. to the student teachers during their practice teaching? | 0 | - | 18 | 100.00 |
| 12 | Do the teacher educators from the College come to observe the teaching of the student teachers? | 18 | 100.00 | 0 | - |

It can be seen from Table 2 that 88.89% of the heads of practice schools responded that they personally met the student teachers on the first day of practice teaching, while 11.11% of them responded that they did not personally meet the student teachers but asked other teachers to meet them. Some of the instructions that the heads of schools gave to student teachers may be summed up as - attendance and punctuality were mandatory; to take class according to the time table provided; to undertake teaching from classes 6 to 8, to adhere to school rules and procedures; to demonstrate professional conduct in actions and attire; to work out the teaching schedule with the subject teachers; to prepare lesson plans for every lesson that will be taught during the practice teaching; it is the student teachers' responsibility after having completed the lesson to review the lesson through tests

and to communicate to the subject teachers; to interact with students and ask questions to find out whether they have understood the lessons taught to them; to use examples when teaching lessons to make the students understand better; to teach in simple language, and those topics which have not been understood by the students to reteach; to motivate and check that the students learn the lesson well; to be fair, impartial and consistent in working with students; to understand and to address the problem of individual differences among the children; student teachers must put in more effort and explain the lesson with the help of models, charts, blackboard, etc. for the benefit of the students and to make the class interesting; to find value in teaching and to be practical; and to maintain confidentiality of information received about students or school.

The Principal of the CTE also responded that the schools considered the subject preferences of the student teachers. Table 2 shows that 83.33% of the heads of practice schools responded the school provided all the necessary facilities to student teachers and only 16.67% responded that the schools do not provide all the facilities to the student teachers. The Principal of the College of Teacher Education responded that the schools provided all facilities to the student teachers.

It may be seen from Table 2 that only 22.22% of the heads of schools responded that they provided secondary classes (Classes IX and X) for the student teachers for practice teaching and 77.78% of the student teachers responded that the schools could not provide classes IX and X for practice teaching because the heads of schools and the subject teachers of the secondary section were worried about the completion of the course for the Board examinations. The factors being the inability of the student teachers to teach well, the inability of the student teachers to maintain discipline in higher classes, the indifference of the students to listen to student teachers as they felt that their own subject teachers would re-reach the same.

It can be noticed that 88.89% of the heads of practice schools responded that they introduced the student teachers to the respective subject teachers of the schools, while only 11.11% of the heads of schools do not introduce the student teachers to the subject teachers.

Table 2 shows that 66.67% of the heads of schools responded that they asked the subject teachers to guide and help the student teachers in their practice teaching, while 33.33% of them responded that they do not give such instructions to the subject teachers of the school. It can be identified from Table 2 that only 22.22% of the heads of schools responded that the student teachers observed the classroom teaching of the subject teacher(s) before they began their own classroom teaching practice, while the rest 77.78% of the heads of schools responded that there is no observation of the teaching of the subject teacher(s) by the student teachers.

Only 27.78% of the heads of schools responded that they checked the lesson plans of the student teachers before the student teachers went for classroom teaching, while 72.22% of them did not check the lesson plans.

**Figure 4: Duration of the stay of the student teachers in the school every day**


Figure 4 shows that only 5.56% of the heads of schools responded that the student teachers remained in the school the entire school hours during practice teaching, 16.66% of the heads responded that they remained for 3 to 4 hours and 11.11% of them responded that the student teachers remained for 2 to 3 hours and 66.67% of the heads of schools responded that the student teachers stayed in the school only for the allotted classes.

It can be noted from Table 2 that 88.89% heads of schools responded that the student teachers followed the teaching practice schedule strictly and only 11.11% of the heads of schools stated that the student teachers did not follow the schedule provided to them. It can also be noted here that Principal of the CTE stated that teacher in charge of practice teaching in the college followed up by contacting the heads of practice school ensuring that the student teachers followed the schedule.

**Figure 5: Person allotting Classes to the Student Teachers**


It can be observed from Figure 5 that 72.22% of the heads of schools allotted classes to the student teachers for their practice teaching, 11.11% of them responded that the teachers were asked to allot classes and 16.67% stated that others had allotted classes and on further inquiry, it was identified that the assistant heads of schools allotted classes.

**Figure 6: No. of periods / classes provided per day to Student Teachers**

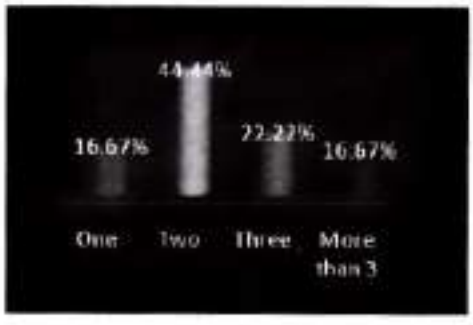



Figure 6 shows that 44.44% of the heads of schools responded that they could allot two classes per day to the student teachers, 22.22% of them responded that they could allot three classes per day and 16.67% each responded that they could allot only one class each per day and more than three classes per day.

Table 2 shows that only 16.67% of the heads of schools observed the classroom teaching of the student teachers in order to provide feedback, however, 83.33% of the heads of schools did not observe the teaching of the student teachers.

It can be stated from Table 2 that only 22.22% of the heads of schools responded that their subject teacher(s) observed the class room teaching of the student teachers and provided feedback to them and 77.78% of the heads of schools stated that their subject teachers did not observe the teaching of the student teachers.

The heads of schools did not assign any other activities like co-curricular activities, maintenance of discipline and addressing the morning school assembly to the student teachers during their practice teaching as responded by the heads of schools, as can be observed from Table 2.

It can be observed that 100% of the heads of schools responded stating that the teacher educators from the CTE came to observe the teaching of the student teachers in the schools, which also conforms with the response given by the Principal of the CTE.

**Figure 7: The amount of time spent by the teacher educator(s) in observing the classroom teaching of the student teachers**

It may observed from Figure 7 that 50% of the heads of schools responded that the teacher educators of the CTE observed the teaching of the student teachers for 10 to 15 minutes, 22.22% responded that they observed for 20 minutes, 11.11% and 16.67% respectively responded that the teacher educators had observed for a 30 minutes and 35 to 40 minutes.

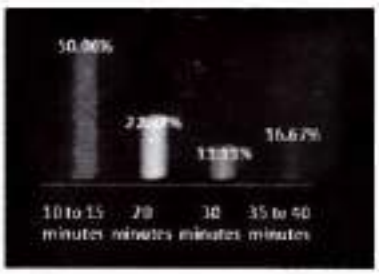



**Figure 8: The percentage showing the number of days the teacher educator(s) visited the practice school for observation**

Figure 8 shows that 77.78% of the heads of schools responded that the teacher educators visited the practice schools only once to observe the teaching of the student teachers and the same has been corroborated by the Principal of the CTE, 11.11% responded that they had observed two days of the student teachers' teaching, 5.56% each respondents observed that the teacher educators had visited the schools for three and more than three days respectively. The Principal of the CTE also responded that the teacher educators could observe only one lesson each being taught by the student teachers.

The Principal of the CTE responded that the teacher educators provided feedback on their observation of the classroom teaching of the student teachers at the end of the week in the CTE and when the student teachers returned to the college on completion of the allotted period of practice teaching. The Principal also informed that the teacher educators discussed on a regular basis with the Principal the progress of the practice teaching in the schools based on their visits to the schools. The Principal also responded that the attitude of the heads of schools, teachers and students of the schools was very encouraging.

## Post-Practice Teaching

**Table 3. Responses of the Heads of Practicing Schools on Matters of Post-Practice Teaching**

| Sl. No. | Questions | Yes | % | No | % |
|---|---|---|---|---|---|
| 1 | Do your students benefit from the practice teaching classes? | 17 | 94.44 | 1 | 5.56 |
| 2 | Do you give a relieving letter from the School after completing practice teaching to be submitted to the College? | 6 | 33.33 | 12 | 66.67 |
| 3 | Has there been any interaction between you and the Principal of CTE after the teaching practice to discuss the problems of practice teaching? | 1 | 5.56 | 17 | 94.44 |
| 4 | Do you agree that practice teaching is very important in order to have good and effective teachers for the future? | 17 | 94.44 | 1 | 5.56 |

It can be seen from Table 3 that 94.44% of the heads of schools responded that their own students benefited from the practice teaching classes of the student teachers and only 5.56% of the student teachers responded that their own students did not benefit.

It was responded by 33.33% of the heads of schools that they gave a letter of release from the School to the student teachers, after completing the practice teaching to be submitted to the CTE, however, 66.67% of them responded that they did not give a letter of release to the student teachers. The Principal of the CTE also stated that the practice schools did not issue a letter of release to the student teachers on completion of practice teaching.

The Principal of the CTE responded that the college assessed the performances of the student teachers when they returned after practice teaching and that mentoring classes for

the student teachers who were weak and needed improvement in teaching were organized in the college.

There had been no interaction between the heads of schools and the Principal of CTE after the teaching practice to discuss the problems of practice teaching as responded by 94.44% of the heads of schools, however, the Principal of the CTE stated that there had been interaction between the Principal and the heads of schools after the teaching practice to discuss the problems of practice teaching.

It can be identified from Table 3 that 94.44% of the heads of schools responded that they agreed that practice teaching is very important in order to have good and effective teachers for the future. The Principal of the CTE also responded that practice teaching is important and that it provides ample opportunity for development of teaching skills in the real classroom situation for the student teachers.

The difficulties faced by the schools on the general functioning of the school during the practice teaching as reflected by the response from the heads of schools may be summed up as - they interrupt the school schedule; adjusting timetable for the sake of student teachers bring unhappiness among the school teachers; allotment of classes is a great problem as the school teachers have planned their own schedule for completion of the course; topics taught by student teachers are always those which have already been taught by the subject teachers of the school; difficulties in completing the syllabus because student teachers are not prepared to teach the lessons given by subject teachers; student teachers teach from the lesson plans copied from their seniors and is found to be irrelevant, they seem not to know how to prepare their own lesson plans; classes get disturbed as the students are confused with the teaching of the student teachers and that of their own subject teachers; since it is practice teaching the student teachers do not care whether the student understands or not; student teachers do not teach the lessons allotted to them by our school subject teachers and therefore, it is a waste of time for teachers of the school who have to teach the lessons again; student teachers cannot control the students in the class; and it heightens students' indiscipline.

The Principal of the CTE stated that one of the severe problems faced by the college is that most practice schools do not provide more than 8 days for practice teaching.

## Suggestions

1. There needs to be a clear-cut coordination amongst the CTE, the DSEO, the teacher educators and the heads of practice schools when it comes to planning and implementation of practice teaching. Further, there also needs to be coordination amongst the heads of schools, teacher educators and the subject teachers for the implementation of practice teaching for ensuring correct practice teaching. The observation of lessons being taught by the subject teachers of the school, preparation and correction of lesson plans

designed by student teachers, observation and feedback to be provided by the school subject teachers, teacher educators and the heads of schools on the performance of the student teachers are factors that will go a long way in ensuring success in this regard. The school also needs to ensure that the student teachers get a whole school experience through participation in all kinds of events and activities that takes place in the school besides classroom teaching.

1. The district educational authorities, viz., the DSEO may allocate funds for financial incentives to be provided for the practice schools on a two-pronged manner: (a) providing certain honorarium for the heads of practice schools and the subject teachers who play the role of mentors in order to ensure maximum cooperation; and (b) providing financial assistance for certain developmental activities and organization of programmes such as exposure trips for the students of the school.
2. Practice teaching in secondary classes (Classes IX and X) has to be made mandatory as the B.Ed. programme is meant to prepare teachers for secondary education. Initiatives need to be taken by the CTE and the DSEO in ensuring that secondary classes are provided for practice teaching to the student teachers. Further, as per the latest regulations, Classes VI to X (for undergraduates) and Classes XI and XII (for post graduates), spread across all classes, may be arranged for teaching during the school internship.
3. The CTE may organize in-service teacher training programmes for the teachers of practice schools on the new methodologies, approaches for teaching and classroom management, skills training and other aspects of the role of teachers in the school and community. This is a way of providing incentive to the practice schools for the support and cooperation.
4. High API scores in category I may be awarded to the teacher educators for active coordination of practice teaching in the practice schools.
5. It is believed that the student teachers, who are undergoing the B.Ed. programme, which is of pre-service in nature, do not have exposure to classroom teaching. Therefore, for better induction into classroom teaching, the student teachers may be allowed to observe the classroom teaching of the subject teachers in the practice teaching schools before they begin their own classroom teaching.
6. It is recommended that the heads of schools need to show more interest in the fulfilment of objectives of practice teaching not only by providing the opportunities for the student teachers to teach in secondary classes (Classes IX and X), but also by checking the lesson plans by themselves a day before the student teachers undertake the practice teaching of that lesson in the classroom. The heads of schools can also request the subject teachers' assistance and involvement for this purpose. Further, in order to avoid confusion in the running of daily academic and administrative activities of the schools, the checking of lesson plans may be carried out at the end of the day's

classes. Further, as per the latest regulations, Classes VI to X (for undergraduates) an Classes XI and XII (for post graduates), spread across all classes, may be arranged fo teaching during the school internship.

7. Feedback is an important mechanism in helping a student teacher to improve his/he teaching skills and skills in classroom management. Here, the role of school subje teachers and the heads of schools are vital. Experienced school subject teachers an the heads of schools need to observe the classroom teaching of the student teache and give feedback on the strengths and weaknesses of the student teachers and sugge remedial measures. This is expected to encourage the student teachers and help ther overcome some of the weaknesses while they are in the school itself.
8. Practice teaching is meant not only for classroom teaching but also for whole scho experience as a teacher and, for this purpose, the heads of schools need to assign othe activities like co-curricular activities, maintenance of discipline and animating th school assembly to the student teachers during their stay in the practice schools.
9. It is recommended that there is continuous interaction between the CTE and the head of practice schools and a threadbare joint evaluation by the CTE by inviting the head of schools after the practice teaching to find remedial measures for better effectivene of the practice teaching.

In conclusion, as can be gathered very clearly from data that have been collected an the statistical interpretation of those data that there appears to be, to a large extent, a chas between the concept of teacher education and the actual ground reality in terms of th implementation of the Practice Teaching in the Practice Schools. The words of Jacqu Martin Barzun, an American born Historian reflects aptly this sad state of affairs, he sa elsewhere "*Teaching is not a lost art, but the regard for it is a lost tradition. Hence tomorrow problem will not be to get teachers, but to recognize the good ones and not discourage the before they have done their stint.*[1]" The lack of complete or near complete assistance an cooperation at different levels of the Practice Teaching Sessions is sure to hamper the prop training and development of the student teachers who will go on to teach students at th secondary level which is the turning-point in the academic lives of the students.

There is a need for a sea-change, firstly, in the attitude of all concerns towards teach education and more importantly toward practice teaching. A high degree of professionalis at all level is vital in ensuring the smooth and productive transaction of the practi teaching sessions. Secondly, Practice Teaching schools need to realize that they must li up to their name and purpose – that of being a practice school and that they are part an parcel of the teacher education programme. They exist in part to provide a suitable and sa environment for the student teachers to grow and to blossom under the nurturing care the Head, the Subject Teachers and the Students of the school. Three things need to happ to ensure this, as enumerated in the suggestions. Enhancement of communication is k

where the information is being conveyed by both ends in timely and clear manner keeping all concerns in the loop. Strengthening of collaboration where both the institutions benefit from each other in the process through the Practice Teaching Session. And lastly, but not the least, coordination in the preparation of schedules where both the institutions prepares their academic programmes with each other in mind and allocate specific dates ahead of time for the Practice Teaching to occur which is to be followed for at least three years. This calls for a deeper level of commitment from all quarters and a greater degree of sincerity as well. "*Teaching is the essential profession, the one that makes all other professions possible.*[2]" remarked David Haselkorn, the president of the Belmont, Mass.-based Recruiting New Teachers Inc., a nonprofit group that promotes teaching as a profession. It is high time it is accorded the dignity and the value that it so truly deserves.

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# ANTHROPOMETRIC CHARACTERS OF THE SAKACHEPS OF THE SAITSAMA VILLAGE, MEGHALAYA

**D. K. Limbu and Lumlang D. Marwein**

## ABSTRACT

*The present study is an investigation of the anthropometric characters of the Sakacheps of Saitsama Village of Jaintia Hills District, Meghalaya, India. A total of 138 individuals were measured of which 75 were males and 63 were females, ages between the 20 and 60 years. Both the sexes of Sakachep are mesen, hyper-leptoprosop, broad faced, possessing very broad jugo-mandibular index, mesorrhine and had short stature. Males and females are dolichocephal and mesocephal respectively. In respect of the above anthropometric characters, Sakacheps stands away from most of the populations of Northeast India compared for the present study.*

**KEY WORDS:** Evolution, Anthropometry, Sakachep, Mongoloid, North-East India.

## INTRODUCTION

One of the main objectives of physical anthropology is to understand the processes of human evolution and variation. Evolution is considered as the development of the dissimilarities in morphological and genetic characteristics between the ancestral and descendant populations (Dobzhansky, 1951). With the advancement of the science of genetics, human evolution is now- a- days conceived as a change in gene frequencies of population from generation to generation. It may, however be noted that in the study of human evolution, one could not completely ignore the importance of morphological characteristics. In this context, Buettner-Janusch (1966) has rightly-stated, "evolution is also necessarily viewed as changes in the morphology of organism through time. Morphology is the study of the form of the entire organism or a part of its size, shape, colour, etc. Analysis of the degrees of morphological similarities and differences has been and always will be basic part of evolutionary studies". So, a study on morphological characteristics of population is still very important from the evolutionary point of view.

The comparative morphological similarities and differences among individuals and populations can be studied with the help of anthropometry. Anthropometric measurements help in the study of rnicroevolution. It also helps in biotypology. Anthropometry plays a vital role in the measurement of many functions of human body. Anthropometry is the

means of quantifying variations in body size and shape. It is one of the most fundamental practical techniques of human biology, since nearly all biological functions are in some way related to one or the other aspect of the physical dimensions of the body.

Anthropometry is a fundamental part of studies of human adaptability. Variation in biological characters among the different populations is one of the most interesting and important aspects of study in physical anthropology. The Northeastern region of India may be regarded as a laboratory for such anthropological research, because here we meet numerous populations of various ethnic affiliations having divergent ecological settings. The present work is an attempt to collect data on anthropometric characters of the Sakacheps of the Saitsama village and to compare with that of the surrounding Mongoloid populations of the Northeastern region of India and ascertain its ethnic affiliation.

## MATERIALS AND METHODS

In this study the techniques of taking measurements as suggested by the International Biological Programme (IBP) given in Weiner and Lourie (1981) was followed. The methods of classification according to Martin and Saller (1957) were adopted. Altogether 13 anthropometric measurements have been taken among the Sakacheps of Saitsama village which comprises of 63 females and 75 males, age group between 20 and 60 years.

Thirteen measurements were taken on the head viz, Maximum head length, maximum head breadth, minimum frontal breadth, bizygometic breadth, bigonial breadth, nasal height, nasal breadth, morphological upper facial height, morphological total facial height and head circumference. Indices were calculated based on the above measurements. The data are presented in the forms of range, mean and standard error. For testing the significant differences between two sample means, student's t-test has been used.

Meghalaya literally called 'abode of cloud' lies between the Brahmaputra valley on the North and Bangladesh on the South. It lies between latitudes 25° 02' and longitude 92 °50 'East. The Sakachep is a small tribal population settled in the Saitsama village, situated in the northeastern part of the Jaintia Hills district of Meghalaya. They exhibit mongoloid physical feature and belong to the Tibeto-Burman linguistic group. Their language is akin to Hmar, Lushai and Biate. According to legend, the Sakachep came from Tripura and entered into the present homeland in 1500-1600AD.

## RESULTS

Thirteen different anthropometric measurements are taken on the Sakacheps of the Saitsama village (Table.1) and calculated the mean and ±s.e. The maximum head length of males varies between 17.6 cm and 20.3 cm and the mean is 18.87cm ± 0.07. In females the range varies between 15.3cm and 19.4 cm and the mean±± s.e is 17.94 ± 0.1 cm.

The head breadth ranges from 12.09 cm to 15.9 cm in males and the mean±± s.e is 14.41 ± 0.07 cm. In females the range varies between 13.2 cm and 15.6 cm and the mean ±± s.e is 14.18 ±0.07 cm. The lowest and the highest values of minimum frontal breadth among the Sakachep males and females are 9.4 cm and 11.8 cm respectively and the mean is 10.25 ± 0.06 cm. In females it varies from 9.0 cm to 11.1 cm and the mean is 10.03 ± 0.06 cm. In males the bizygomatic breadth ranges from 11.2cm to 13.8 cm and the mean being 12.43 ± 0.08 cm; in females it ranges between10.0 cm and13.2.cm and mean is 11.81 ±0.09 cm. Among the study population, the bigonial breadth varies from 9.0 cm to 11.7 cm and 8.9cm to 11.1 cm with their mean values being 10.66 ± 0.67 cm and 10.09± 0.06cm in males and females respectively. The range for the mean nasal height in males varies from 3.7 cm to 5.9 cm and the mean is 4.78 ± 0.05 cm and in females it varies from 3.6 cm to 5.2.cm .The mean is 4.34 ± 0.04 cm. The nasal breadth among the Sakachep males ranges from 3.1cm to 4.6 cm and the mean is 3.83 ± 0.04 cm; in females the same is varying between 2.2 cm and 4.3 cm. The mean is 3.54 ± 0.04cm. In males, the morphological upper facial height varies from 5.8 cm to 7.9 cm and the mean is 6.61 ±.0.06; in females it is between 4.9 cm and 6.9cm and the mean is 5.94 ± 0.06 cm. The morphological total facial height in male ranges from 10.1cm to 13.1cm and the mean is 11.53 ± 0.07 cm; in females the same is varying between 9.4cm and 12.0cm and the mean is 10.61 ± 0.07 cm. In the male subjects, the head circumference ranges from 52.0cm to 57.5 cm and the mean is 54.67 ± 0.18 cm; in female the same is ranging between 49.9cm and 57.4 cm and the mean is 53.48 cm ± 0.23. The upper arm circumference in males ranges between 20.5 cm and 29.0 cm and the mean is 24.35 ±0.23 cm; in female it varies from18.5cm to 28.0cm and the mean is 22.53 ± 0.3 cm. Sitting height vertex ranges from 62.5 cm to 93.4cm and 72.7cm to 87.3cm and the means are 82.94 ± 0.49 cm and77.89± 0.35 cm respectively among the Sakachep males and females. The stature in males varies between 145.0 cm and 176.4 cm and the mean is 157.99 ±0 .65 cm and in females it is between 141.2 cm to 176.4 cm and the mean is 150.18 ± 0.72 cm. Table1 reveals that the Sakachep males shows higher mean values than their female counterparts in respect of the above anthropometric measurements.

Table 2 shows that most of the Sakachep males are short in stature (57.33%), followed by below medium (25.33%), very short (6.67%), medium (6.67%), tall (2.67%) and above medium (1.33%). Majority of the females are also short (50.79%), followed by below medium (20.64%), medium (20.64%), tall (4.76%) and above medium (3.17%). Not a single individual from either of the sexes was found tall or giant in stature. Hence, majority of the Sakacheps represent their short stature.

Table3A and 3B show the six different indices calculated from the anthropometric measurements taken on the Sakacheps of Saitsama village of Jaintia hills district, Meghalaya. Among the male, the cephalic index ranges from 68.42 to 85.95 and the mean is 76.41±0.43

±0.43; in female it is 71.35 to 90.18 and the mean is 79.19±0.55±0.55.The morphological upper facial index varies from 42.11 to 65.5 and the mean is 53.27±0.53±0.53. In female it varies between 40.46 and 58.33 and the mean is 50.41±0.52±0.52.The Morphological total facial index ranges from 83.09 to 105.17 to 74.81 to 108.67 and their means are 93.01 ±0.79 ±0.79 and 89.94±0.82±0.82 among the Sakachep males and female respectively. In Sakachep males, the jugo- frontal index ranges from74.02 to 100 and the mean is 82.25 ±0.55 ±0.55 . The same is varying between 74.05 and 98 in the females and their mean is 85.27±0.59.±0.59. Nasal index ranges from 61.02 to 110.26 to 55 to 113.16 among the males and females and their means are 80.78±1.12 ±1.12 and 82.11±1.32±1.32 respectively. The percentage frequencies of cephalic index of the Sakacheps are shown in Table 4. Their percentages are, hyperdolichocephals, dolichocephals, mesocephals, brachycephals, and hyperbrachycephals in the males are 4%, 41.33%, 40%, 12%, and 2.67% respectively. Hyperdolichocephal female is found absent. However, the dolicholicephals, mesocephals, brachycephals and hyperdolichocephal females represent 25.40%, 41.27%, 25.40% and 7.93% respectively.

Table.5 shows the morphological upper facial index. Mesen (41.33%) is found in the highest percentage followed by lepten(26.67%), hyperlepten (20.00%) euryen (10.67%) and hypereuryen (1.33%). Among the females, highest percentage of the individuals is found to be the mesen (41.27%). The lepten, euryen and hypereuryen and the hyperlepten are represent 25.40%, 20.63%, 6.35% and 6.35% respectively. The above table reveals that in general, the Sakacheps are mesen in respect of their morphological upper facial index.

Table 6, shows the morphological facial index among the Sakacheps. Highest percentage of males are hyper- leptoprosop (50.66%), followed by leptoproscopic (24.00%), mesoprosop (18, 67%) and the least is the euryprosop (6.67%). Highest percentage female is hyperleptoprosop (47.62%). Leptoprosop, mesoprosop, hypereuryprosop, and euryprosop represent, 31.75%, 15.87%, 3.17% and 1.59% respectively. Hence, in respect of the morphological facial index, Sakacheps are more hyperleptoprosop.

Table7 shows the classification of the jugo-frontal index. The highest number of males are broad (44.00%) followed by medium (28.00%), very broad (25.33%) and least is the narrow (2.67%). Among the females, broad occur in the highest percentage (2.38%) followed by very broad (28.57%) medium (12.70%), narrow (4.76%) and very narrow (1.5%). Thus, in respect of the jugo –frontal index the most of the Sakacheps have broad Jugo-mandibular index

Table 8 shows the classification of Jugo-mandibular index among the Sakacheps. In male individuals the highest values of the index is observed to be the very broad (57.33%), followed by broad (34.67%), medium (6.67%) and the least is the narrow (1.33%).In females

also the highest frequency is of very broad (74.60%) ,followed by broad (19.05%) and the medium (6.35%).Hence, very broad jugo- mandibular index found to be is the most common in both the sexes of the study population.

Table 9, shows the percentage frequency of the classification of the nasal index in both the sexes of the Sakacheps. It is observed that the mesorrhine occurs in highest frequency (52.00%) followed by platyrrhine (34.67%) and leptorrhine (13.33%). In females also mesorrhine (50.79%) is found in highest percentage frequency followed by platyrrhine (34.92%) and leptorrhine (14.29%). Hyperleptorrhine was not found in both the sexes. Hence, mesorrhine or medium nosed are most common nose form found among Sakacheps of the Saitsama village.

The findings of the present study reveal that in general, the adult Sakacheps males of Saitsama village are dalichocephal, mesen, hyper- leptoprosop, broad faced, having very broad jugo-mandibular index, medium nosed and short stature. Females also reveal similar morphological features except the mesocephalic head.

## DISCUSSION

In the present study we attempt to make a brief discussion of our findings in the light of the studies undertaken on other Mongoloid populations of Northeast India. The highest mean head length among the male Pnars (19.10 cm ±0.06) was the highest, followed by the Sakachep (18.87 cm ±0.07). The Khynriam (18.8 cm ±0.05), Garo (18.8 cm ±0.32) and the Rabha(18.8 ±0.05). The lowest mean length of this trait is observed among the Bhoi Khasi (18.34 cm ±0.05). The highest head breadth was shown by the Khynriam Khasi (14.64 cm ±0.06), followed by the Pnars(14.53 cm ±0.04).Lowest mean value was found among the Biate of Saipung (13.15 cm ± 0.03). Dimasa Cachari male shows highest nasal height (5.09 cm ± 0.03), followed by the Bhoi Khasi (5.09 cm ± 0.03). In respect of the mean nasal breadth the above populations do not show much difference from each other. Dimasa Cachari male exhibits highest mean value for their morphological upper facial height (6.78 cm±0.04). The Bhoi Khasi (6.64 cm ±0.05), Garo (6.64 cm ± 0.05) and Rabha (6.64 cm ±0.05) are close to each other whereas the Biate of Saipung shows the least (6.15 cm ±0.02). Dimasa also shows highest mean value for the morphological total facial height (11.74 cm ±0.06), followed by the Sakachep and the least is observed among the Biate (10.67cm±0.03). The highest mean value for the head circumference is observed among the Lalung (55.7cm±0.13), followed by the Rabha (55.6 cm ±0.12) and lowest among the Bhoi Khasi males(51.79cm±0.06).In general, the male individuals of the remaining populations compared do not show much variations among themselves in respect of this anthropometric trait. Lalung male shows highest mean sitting height vertex (86.3 cm±0.35), where, the Pnar (81.12cm±0.38), the War (81.57cm ±0.33) and the Biate (81.71cm±0.11) exhibit low value. The Khynriam Khasi (82.36cm±0.34) and the Bhoi Khasi (82.36±0.33) show similar value in respect of their

sitting height vertex. Among all the populations compared, Lalung males (165.3 cm±0.07) are the tallest, where, the War Khasi males found to be the shortest in their stature (155.68. cm±0.55). Rabha(161.3cm±0.06), Garo (160.70cm ±0.05) and the Mikirs (160.6±0.4 ) ±0.4 ) are taller than the remaining male populations. The Sakachep males show moderate stature in comparison to the above populations 9 (Table 10).

Anthropometric characters of 10 female mongoloid populations of Northeast India are presented in Table 11. The Sakachep females have higher head length (17.94±0.01±0.01 ) compared to other populations excepting the Marngar (18.30±0.07)±0.07), Khynriam (18.06±0.07)±0.07) and the Pnar (18.31±0.06)±0.06). Except Pnar (14.21±0.05) ±0.05) the present population shows higher value head length. In respect of nasal height and nasal breadth all the female populations compared for the present study are by and large similar. The morphological upper facial height of the Sakachep (5.94±0.06)±0.06) , Biate (5.47±0.02) ±0.02) , War (5.85±0.16) ±0.16) and the Khynriam (5.79±0.06) ±0.06) found low. The morphological total facial height of the Deori (11.23±0.05) ±0.05) is highest and the Biate( 9.88±0.02)±0.02) is lowest. Except the Marngar (80.48 ±0.29±0.29), all the population compared are by and large are similar. Except the Marngar (154.45±0.54) ±0.54) and Deori (153.94±0.46)±0.46), Sakachep females are taller than all the populations compared.

In order to find out the variations in respect of the above anthropometric parameters, student's t- test has been applied between the Sakachep male and female of Saitsama village and ten other mongoloid populations of Northeast India which is shown in Table 12 and Table13 respectively. The head length of Sakachep male significantly differs from the Pnar, Bhoi, War and the Mikir. Their head breadth differs from the Khynriam, Garo, Lalung Rabha and Biate. The Sakachep male stands away only from the Khynriam, War, Dimasa, Lalung and the Biate in respect of their nasal height. Their nasal breadth significantly differs from the Khynriam, Pnar, Bhoi, Garo, Mikir and Biate. The morphological upper facial height of the Sakachep male is significantly different from that of the Khynriam, War, Dimasa, Mikir and Biate. In respect of the morphological total facial height the present population is significantly different from all the populations compared for the present study excepting the Pnar, Garo and Lalung. T-test on head circumference shows that except the Khynriam, Pnar, Dimasa, Garo, and Biate, the Sakachep male differs significantly from rest of the populations compared. Sitting height vertex of the Sakachep male differs from the Pnar, War, Lalung, Rabha, and Biate. The Sakachep male stands away from all the populations compared except the Khynriam, Pnar, Bhoi and the Biate males in respect of the stature.

Table 13 shows the t-test carried out between the Sakachep female and nine other mongoloid female populations of Northeast India. In respect of head length, the present population is significantly different from the Marngar, Khynriam, Pnar, Bhoi, Khasi of Mawkasiang, Deori

and the Biate. However, they do not show significant difference with the War Khasi and the Dimasa populations. In respect of head breadth, present population different significantly from all other populations except the Pnar and Sakachep. Nasal height reveals their significant difference with all the populations compared excepting the Pnar and War. Nasal breadth also reveals their significant difference with all except the Khynriam, Bhoi, War, Dimasa, and Khasi of Mawkasiang. In respect of the morphological upper facial height, Sakachep female significantly differs from the Marngar, Pnar, Bhoi, Khasi of Mawkasiang, Deori and Biate. The Sakachep female is significantly different from the Marngar, Khynriam, Deori and the Biate with regard to their morphological total facial height. Table13 further shows that, the present population is similar to all the populations compared excepting the Pnar in respect of the sitting height vertex. Except Deori, the Sakachep females are significantly different from all the populations compared for the present study.

We make a summary of the findings of the present study with a view to highlight the salient features of the Sakachep of Saitsema village, Meghalaya. The present study reveals the following facts. Males show higher values in respect of all the anthropometric characters considered. T-tests carried out between the Sakachep and other mongoloid populations of Northeast India show significant differences. However, Pnar and the Garo show some similarity with the present population.

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**Table 1. Anthropometric measurements of the Sakacheps**

| Sl. No. | Anthropometric measurement( cm) | Female (N=63) | | Male (N=75) | |
|---|---|---|---|---|---|
| | | Range (cm) | Mean(cm)±± S.E | Range (cm) | Mean(cm)±± S.E |
| 1 | Maximum head length | 15.3 - 19.4 | 17.94±0.10 ±0.10 | 17.6 - 20.3 | 18.87±0.07±0.07 |
| 2 | Maximum head breadth | 13.2 - 15.6 | 14.18±0.07 ±0.07 | 12.09- 15.9 | 14.41±0.07±0.07 |
| 3 | Minimum frontal breadth | 9.0 - 11.1 | 10.03±0.06 ±0.06 | 9.4 - 11.8 | 10.25±0.06±0.06 |
| 4 | Bizygometric breadth | 10.0 - 13.2 | 11.81±0.09 ±0.09 | 11.2 - 13.8 | 12.43±0.08±0.08 |
| 5 | Bigonial breadth | 8.9 - 11.1 | 10.09±0.06 ±0.06 | 9.0 - 1.7 | 10.66± 0.67 ± 0.67 |
| 6 | Nasal height | 3.6 - 5.2 | 4.34±±0.04 | 3.7 - 5.9 | 4.78±0.05±0.05 |
| 7 | Nasal breadth | 2.2 - 4.3 | 3.54±0.04±0.04 | 3.1 - 4.6 | 3.83±0.04±0.04 |
| 8 | Morphological upper facial height | 4.9 - 6.9 | 5.94±0.06±0.06 | 5.8 - 7.9 | 6.61±0.06±0.06 |
| 9 | Morphological total facial height | 9.4 - 12.0 | 10.61±0.07 ±0.07 | 10.1 - 13.1 | 11.53±0.07±0.07 |

| | | | | | |
|---|---|---|---|---|---|
| 10 | Head circumference | 49.9 - 57.4 | 53.48±0.23 ±0.23 | 52 - 57.5 | 54.67±0.18±0.18 |
| 11 | Upper arm circumference | 18.5 - 28.0 | 22.53±0.30 ±0.30 | 20.5 - 29.0 | 24.35±0.23±0.23 |
| 12 | Sitting height vertex | 72.7 - 87.3 | 77.89±0.35 ±0.35 | 62.5 - 93.4 | 82.94±0.49±0.49 |
| 13 | Stature | 141.2-176.4 | 150.18±0.72 ±0.72 | 145.0-176.4 | 157.99±0.65 ±0.65 |

**Table 2. Classification of Stature**

| Sl. No. | Classes | Male | | | Female | | |
|---|---|---|---|---|---|---|---|
| | | Range (cm) | N | Percentage | Range (cm) | N | Percentage |
| 1 | Very short | 130.0-149.9 | 5 | 6.67 | 121-139.0 | 0 | 0.00 |
| 2 | Short | 150.0-159.9 | 43 | 57.33 | 140.0-148.9 | 32 | 50.79 |
| 3 | Below medium | 160.0-163.9 | 19 | 25.33 | 149.0-152.9 | 13 | 20.64 |
| 4 | Medium | 164.0-166.9 | 5 | 6.67 | 153.0-155.9 | 13 | 20.64 |
| 5 | Above medium | 167.0-169.9 | 1 | 1.33 | 156.0-158.9 | 2 | 3.17 |
| 6 | Tall | 170.0-179.9 | 2 | 2.67 | 159.0-167.9 | 3 | 4.76 |
| 7 | Very tall | 180.0-199.9 | 0 | 0.00 | 168.0-186.9 | 0 | 0.00 |
| 8 | Giant | 200.0+ | 0 | 0.00 | 187.0+ | 0 | 0.00 |
| | Total | | 75 | 100.00 | | 63 | 100.00 |

**Table.3A. Indices for males**

| Sl. No. | Indices | N | Range (cm) | Mean ± S.E ± S.E |
|---|---|---|---|---|
| 1 | Cephalic index | 75 | 68.42-85.95 | 76.41±0.43±0.43 |
| 2 | Morphological upper facial index | 75 | 42.11-65.5 | 53.27±0.53±0.53 |
| 3 | Morphological facial index | 75 | 83.09-105.17 | 93.01±0.79±0.79 |
| 4 | Jugo-frontal index | 75 | 74.02-100.00 | 82.25±0.55±0.55 |

| | | | | |
|---|---|---|---|---|
| 5 | Jugo-mandibular index | 75 | 74.63-100.97 | 86.18±0.61±0.61 |
| 6 | Nasal index | 75 | 61.02-110.26 | 80.78±1.12±1.12 |

**Table. 3B. Indices for females**

| Sl. No. | Indices | N | Range (cm) | Mean ± S.E± S.E |
|---|---|---|---|---|
| 1 | Cephalic index | 63 | 71.35-90.18 | 79.19±0.55±0.55 |
| 2 | Morphological upper facial index | 63 | 40.46-58.33 | 50.41±0.52±0.52 |
| 3 | Morphological facial index | 63 | 74.81-108.67 | 89.94±0.82±0.82 |
| 4 | Jugo-frontal index | 63 | 71.97-100.0 | 85.08±0.61±0.61 |
| 5 | Jugo-mandibular index | 63 | 74.05-98.0 | 85.27±0.59±0.59 |
| 6 | Nasal index | 63 | 55.0-113.16 | 82.11±1.32±1.32 |

**Table.4. Cephalic Index**

| Sl. No. | Classes | Male | | | Female | |
|---|---|---|---|---|---|---|
| | | Range | N | Percentage | N | Percentage |
| 1 | Hyperdolichocephalc | -70.9 | 3 | 4.0 | 0 | 0.0 |
| 2 | Dolichocephal | 71.0-75.9 | 31 | 41.33 | 16 | 25.40 |
| 3 | Mesocephal | 76.0-80.9 | 30 | 40.0 | 26 | 41.27 |
| 4 | Brachycephal | 81.0-85.4 | 9 | 12.0 | 16 | 25.40 |
| 5 | Hyper-brachycephal | 85.5+ | 2 | 2.67 | 5 | 7.93 |
| | Total | | 75 | 100.00 | 63 | 100.00 |

**Table 5. Morphological upper facial index**

| Sl. No. | Classes | Male | | | Female | |
|---|---|---|---|---|---|---|
| | | Range | N | Percentage | N | Percentage |
| 1 | Hypereuryen | -42.9 | 1 | 1.33 | 4 | 6.35 |
| 2 | Euryen | 43.0-47.9 | 8 | 10.67 | 13 | 20.63 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | Mesen | 48.0-52.9 | 31 | 41.33 | 26 | 41.27 |
| 4 | Lepten | 53.0-56.9 | 20 | 26.67 | 16 | 25.40 |
| 5 | Hyperlepten | 57.0+ | 15 | 20.00 | 4 | 6.35 |
| | Total | | 75 | 100.00 | 63 | 100.00 |

**Table 6. Morphological facial index**

| Sl. No. | Classes | Male | | | Female | | |
|---|---|---|---|---|---|---|---|
| | | Range | N | Percentage | Range | N | Percentage |
| 1 | Hypereuryprosop | -78.9 | 0 | 0.00 | -76.9 | 2 | 3.17 |
| 2 | Euryprosop | 79.0-83.9 | 5 | 6.67 | 77.0-80.9 | 1 | 1.59 |
| 3 | Mesoprosop | 84.0-87.9 | 14 | 18.67 | 81.0-84.9 | 10 | 15.87 |
| 4 | Leptoprosop | 88.0-92.9 | 18 | 24.00 | 85.0-89.9 | 20 | 31.75 |
| 5 | Hyperleptoprosop | 93.0+ | 38 | 50.66 | 90.0+ | 30 | 47.62 |
| | Total | | 75 | 100.00 | | 63 | 100.00 |

**Table 7. Jugo-frontal index**

| Sl. No. | Classes | Male | | | Female | | |
|---|---|---|---|---|---|---|---|
| | | Range | N | Percentage | Range | N | Percentage |
| 1 | Very narrow | -69.9 | 0 | 0.00 | -71.9 | 1 | 1.59 |
| 2 | Narrow | 70.0-74.9 | 2 | 2.67 | 72.0-76.9 | 3 | 4.76 |
| 3 | Medium | 75.0-79.9 | 21 | 28.00 | 77.0-81.9 | 8 | 12.70 |
| 4 | Broad | 80.0-84.9 | 33 | 44.00 | 82.0-86.9 | 33 | 52.38 |
| 5 | Very broad | 85.0+ | 19 | 25.33 | 87.0+ | 18 | 28.57 |
| | Total | | 75 | 100.00 | | 63 | 100.00 |

**Table 8. Jugo-mandibular index**

| Sl. No. | Classes | Male | | | Female | | |
|---|---|---|---|---|---|---|---|
| | | Range | N | Percentage | Range | N | Percentage |
| 1 | Very narrow | -69.9 | 0 | 0.00 | -67.9 | 0 | 0.00 |
| 2 | Narrow | 70.0-74.9 | 1 | 1.33 | 68.0-72.9 | 0 | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | Medium | 75.0-79.9 | 5 | 6.67 | 73.0-77.9 | 4 | 6.35 |
| 4 | Broad | 80.0-84.9 | 26 | 34.67 | 78.0-82.9 | 12 | 19.05 |
| 5 | Very broad | 85.0+ | 43 | 57.33 | 83.0+ | 47 | 74.60 |
| | Total | | 75 | 100.00 | | 63 | 100.00 |

**Table 9. Nasal index**

| Sl. No. | Classes | Male | | | Female | |
|---|---|---|---|---|---|---|
| | | Range | N | Percentage | N | Percentage |
| 1 | Hyperleptorrhine | -54.9 | 0 | 0.00 | 0 | 0.00 |
| 2 | Leptorrhine | 55.0-69.9 | 10 | 13.33 | 9 | 14.29 |
| 3 | Mesorrhine | 70.0-84.9 | 39 | 52.00 | 32 | 50.79 |
| 4 | Platyrrhine | 85.0-99.9 | 26 | 34.67 | 22 | 34.92 |
| 5. | Hyperplatyrrhine | 100.0+ | 0 | 0.00 | 0 | 0.00 |
| | Total | | 75 | 100.00 | 63 | 100.00 |

**Table 10. Anthropometric characters (Mean±± S.E) of 11 mongoloid male populations of Northeast India**

| Sl. No. | Population | No. | Head length | Head breadth | Nasal height | Nasal breadth | Morphological upper facial height | Morphologi-cal total facial height | Head circum-ference | Sitting height vertex | Stature | Authors |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Khynriam | 100 | 18.8±± 0.05 | 14.64 ±0.06 ±0.06 | 4.54 ±0.01 +0.01 | 3.92 ±0.03 ±0.03 | 6.36±0.05 ±0.05 | 11.07±0.06 ±0.06 | 54.60 ±0.02 ±0.02 | 82.36 ±0.34 | 156.62 ±0.52 ±0.52 | Das (1978) |
| 2 | Pnar | 100 | 19.10 ±0.06 ±0.06 | 14.53 ±0.04 | ±0.03 ±0.03 | 3.72 ±0.02 ±0.02 | 6.56±0.05 ±0.05 | 11.40±0.06 ±0.06 | 54.59 ±0.13 ±0.13 | 81.12 ±0.38 ±0.38 | 157.35 ±0.59 ±0.59 | Das (1978) |
| 3 | Bhoi | 100 | 18.34 ±0.05 ±0.05 | 14.24 ±0.05 ±0.05 | 4.87 ±0.04 ±0.04 | 3.95 ±0.03 ±0.03 | 6.64±0.05 ±0.05 | 11.33±0.06 ±0.06 | 51.79 ±0.16 ±0.16 | 82.36 ±0.33 ±0.33 | 157.00 ±0.57 ±0.57 | Das (1978) |
| 4 | War | 100 | 18.68 ±0.06 ±0.06 | 14.43 ±0.05 ±0.05 | 4.58 ±0.04 ±0.04 | 3.80 ±0.03 ±0.03 | 6.34±0.05 ±0.05 | 11.05±0.06 ±0.06 | 54.16 ±0.13 ±0.13 | 81.57 ±0.33 ±0.33 | 155.68 ±0.55 ±0.55 | Das (1978) |
| 5 | Dimasa | 100 | 18.77 ±0.05 ±0.05 | 14.51 ±0.05 ±0.05 | 5.09 ±0.03 ±0.03 | 3.75 ±0.03 ±0.03 | 6.78±0.04 ±0.04 | 11.74±0.06 ±0.06 | 54.55 ±0.14 ±0.14 | 82.85 ±0.03 ±0.03 | 159.87 ±0.55 ±0.55 | Phookan (1969) |
| 6 | Garo | 200 | 18.8 ±0.32 ±0.32 | 14.1 ±0.04 ±0.04 | 4.73±± 0.03 | 3.97 ±0.03 ±0.03 | 6.64±0.05 ±0.05 | 11.4±0.06 ±0.06 | 54.9 ±0.11 ±0.11 | 83.5 ±0.32 ±0.32 | 160.7 ±0.5 ±0.5 | Das (1960) |
| 7 | Lalung | 70 | 18.65 ±0.10 ±0.10 | 14.1 ±0.06 ±0.06 | 4.61 ±0.03 ±0.03 | 3.68 ±0.03 ±0.03 | 6.52±0.05 ±0.05 | 11.5±0.06 ±0.06 | 55.7 ±0.13 ±0.13 | 86.3 ±0.35 ±0.35 | 165.3 ±0.07 ±0.07 | Das *et al* (1980) |
| 8 | Mikir | 280 | 18.5 ±0.05 ±0.05 | 14.5 ±0.04 ±0.04 | 4.77 ±0.03 ±0.03 | 3.91 ±0.02 ±0.02 | 6.42±0.04 ±0.04 | 11.3±0.06 ±0.06 | 55.4 ±0.13 ±0.13 | - | 160.6 ±0.4 ±0.4 | Deb (1979) |
| 9 | Rabha | 300 | 18.8 ±0.05 ±0.05 | 14.2 ±0.05 ±0.05 | 4.76 ±0.04 ±0.04 | 3.83 ±0.03 ±0.03 | 6.64±0.05 ±0.05 | 112. ±0.06 ±0.06 | 55.6 ±0.12 ±0.12 | 84.4 ±0.31 ±0.31 | 161.3 ±0.6 ±0.6 | Das (1960) |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | Biate | 101 | 18.75 ±0.05 ±0.05 | 13.15 ±0.03 ±0.03 | 4.28 ±0.05 ±0.05 | 3.45 ±0.01 ±0.01 | 6.15±0.02 ±0.02 | 10.67±0.03 ±0.03 | 54.34 ±0.07 ±0.07 | 81.71 ±0.11 ±0.11 | 159.01 ±0.18 ±0.18 | Devi (2005) |
| 11 | Sakachep | 75 | 18.87 ±0.07 ±0.07 | 14.41 ±0.07 ±0.07 | 4.78 ±0.05 ±0.05 | 3.83 ±0.04 ±0.04 | 6.61±0.06 ±0.06 | 11.53±0.07 ±0.07 | 54.67 ±0.18 ±0.18 | 82.94 ±0.18 ±0.18 | 157.99 ±0.65 ±0.65 | Present study |

**Table 11. Anthropometric characters (Mean±S.E±S.E) of 10 mongoloid female populations of Northeast India**

| Sl. No. | Population | No. | Head length | Head breadth | Nasal height | Nasal breadth | Morphological upper facial height | Morphological total facial height | Sitting height vertex | Stature | Authors |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Marngar | 95 | 18.30 ±0.07 ±0.07 | 14.00 ±0.05 ±0.05 | 4.59 ±0.03 ±0.03 | 3.43 ±0.02 ±0.02 | 6.23±±0.04 | 10.85±0.06 ±0.06 | 80.48 ±0.29 ±0.29 | 154.45 ±0.54 ±0.54 | Singh (2002) |
| 2 | Khynriam | 65 | 18.06 ±0.07 ±0.07 | 14.00 ±0.06 ±0.06 | 4.19 ±0.05 ±0.05 | 3.53 ±0.03 ±0.03 | 5.79±0.06 ±0.06 | 10.39±0.07 ±0.07 | 77.09 ±0.37 ±0.37 | 146.43 ±0.56 ±0.56 | Das (1978) |
| 3 | Pnar | 100 | 18.31 ±0.06 ±0.06 | 14.21 ±0.05 ±0.05 | 4.40 ±0.03 ±0.03 | 3.42 ±0.03 ±0.03 | 6.11±0.04 ±0.04 | 10.67±0.04 ±0.04 | 77.84 ±0.31 ±0.31 | 147.42 ±0.51 ±0.51 | Das (1978) |
| 4 | Bhoi | 100 | 17.73 ±0.06 ±0.06 | 13.75 ±0.04 ±0.04 | 4.49 ±0.05 ±0.05 | 3.61 ±0.03 ±0.03 | 6.12±0.05 ±0.05 | 10.53±0.06 ±0.06 | 78.07 ±0.26 ±0.26 | 148.38 ±0.49 ±0.49 | Das (1978) |
| 5 | War | 60 | 17.94 ±0.07 ±0.07 | 13.85 ±0.07 ±0.07 | 4.27 ±0.05 ±0.05 | 3.59 ±0.03 ±0.03 | 5.85±0.16 ±0.16 | 10.44±0.07 ±0.07 | 76.33 ±0.34 ±0.34 | 145.65 ±0.58 ±0.58 | Das (1978) |
| 6 | Dimasa | 100 | 17.90 ±0.04 ±0.04 | 13.97 ±0.04 ±0.04 | 4.60 ±0.03 ±0.03 | 3.43 ±0.04 ±0.04 | 6.02±0.01 ±0.01 | 10.75±0.06 ±0.06 | 77.63 ±0.25 ±0.25 | 148.21 ±0.45 ±0.45 | Das (1978) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Khasi | 76 | 17.34 ±0.04 ±0.04 | 13.84 ±0.08 ±0.08 | 4.17 ±0.04 ±0.04 | 3.49 ±0.04 ±0.04 | 6.19±0.06 ±0.06 | 10.61±0.06 ±0.06 | 76.57 ±0.38 ±0.38 | 148.34 ±0.56 ±0.56 | Das (1978) |
| 8 | Deori | 127 | 17.59 ±0.05 ±0.05 | 13.61 ±0.04 ±0.04 | 4.96 ±0.02 ±0.02 | 3.37 ±0.02 ±0.02 | 6.46±0.04 ±0.04 | 11.23±0.05 ±0.05 | 79.17 ±0.35 ±0.35 | 153.94 ±0.46 ±0.46 | Kuotsu (2003) |
| 9 | Biate | 102 | 17.84 ±0.03 ±0.03 | 12.79 ±0.02 ±0.02 | 4.00 ±0.02 ±0.02 | 3.14 ±0.01 ±0.01 | 5.47±0.02 ±0.02 | 9.88±0.02 ±0.02 | 75.75 ±0.11 ±0.11 | 147.95 ±0.16 ±0.16 | Devi( 2005)- |
| 10 | Sakachep | 63 | 17.94 ±0.01 ±0.01 | 14.18 ±0.07 ±0.07 | 4.34 ±0.04 ±0.04 | 3.54 ±0.04 ±0.04 | 5.94±0.06 ±0.06 | 10.61±0.07 ±0.07 | 77.89 ±6.35 ±6.35 | 150.18 ±0.72 ±0.72 | Present study |

**Table12. T-test of different anthropometric measurements (males)**

| Sl. No. | Populations | Head length | Head breadth | Nasal height | Nasal breadth | Morphological upper facial height | Morphological total facial height | Head circumference | Sitting height vertex | Stature |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Sakachep x Khynriam | 0.78 | 2.56* | 4.80* | 2.25* | 3.13* | 5.11* | 0.39 | 1.37 | 1.65 |
| 2 | Sakachep x Pnar | 2.56* | 1.50 | 0.17 | 2.75* | 0.63 | 1.44 | 0.36 | 2.94* | 0.73 |
| 3 | Sakachep x Bhoi | 5.89* | 1.89 | 1.50 | 2.40* | 0.38 | 2.22* | 12.00* | 0.98 | 1.15 |
| 4 | Sakachep xWar | 2.11* | 0.22 | 3.33* | 0.60 | 3.38* | 5.33* | 2.32* | 2.32* | 2.72* |
| 5 | Sakachepx Dimasa | 1.11 | 1.11 | 5.17* | 1.60 | 2.43* | 2.33* | 0.52 | 0.18 | 2.21* |
| 6 | Sakachep x Garo | 0.21 | 3.88* | 0.83 | 2.80* | 0.38 | 1.44 | 1.10 | 0.95 | 3.30* |
| 7 | Sakachep x Lalung | 1.83 | 3.44* | 2.83* | 3.00 | 1.13 | 0.33 | 4.68* | 5.60* | 7.61* |
| 8 | Sakachep x Mikir | 4.11* | 1.13 | 0.17 | 2.00* | 2.71* | 2.56* | 3.32* | - | 3.43* |
| 9 | Sakachep x Rabha | 0.78 | 2.33* | 0.33 | 0.00 | 0.38 | 3.67* | 4.23* | 2.52* | 3.76* |
| 10 | Sakachep x Biate | 1.33 | 15.75* | 7.14* | 9.5* | 7.67* | 10.75* | 1.74 | 2.46* | 1.52 |

*Significant at 5% level of probability

**Table13. T-test of different anthropometric measurements (females)**

| Sl. No. | Populations | Head length | Head breadth | Nasal height | Nasal breadth | Morphological upper facial height | Morphological total facial height | Sitting height vertex | Stature |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Sakachep x Marngar | 5.14* | 2.00* | 5.00* | 2.75* | 4.14* | 2.67* | 0.[illegible] | 4.69* |
| 2 | Sakachep x Khyn-riam | 5.14* | 2.00* | 2.50* | 0.20 | 1.88 | 2.20* | 0.[illegible]3 | 4.12* |
| 3 | Sakachep x Pnar | 6.17* | 0.33 | 1.20 | 3.00* | 2.43* | 0.75 | 7.[illegible]6* | 3.14* |
| 4 | Sakachep x Bhoi | 3.50* | 5.38* | 2.50* | 1.40 | 2.25* | 0.89 | 0.[illegible]03 | 2.07* |
| 5 | Sakachep x War | 0.00 | 3.30* | 1.17 | 1.00 | 1.13 | 1.70 | 0.[illegible]25 | 4.92* |
| 6 | Sakachep x Dimasa | 1.00 | 2.63* | 6.50* | 1.83 | 1.33 | 1.56 | 0.[illegible]04 | 2.32* |
| | Sakachep ox Khasi | 15.00* | 3.09* | 4.25* | 0.83 | 3.13* | 0.00 | 0.[illegible]21 | 2.02* |
| 8 | Sakachep x Deoris | 7.00* | 7.13* | 15.50* | 4.25* | 7.43* | 6.89* | [illegible].20 | 0.85 |
| 9 | Sakachep x Biate | 3.33* | 19.86* | 8.50* | 10.00* | 7.83* | 10.43* | [illegible].24 | 3.01* |

* Significant at 5% level of prob

# MIGRATION IN NORTH BENGAL: CHALLENGES AHEAD

**Subrata Purkayastha***

## ABSTRACT

*North Bengal region, a relatively resource rich and economically backward area of West Bengal has a distinct geographical entity, it covers an area of 21000 sq. km, which is approximately 24 percent of the land area of the state, and has a total population of about 17.20 million (2011 census) which is about 18.83 percent of the population of the state. It is bounded by mighty Eastern Himalayas, in it lays the Doars Terai region along with the plains of Teesta-Mahananda that continues to Bangladesh. The location of North Bengal on the "chicken neck" corridor connecting north east India with the mainland is of strategic importance, moreover it has a long international border with three south Asian countries, Bangladesh in the south east, Bhutan in the north east and Nepal towards the north west. This region has been a home to diverse indigenous tribes Rajbangshis, Mech, Totos, Limboo, Lepchas etc. and has in addition received various streams of migrant population groups from the colonial period particularly after the annexation of Darjeeling and adjoining areas from Sikkim and Bhutan (1835 to 1865), the period of development of tea industries- 1856 onwards, partition of the nation 1947 to 1950, creation of Bangladesh 1971-1972 etc. to recent times. This has changed the social economic fabric of the region. It is in this context that the present paper will make an attempt to highlight on the causes of migration from the colonial phase to present leaving its impact on the demographic, socio economic and political scenario of the state.*

**Key Words:** North Bengal, Population, Migration, Impact, Challenges.

### Introduction

Migration refers to the movement of people in space, and is a worldwide phenomenon that plays a significant role in population dynamics of any particular area. In fact migration is a process, which has three-fold impact that are felt in the area receiving migrants, the area from where the migrants move and on the migrants themselves who have to adapt to a new environment in a new land. Hence migration studies are emerging as an important field of research that has a bearing on the socio- cultural, political and ecological set-up of the areas receiving migrants as well as the areas from where out -migration occurs.

The North Bengal region comprises of the seven administrative districts of Jalpaiguri, Darjeeling, Alipurduar, Malda, Cooch Bihar, North and South Dinajpur is a relatively backward tract in the state of West Bengal. It lies on the trans- border zone of not only

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### Introduction

Migration refers to the movement of people in space, and is a worldwide phenomenon that plays a significant role in population dynamics of any particular area. In fact migration is a process, which has three-fold impact that are felt in the area receiving migrants, the area from where the migrants move and on the migrants themselves who have to adapt to a new environment in a new land. Hence migration studies are emerging as an important field of research that has a bearing on the socio- cultural, political and ecological set-up of the areas receiving migrants as well as the areas from where out -migration occurs.

The North Bengal region comprises of the seven administrative districts of Jalpaiguri, Darjeeling, Alipurduar, Malda, Cooch Bihar, North and South Dinajpur is a relatively backward tract in the state of West Bengal. It lies on the trans- border zone of not only

Bangladesh but also Bhutan and Nepal. This area is of strategic importance to India as it is located on the 'Chicken neck' (the corridor) that connects north east India to the mainland of India.

Physiographically, North Bengal is an admixture of heterogeneous terrain of mountains, hills, foothills and plains that was previously a forested tract with sparse population living in scattered hamlets separated from the Ganga plains.

North Bengal comprises of the Mahananda plains, Teesta Basin that extends to Bangladesh, the eastern Himalayas and the Terai region. The present study is restricted to the migration and its impact on the Darjeeling and Jalpaiguri districts of North Bengal as population growth, socio-economic development and the present political turmoil experienced by the region is intricately related to migration that started during the colonial phase and continues till date.

The Rajbonshis along with the Rabhas, Totas etc. were the original inhabitants of the terai region who lived in small hamlets called Jotes, they practiced subsistence type of agriculture, while the hilly tracks of Darjeeling Himalayas were home to the Lepchas and Bhutias.

## Migration in Pre- Independent Period

Historical records suggest that the history of settlement especially in the present Darjeeling and Jalpaiguri districts of North Bengal is of recent origin that started with the British opening up the region for setting of tea plantations and exploitation of timber. It is interesting to note that the present day Darjeeling area with its subdivisions of Kalimpong and Kurseong were parts the kingdoms of Sikkim and Bhutan. As the English east India Company wanted to set up a sanatorium and health resort for the British officials and businessmen in the cool climate of the Eastern Himalayas, they sent Lt. Col Lloyd and J.W.Grant( Commercial Resident of Maldah) to explore the places in Sikkim Hills and the two British officers recommended Darjeeling as a suitable location for the sanatorium as Darjeeling was ideally located within a short distance from Calcutta, the largest Metropolis of British India. Consequently the ruler of Sikkim was persuaded to cede to the East India Company the Darjeeling Hill track under a Deed of Grant in 1835 for the specific purpose of setting of facilities for recouping of the sick British soldiers. (Dasgupta-1999).

Thus from the beginning of the 19$^{th}$ century the English East India Company began to take keen interest in Darjeeling area and subsequently, the whole area came under the British in three phases within a period of thirty years i.e. 1835-1865. In, 1835 as already mentioned parts of present Darjeeling area came under the British by a Deed of Grant, in which, the ruler of Sikkim ceded to the British a portion of Sikkim Hills which covered the areas south of Great Rangit river, East of Balasan river, Kahel and little Rangit rivers and west of the Rangnu and Mahanada rivers. The second phase was marked by wars between Nepal and Sikkim and British East India Company by manipulation annexed more areas

of present Darjeeling from Sikkim by the treaty of Tunglong(1861). The third phase was marked by the outbreak of the Anglo- Bhutan war which ended with the signing of Treaty of Sinchulia(1865) and it resulted in the British annexation of the hill tracts situated to the east of the Teesta river, the west of the Ne-chu and De chu rivers and the south of Sikkim. In other words, the total territory of the present hill subdivisions of Darjeeling i.e. Darjeeling Sadr, Kurseong and Kalimpong came under the control of the British. (Dasgupta, 1999). Thus, with the annexation of this territory, Nepali migration started to this area that was originally sparsely populated with small hamlets of Lepcha and Bhutia communities. Table 1 suggests the pattern, proportion and share of Nepali migration to the present Darjeeling district prior to Indian independence.

**Table 1. Proportion of Nepali speaking population in Darjeeling District in Pre-Independence Era (1881-1941)**

| YEAR | TOTAL POPULATION DARJEELING DISTRICT | TOTAL POPULATION OF THREE HILL SUBDIVISIONS OF THE DISTRICT | TOTAL NUMBER OF NEPALI SPEAKING POPULATION IN THE DISTRICT | DECADAL GROWTH RATE in %OF THE TOTAL POPULATION OF THE DISTRICT | DECADAL GROWTH RATE in % OF THE THREE HILL SUBDIVISIONS | DECADAL GROWTH RATE in% OF NEPALI SPEAKING POPULATION |
|---|---|---|---|---|---|---|
| 1881 | 155179 | 92141(59.38) | 88000(56.70) | | | |
| 1891 | 223314 | 150311(67.31) | 134000((60.00) | 43.91 | 63.13 | 52.23 |
| 1901 | 249117 | 173342(69.58) | 152167(61.08) | 11.55 | 15.32 | 13.55 |
| 1911 | 265550 | 189763(71.46) | 166974(62.88) | 6.60 | 9.47 | 9.73 |
| 1921 | 282748 | 206961(73.20) | 161308(57.05) | 6.48 | 9.06 | -3.39 |
| 1931 | 319635 | 239377(74.89) | 175285((54.83) | 13.05 | 15.66 | 8.66 |
| 1941 | 376369 | 286355(76.08) | 223888(59.49) | 17.65 | 19.63 | 22.39 |

**Source: Census of India Reports**

Figures in parentheses indicate percentage to total. Growth rates computed by author

A cursory look into table 1 suggests the folowing:

(i) Maximum population of the present Darjeeling district during the pre-Independence phase were concentrated in the three hill subdivisions, the reason for this may be attributed to the fact that the Terai or the foothills were swampy malaria prone areas which were avoided by the early settlers. Maximum share of the population consisted of Nepali migrants.

(ii) The decadal growth rate of population of the three hill subdivisions has been slightly higher in all the decades during the pre-independence period as compared to the decadal population growth rate of the district as a whole.

(iii) The percentage share of Nepali speaking population to the total population of the district suggests a steady increase from 1881-1901. From 1921 to 1931 the quantum share of Nepali speaking population to the total population indicates a slight fall (from 62.88% in 1921- 54.83% in 1931) suggesting migration of non Nepali population to this area from other parts of India.

(iv) The decadal growth rate of the Nepali speaking population indicates positive growth rate except in 1911-21 decade that suggests a negative growth of Nepali speaking population ( -3.39%). However the highest growth of the Nepali speaking population in the district is recorded in the 1881-91 decade (52.32%) followed by the decade 1931-41(22.39%).

(v) It is interesting to note that from 1881-1941, the total population of the district had a growth rate of about 142.53% whereas the Nepali speaking population of the district recorded a higher growth rate of 154.42% for the same period

## Factors behind Large Scale Nepali Speaking Population Migration

Migration is complex occurrence that are aided through a complex push factors from the areas from where the migrants leaves and the pull factors which attracts the migrants to the new areas and both the factors operates simultaneously.

The British policy was to outnumber the original ethnic communities of the Lepchas and the Bhutias in the region as both these communities were more loyal to Tibet, with whom they were strongly integrated by common heritage, religion and culture. As British did not share cordial relations with Tibet, the British officials encouraged Nepali migration to this area to counter Tibetan influence ( Risley 1894).

Moreover, British shared friendly rapport with Nepal, the loyalty and velour displayed by the Nepali soldiers to the British East India Company motivated the British rulers to use Darjeeling as a permanent recruiting center for the Gurkha regiment of the British Indian army. In fact, Mr.E. Drummend, the then Magistrate of Dinajpur urged upon the Government of Bengal to increase the Nepali recruitment as according to him they were more efficient, courageous and trustworthy than the plains people. This attracted Nepali migration to Darjeeling, as Darjeeling emerged as an important recruiting center of the Nepalese. The Nepali rulers in Kathmandu did not initially favour recruitment of the Gurkha soldiers for Indian army from within Nepal. ( Dasgupta 1999).

The growth and progress of Tea plantations in Darjeeling which started on a commercial scale in 1856 attracted Nepali migrants in the tea gardens, furthermore the English Tea

planters encouraged settlement of the Nepali migrants as plantation workers in the Tea gardens of the three Hill subdivisions as they were more hardworking and could easily adapt themselves to the mountainous terrain and climate of the three hill subdivisions in comparison to the plains people.

The push factor which operated from Nepal that lead to massive Nepali migration to Darjeeling and adjoining areas was due to the ascendancy of Prithvinarayan Shah , the founder of Gorkha dynasty in Kathmandu in the second half of 18th century that caused socio-economic tensions inside Nepal as the King imposed repressive measures in order to ensure domination of high caste Nepalese over the Buddhist and other non-Hindu Nepali tribes and communities. The community ownership of land that was practiced in eastern Nepal was banned consequently the landless Nepali communities of eastern Nepal like the Rais, Limbus, Tamangs, Gurungs migrated to adjoining Darjeeling area(Dasgupta 1999).

Along with tea plantations, the prospect of exploiting forest products and opportunities for developing Cinchona plantations on a commercial attracted the Britishers to the forests of Darjeeling and adjoining areas, this required labour force and it attracted mostly Nepali migrants to this new plantation areas.

Thus, the Nepali speaking community emerged as the ethnic dominant group especially in the Hill subdivisions of present Darjeeling District. The present Jalpaiguri district, had sparse settlements inhabited by small communities comprising of the Rajbonshis, Mech, Toto etc. till the introduction of tea plantations in 1874, which by, 1901 had increased to 236 tea plantations ( Jana 2011). The growth of population in the Jalpaiguri/ Doars can be attributed to the growth of tea plantation. In fact the history of growth of population here is the history of migration of population to the different tea plantations. Unlike the Darjeeling area, tribes from Chotanagpur and Santhal Paraganas were the immigrants constituted the workers for the Tea gardens, mainly owned by the European stock. Immigration in this district increased by leaps and bound in the period 1861-1947 (Bhadra & Chakravarthy 1997).

As per the records of 1901 census, the total number of immigrants here was 188223 compared to 143922 immigrants in 1891(Census, 1901), indicating a growth rate of above 30% immigrants over a decade. The migration statement showed that 80836 immigrants were from Ranchi while 10562 immigrants from Santhal Paraganas. (Bhadra & Chakravarthy 1997) In fact 126214 persons born in Ranchi were found to be enumerated in Jalpaiguri area in 1911 census( Thompson 1923).

Consequently besides the Nepali speaking population, tribes from the central Indian tribal belt consisting of Oraons, Mundas, Santhals etc. formed a sizable portion of the population of the Terai and the Doars region of present North Bengal.

The growth of the Tea industry in Darjeeling and Jalpaiguri area, were accompanied with the growth of ancillary economic activities that created a demand for more migrants, which

consisted of a small section of managers and assistant managers of Europeans and Anglo-Indians stock, a class of skilled workers to maintain the offices and accounts comprising mostly of educated Bengali *babus*. A small section of Marwaris, who came basically for trade and commerce.

The development road and rails connecting the now new resource centers to Calcutta attracted migrants from other parts of India too. In fact the widespread extension of rail lines and road communication that exists in present North Bengal can be primarily attributed to the establishment of tea plantations during the colonial phase. The Eastern Bengal Railway, was extended up-to Jalpaiguri in 1878, and within next few months it was connected to Siliguri, that served the newly founded Tea area of North Bengal. The next phase from 1880 onwards saw the development of a series other rail way tracts viz. Siliguri- Darjeeling in 1881. Barnes- Damdim in 1889, Damdim- Odalbari-Bajrakot in 1901-02 and Mal-Chalsa-Chengmari- Madarihat in 1901-03 ( Xaxa- 1985) . This brought in large scale migration from the adjoining Gangetic plains as both skilled as well as unskilled workers were found to be necessary to build and maintain this large communication network.

## Migration during Partition and Post-Independence Period

The location of North Bengal sharing a long international border with the erstwhile East Pakistan, now Bangladesh, repeatedly attracted the Hindu refugees, who were forced to flee their homeland due to religious intolerance and prosecution and took shelter here as they shared a common history, culture and geography with this land across the political borders. The creation of East Pakistan on the sole criterion of religion, out of the then united Bengal led to large migration of people from East Pakistan to adjoining areas of West Bengal. The two districts of North Bengal i.e. Darjeeling and Jalpaiguri emerged as an important destination for the fleeing refugees since it was sparsely settled. The forested tracks were cleared for rehabilitation of the refugees. Continued communal violence and persecution of the Hindu minorities in East Pakistan during the 1950 ' s and 1960 ' s ensured continuous flow of population. Refugee Camps were opened not only in West Bengal but also in Tripura and Assam. Records suggest that in the first three months of 1950s the total number of refugees from East Pakistan was around 150000 but by the end of the year the figure touched nearly 2.1 million( Chakraborty 1999) This unabated flow was intended to be checked in 1952, when both India and Pakistan introduced the pass- port and visa system, this undoubtedly to a certain extent restricted the legal migrants but unofficial flow of population across the ill manned international border continued throughout. It is interesting to note that there is no documented record of the outflow from India to East Pakistan. The next large exodus of the Hindus fleeing East Pakistan occurred during 1964-65, marked by the Indo- Pak war.

The next spike of migration from East Pakistan was felt during the Bangladesh liberation war of 1970 when the population of East Pakistan revolted against the domination of West Pakistan under the leadership of Mr. Mujibur Rehman, the Bangladesh liberation

movement started, this culminated with the attainment of Bangladesh as an independent nation on 16th December, 1971. During the liberation war approximately 10 million people crossed the border and entered India, some of them went back but a majority of them stayed back mostly in West Bengal. Consequently Darjeeling(especially Siliguri subdivision) and Jalpaiguri districts of West Bengal emerged as Bengali dominated areas.

As already mentioned in 1971, the political boundaries of South Asia were redrawn with the emergence of Bangladesh as a new nation and till 1971 migration from present Bangladesh to India was legal (as it was decided by national consensus of all party meeting held in Delhi 1980 that all migrants crossing the border from Bangladesh without any valid documents after 25th March 1971 will be treated as illegal migrants).

## Illegal Migration from Bangladesh

Demographically, Bangladesh is one of the fastest growing countries of the world that has exceptionally high density of population 1015 persons /sq. km (2011census) is emerging as important labor migration source area of the world. As per Bureau of Manpower Employment and training the Bangladesh data suggests that since 1976 at least 8307749 migrant workers have gone abroad from Bangladesh, the primary destination being the Middle Eastern Countries (Joseph& Narendran 2013) apart from the contract labour migrant, cross border mobility is very common. India and Bangladesh shares the longest border of 4096kilometers of which 2216 km lies in the State of West Bengal. Moreover similar culture, ethnic and linguistic commonalities along with historical ties makes this border ideal for migration pathways where India receives most of the migrant flows. It is estimated that about 15 million Bangladeshi Nationals live in India illegally (Datta 2004) Though this migration is a continuous flow yet it has been marked by spikes when political and economic situation in Bangladesh provided the push factors for such migration to occur. The major spikes of illegal Bangladashi migration to the neighboring Indian states in general and Jalpaiguri , Darjeeling Districts of West Bengal were felt in the following phases.

The first phase was just after Mujibur Rehamans assassination on 15th Aug 1975 that continued till 1981 during the regime of Ziaur Rehman, who came into power in 1975

and declared Bangladesh as an Islamic nation. During this phase political instability and lack of safety and security for the minority communities in Bangladesh triggered migration to adjoining Indian territory unfortunately there are no records of the actual number of migrants during this phase (Datta 2004).

The next phase was marked by the rise of Muslim fundamentalism during the regime of Khalida Zia (1991-96) just after the Babri Masjid issue (December 1992) in India a large number of Hindus had to flee to India, as there were a number of arson and violence reportedly committed against the minority communities. Illegal migration from the adjoining Bangladesh still continuous through the porous borders engulfing the North Bengal as well as all the adjoining areas.

Many social scientists including (Datta 1994, Chakraborty 1999, Joseph and Narendran 2013) have made interesting studies on this phenomenon of South-South migration. Samaddar (1999) in his book *Trans border Migration from Bangladesh to West Bengal* has observed that the quantum of illegal migration to India consists of both Hindus and Muslims almost in equal numbers but the Hindus are usually permanent migrants while the Muslims are mainly seasonal or temporary migrants. The Hindus are referred as refugees while the Muslims are termed as infiltrators. It is interesting to note that some of the illegal Bangladeshi migrants possess double citizenship and purchase landed property in border districts where both Darjeeling and Jalpaiguri is located.

## Major Factors behind Illegal Bangladeshi Migration

The main push factors for the Bangladeshi migrants crossing the international border to the Indian territory are political unrest, economic depression, demographic explosion, religious fundamentalism and environmental issues . While the pull factors are economic opportunities, especially due to the development of the agriculture and small scale industries, land reforms in favour of the working marginalized class of people where the migrant labour force of Bangladesh can easily find opportunities for sustaining livelihoods, cultural and linguistic similarities especially similar climatic conditions cordiality and fellow feeling acceptance of the population residing in the border areas of Darjeeling and Jalpaiguri districts . Besides this ill guarded and managed border, the role Middle man who take money to help in the crossing of International Border are important factors which helps in the continuous flow of illegal migration to India.

On the whole, besides the illegal Bangladeshis, immigration from Nepal and Bhutan are also contributing to the growth of population in North Bengal ( Sen 1997) The economic growth of India attracts the Nepali surplus population from Nepal to enter into India in hope of better opportunities. Moreover the Indo Nepal treaty of 1950 helps Nepali migration to India as the Indo- Nepal bilateral friendship treaty recognizes the movement of the citizens of both the countries to move freely without any valid documents. According to recent estimates about 1 million Nepalis are working in India mostly as unskilled seasonal or permanent labourers (Samuel et al 2011). Most of the migrants remit money to their home and visit their homeland regularly. Though most of this migrant section of Nepalese head towards the metropolises of India, which offers lucrative employment opportunities, some of them stays back in Darjeeling and Jalpaiguri districts of North Bengal as they have a cultural affinities with their brethren who had migrated during the earlier period. Besides the cross border migration, North Bengal like rest of Indian states experiences internal migration, where people from rest of India come here in search of employment and business. Further the ethnic strife as experienced by the north Eastern states of India and related insurgency have encouraged internal migration to the neighbouring Darjeeling and Jalpaiguri districts in particular and North Bengal in general.

## Socio- Economic Impact of Migration in Post-Independence Period

The above paragraphs suggest that migration to North Bengal is a continuous process which has both positive and negative implications. It is observed that after Independence the major migrant group was from erstwhile East Pakistan followed by the illegal Bangladeshi migrants whose flow continues till date besides the Nepalis and small section of Nepali origin Bhutanese ( Kapur 2007) . The migrants provide cheap labor especially in the primary sector. It has helped in the development of agriculture where ever the migrants have settled being hardy and laborious have improved production of food and cash crops ( Datta 2004).

The migrants have also cleared forests and developed wastelands. Household industries like Biri making Candle making etc. have benefited from such illegal low skilled cheap labour force but at the same time it has gone against the local workers whose wage level has become more competitive.

Due to immigration the population has increased and along with this various economic activities have improved business has improved leading to the flow of money, it has also given a boom to constructional activities especially in the urban centers of the districts where the cheap unskilled illegal labour force finds employment.

It is interesting to note that most of the immigration population along major communication linkages giving rise to linear settlement found in both the districts (Sen 1997). The unabated migration of both the Bangladeshi and Nepali speaking community have created problems, deforestation is rampant, creating man-animal conflict, land grab is on the rise, illegal occupancy of pavement and railway platforms by undocumented illegal migrants are creating pressure on the natural resources (Datta 2004).

Continuous inflow of migrants are enhancing the pre-existent slums in the Urban areas of the Districts especially Siliguri town where problems of sanitation, housing and water poses serious problems. The border areas are becoming more vulnerable to security risks and different political parties in different period of time gives safeguard to the illegal migrants as they are being used as vote banks.

The indigenous tribal groups are emerging as minorities and the Nepali and Bengali speaking community are emerging as dominant groups. Moreover, the Census reports of 1981 and 1991 indicate that during the decade 1981-1991, the number of Hindus in West Bengal decreased by 2.27 percent while Muslims increased by 2.06 percent With enhancement of socio-economic development as experienced by the two consciousness of the ones rights and political aspiration this in turn has given rise to various political movements and conflicts. Sub-nationalism based on ethic identities are on rise like the Kamtapuri movement, Gorkhaland demand.

## Challenges Ahead

Consequently the region today faces severe challenges, although the exact number of immigrants from Bangladesh and Nepal are not known they have a sizable presence in both the border districts of Darjeeling and Jalpaiguri in North Bengal in particular and India in general. Unlike migration elsewhere ethnic commonalities of Indians with Bangladeshi and Nepali migrants permeate migration with an ethnic dimension which is often a concern as the migrants can co-opt for Indian identity, retain their original identity or become dual citizens. Moreover the ethno-cultural contiguity and continuity gives ample scope for the illegal migrants to relate to both India and their country of origin. Consequently this poses serious challenges as there is no defined social boundary, antisocial activities increases as it becomes easy to commit crimes and cross the porous border without detection.

Moreover the large scale migration from Bangladesh and Nepal are bringing about a demographic change that has security implications. The illegal migrants from especially Bangladesh with multiple identities have given rise to Islamic fundamentalism. In fact a report published in the Netherland, A cocoon of Terror : Review (2003) Religious Radicalism/Terrorism - clearly states that Bangladesh is on the point of threatening the Indian subcontinent and far beyond if left unchallenged , Islamic fundamentalism, religious intolerance, militant groups with links to international terrorist groups , a powerful military with ties to the militants, mushrooming of Islamic schools churning out radical students , middle class apathy, poverty and lawlessness are all combining to transform the nation. (Samuel et al 2010). Further the emergence of Jama- ul- Mujahideen, Bangladesh (JMB) Jagrata Muslim Janata (JMJB), Hirat-Ul Islami Bangladesh (HUJI) fundamentalist groups are making their presence felt in the border districts of India in general and West Bengal in particular, which are emerging as fundamentalist hubs catering to various criminal activities. Consequently the religion based demographic changes in these areas has given rise to Islamic radicalization of jihadi variety, there has been a rapid increase of mosques and madrassas in border areas many set up from Jeddah based Islamic Development Bank ( Hindustan Times 7th Feb. 2002)

## Conclusion

1. It can be observed that North Bengal in general and the Districts of Darjeeling and Jalpaiguri in particular still attract immigrants, the first phase started with Nepali migration to manage the Colonial outpost in Darjeeling. This was followed by setting up of Tea plantations where the managerial staffs were mainly Europeans and Anglo-Indians, but the workers were migrants from adjoining Nepal specially for those gardens set up in the hills. With further expansion of tea gardens in the Doars and Terrai region the workers were recruited from central Indian tribal belt consisting of the Mundas, Oroans, Santhals etc. With the development of communication linkages and business opportunities population from rest of India came to this area, mainly

the Hindu refugees came here which continued unabated till 1952. The next surge of Hindu migrant to this area was felt during the India Pakistan war in 1964-65, followed by the Bangladesh liberation in 1971. After 1971 migration from Bangladesh without legal documents is illegal but this continues where both the Hindus and Muslims are crossing the porous border, but while the Hindus are refugees coming permanently, the Muslims migrants are infiltrators and are mainly seasonal in nature. The location of Darjeeling district bordering Nepal also attracts Nepali migration, however due to the bilateral Indo- Nepal agreement of 1950 the Nepali migration is not illegal. But with increase in the share of Nepali population especially in the Darjeeling, Kurseong and Kalimgpong subdivisions there has been a demand for a Nepali dominated state-Gorkhaland. Thus the history of migration from both Bangladesh and Nepal to both these border Districts in particular are apparently different in their nature, pattern and direction, this is because of their different historical background, geographical variant, ethno-religious affinities, bilateral arrangement and political systems. The immigration has helped in demographic growth and the socio-economic development of the area where wastelands and forested tracks have been converted to resource rich region, but at the same time the unabated illegal migration has brought demographic changes. This change has led to marginalization of the ethnic community. Moreover, since the ethnic community has not been able to compete with more advanced migrants, there has been loss of livelihood and further pauperization and many of them today has migrated to other parts of the country in search of better employment prospects in non-skilled sectors. In future, with general deteriorations in political set up in the neighboring countries we can expect more migration to continue.

2. The increase in migrant population has led to political aspirations and for instance with increase in Nepali population in the Darjeeling the demand for Gorkhaland has gained momentum in the last few decades. The increase in Bengali population has led to formation of radical organization such as Amra Bangalee, demands for Virat Bangla etc. The indigenous population with fear of being swamped by migrants has demanded creation of Kamatapur. These demands have led fluidity in political situation and have proved to be threat to maintenance of peace and order by administration. Given the strategic location of North Bengal and its proximity to not only Bangladesh, Nepal, Bhutan but also China, such kind of constitutional as well as extra constitutional movement may pose a threat to the safety and security of the country as foreign power may try to gain hold in the region through disgruntled elements involved in such movements.

3. The presence of large number of unemployed youths as due to lack of industrialization and low economic development in comparison with other parts of India, may attract these frustrated youths to join any movement against the state. This area may prove to be fertile ground for recruitment of cadres to fundamentalist and insurgent groups, under the influence of foreign powers and its agencies which are just too eager to do anything to destabilize the nation.

4. The largely ill managed international boundaries overlapping the social boundaries may give enough scope to indulge freely in criminal activities in the region such human trafficking, drugs and contraband dealings, illegal arms maintenance of order and good economy. It can become easy for the criminal to run across the borders of nations without being detected.

5. The continued influx may prove to be disastrous to the environment of the region. The rising population leads to deforestation as demand of land for settlement and agricultural practices increases leading to changes in land use pattern. In a fragile ecological set-up like the Himalayan tract leads to increasing rates of landslides, mass wasting etc. which leaves its detrimental impact on livelihood of the hill people. In the plains unabated increase in population results to shrinkages of forest cover, loss of flora and faunas and also increase in man-animal conflicts.

Consequently the challenges faced by North Bengal due to its location and due immigration from both Bangladesh and Nepal are multifarious and common sense dictates that India's border with both Bangladesh and Nepal needs to be regulated. The borders needs to better managed and monitored. The entire policy on unregulated entry of migrants from neighboring countries needs to be re-examined in context of the security threat to the nation as well as protection of indigenous minorities. There has to be acceleration in the economic development of the region but India as a big brother has to take an extra interest in the economic development of both Bangladesh and Nepal to contain the influx of poor economic migrants. The region is important area of bio-diversity and policies needs to be adopted to conserve both flora and faunas. This area has been home to several small indigenous tribes, with their unique culture and traditions, every measures should be taken to maintain their distinct identities.

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# INDIA AND SOUTH CHINA SEA

**Dr. Munmun Majumdar**

## ABSTRACT

*The article looks at India's interest in the South China Sea (SCS) that occupies a significant geostrategic position. Although India does not claim any part of the area, it has vital maritime interest in the SCS. India has as interest in protecting the sea-lanes that run through the area, as it considers open and stable maritime commons essential to international trade and security. India increasing involvement in the SCS illustrates India's strategy in seeking to promote and protect its interest. While China's tendency to unilaterally seek to alter the status quo progressively pushes India to strive hard to protect its national interest in the freedom of navigation, access to maritime resources and respect for international law in the SCS.*

**Keywords:** South China Sea, India, China, ASEAN, Indo-Pacific.

## Introduction

The maritime security in the Indian Ocean-Pacific Ocean continuum has acquired a new salience following the shift in the arena of action from the Atlantic. Accordingly, the Indo Pacific region has brought the focus to the developments including trade, resources and energy lifelines that run across it. The emerging power equations marked by an assertive China, a rising India, a resurgent Japan, together with the role of the United States and the US-led alliance system in upholding the regional order, the challenge that China poses to the regional order, all together make for a potentially stormy region. Consequently, new challenges and opportunities have opened up which are compounded by the traditional and non- traditional threats that plague the region.

Given China's strategic isolation in maritime Asia, Beijing's fundamental strategy consists of two interrelated approaches. The first is to seek any opportunity to bind, circumvent, exclude or else bypass the U.S. The second is to reorganize strategic relations and diplomatic negotiations such that the U.S. is excluded, and countries are channeled into dealing bilaterally with China. This helps China to play to its strength as the largest, fastest growing and arguably most powerful Asian nation in the region. The regional states' response to the evolving strategic environment in the Indo-Pacific (which includes China's growing naval power) has manifested itself in individual maritime strategies. As it happens, these maritime strategies are as much affected by the process of norm making currently underway as by China's growing naval assertiveness. It is in this aforesaid context that the developments in the South China Sea and India's position are of relevance.

As a semi-enclosed sea as defined in Article 122 of the UN Convention on the International Law of the Sea (UNCLOS), the South china Sea hosts numerous islets and reefs as well as abundant living and non-living marine resources. It also provides key sea routes for maritime shipping and naval mobility and is traversed by a quarter of global shipping. It is an important economic and strategic sub-region of the Indo-Pacific that carries the bulk of international trade as well as provides crucial lifelines of energy and resource supplies. Stretching from Singapore and the Strait of Malacca in the southwest to the Strait of Taiwan in the northeast, the SCS is one of the most important trade routes in the world. It is bounded by the coast of Asia from Ca Mau, the southern tip of Vietnam, to Taiwan Strait, the southwest coast of Taiwan and the west coast of the Philippines to Balabac Island, the north coast of Sabah and the coast of Brunei and Sarawak, the northern façade of Indonesia's Kepulauan Natuna and the north coast of peninsular Malaysia. Because of its important strategic location and abundant resources, it becomes a target of contention between/among bordering countries. The disputes in the SCS are regarded as one of the most difficult regional conflicts in the Asia Pacific.[1]

There are overlapping claims made by China, Vietnam, Malaysia, Brunei, the Philippines, and Taiwan[2] to the Sovereignty over the islands and reefs as well as, other outlying islands and islets are disputed and maritime jurisdictional disputes relating to maritime claims exists. The current round of tensions in the South China Sea can be traced to the 2009 joint submission to the United Nations by Vietnam and Malaysia of a section of their extended continental shelves in the area.[3] China responded by submitting an objection to the UN Commission on the Limits of the Continental Shelf (CLCS) decrying Vietnamese and Malaysian infringement of its claims, which it defined via an ambiguous map that encompassed nearly the entire sea.[4]

Notwithstanding China's ratification of UNCLOS, the Chinese claim, articulated to the UN in 2009 but extending back to the 15th century, is by far the most extensive and provocative.[5] Beijing has dusted off a 1947 so-called "nine-dash line" map, published by the Chinese Ministry of the Interior in the Nationalist era. It is often referred to as the 'nine dash line' claim, as it comprises nine dashes that encircle islands, waters, and other features of the South China Sea encompassing approximately 2,000,000 square kilometers of maritime space.[6] China while asserting that it has indisputable sovereignty over the SCS and the islands[7] is using a range of diplomatic, economic and military levers to strengthen its position in the SCS against the other claimants. [8] Since 2009 China is becoming more rigorous in its enforcement of existing claims. [9] It has seized islands well within the exclusive economic zones (EEZs) of neighboring Southeast Asian Nations, detaining fishing boats and confiscated their catch, cut cables of ships engaged in oil exploration, harassed American surveillance vessels, and most recently undertaken reclamation of subsurface islets in order to construct airstrips and harbors. Apart from the fact that it lays historical claim to vast swathes of the region including the reefs and islands the construction work

being undertaken in the artificially constructed islands is essentially a further assertion of sovereign claims, and unilateralism, which go against the spirit of the 2002 "Declaration on the Conduct of Parties in the South China Sea"(DOC). In the process, China has also ignored the dispute resolution mechanisms of the UN Law of the Sea Convention, to which it is a signatory. It is showing little interest in reaching agreement with ASEAN for a code of conduct in the South China Sea.

China's soft power approach towards Southeast Asia runs parallel to its hard power attitude in the South China Sea. By being hard on one hand and soft with the other, China is able to extract maximum gain from its dealings with Southeast Asia. It is arguably able to reap the benefits of increased economic ties with its ASEAN neighbors, while not compromising on the South China Sea issue. All countries in the region are alarmed over the contentious handling of China's South China Sea maritime territorial claims. So far they are engaged in the use of tacit, informal and institution-based approaches to raise the collective/political diplomatic costs on China of its behavior and assertiveness. An example would be the reliance of many Southeast Asian countries on ASEAN mechanisms and norms, and the continued support for a binding Code of Conduct in the South China Sea. However, more than three decades of ASEAN's attempt to persuade China to abide by a normative framework for state behaviors in the South China Sea have been not been able to check China's assertive actions in the SCS. And the ASEAN countries are confronted with the challenge of striking a balance between their national interests and regional interests.

The SCS is not only a critical flashpoint but is also a litmus test of China's relations with ASEAN and its member states, being a conflict embedded in, and a manifestation of, overarching relations. China's actions therefore have a bearing on the conflict management process between ASEAN and China in the SCS. As the rapid rise of People's Liberation Army Navy (PLAN) begins to manifest itself in the growing number of incidents in the South China Sea, the East China Sea and elsewhere, it is being increasingly asked: what are China's motivations to modernize and how does it prioritize its modernization?

## India's Position

Although India is not a claimant state, it has interests at stake. China's sustained military build-up, its anti-access/area-denial (or A2/AD) capabilities and its assertiveness in the East and South China Seas[10] are causing the Indian government to look beyond specific threats to it and to consider risks to broader regional stability as a result of China's rise. India's naval planning and strategy has to contend with a number of challenges given the impact of military transformation, regional naval modernization, with the growing fleet strength and capabilities of China's Navy in South China Sea adding a new strategic dimension. India therefore, views with caution Chinese creeping maritime assertiveness, supported by its modernized and capable navy and marine paramilitary units.

India's interest in the SCS have been articulated by several Indian policy makers who emphasized freedom of navigation in the SCS, as India considers unimpeded right of free passage in accordance to international law, as essential for peace and prosperity in the Asia pacific region. India's position on maritime matters had been stated earlier by the external affairs minister at the ARF meeting in July 2013, that essentially highlighted the following points: opposition to the use or threat of use of force, adherence to the 2002 Declaration on Conduct in the South China Sea and peaceful resolution of disputes, in accordance with international law, including the 1982 UNCLOS.

However, India's does not have any territorial interest in the SCS area. Its dependence on the security of the Indian Ocean has compelled it to reach out beyond its own littoral. The entire Indian Ocean region stretching from east African coast to the waters of the SCS is critical for India's foreign trade, energy and national security interests. More than 55% of India's trade with the Asia pacific passes through the SCS. The significant dependence of India's trade on maritime traffic gives the sea a substantial influence on its destiny.[11] As such protection of the sea-lanes has become a fundamental feature of India's engagement with the countries of Southeast Asia and beyond.

India also recognizes the strategic importance of Southeast Asia particularly because several Indian islands territories are as close as 90 miles from the Strait of Malacca. Another reason that explains Indian interest in the area are that it is worried about the way in which China has moved unilaterally to strengthen its hold in the SCS, which could enable it to exert unlawful coercive measures against smaller nations who are seeking to avoid domination by China. India is worried that if China controls this sea space it will dictate maritime traffic, both civilian and military. It is therefore rightly worried that China will use its growing maritime might to dominate not only the resource-rich waters of the SCS but also the crucial shipping lanes. In July 22, 2011 INS Airavat was accosted by an unidentified Chinese warship (in the South China Sea 45 nautical miles off Vietnam's Nha Trang port), which asked it to identify itself. It was a clear signal (or warning) that China does not want any foreign vessel in what it regards as its sovereign maritime domain. India's priority is therefore, to maintain freedom of navigation in the sea for both merchant and naval ships, thus protecting the sea-lanes as it considers open and stable maritime commons essential to international trade and prosperity. Again China objected to oil exploration by India's public sector company, Oil and Natural gas Commission Videsh (OVL) in Vietnam's territorial waters. These incidents have provided further impetus to New Delhi to deepen its engagements with the SCS littoral states in order to commercially participate in the exploration of vital energy resources. More so, since India also views the SCS region as a key to its energy security and any major conflict in the region is bound to impact Indian economic and strategic interests, which it cannot allow. Hence, India would like to maintain its presence in the SCS to track potential developments that could affect its national interest.

The Indian navy has underlined the importance of a forward maritime presence and sees naval partnership as critical to deter potential adversaries. Additionally, India would like to have a voice in major regional security issues that confers prestige commensurate with its regional power status. Furthermore, involvement in the SCS could have implications on other territorial disputes. Particularly because it has unsettled borders with China in the Himalayas and therefore China's assertiveness in the SCS is troubling for India. Hence, interest in the SCS is not only about legality or historical pride but also pragmatism.

India has been calling for the peaceful resolution of dispute between Beijing and its maritime neighbors, with whom it has conflicting claims in accordance with international law, including the United Convention on the Law of the Sea.[12] India hoped that the parties to the dispute would abide by the 2002 Declaration on the Conduct of Parties (DoC) in the SCS and work towards the adoption of the Code of Conduct (CoC). The 2015 release of high-definition satellite imagery revealing the full extent of China's island building in the Spratlys, transforming submerged or semi-submerged features and rocks into artificial islands, reinforced the urgent need for the international community, including India, to rise up and address the situation.

In the past India has been overly cautious about increasing its interest in the Western Pacific. Recent developments under the Modi Government, however, hint at a greater political will in playing a part in shaping the changing security architecture. At the 2014, India-ASEAN and East Asia Summits, Indian officials emphasized freedom of navigation, peaceful resolution of disputes, and importance of international law. In Sept 2014, India and Vietnam issued a joint communiqué opposing threats to freedom of navigation and use of coercion in the SCS.

In boosting defence ties, India is also focusing on strengthening its maritime partnerships with the navies of the region such as Australia, Japan, Singapore and Vietnam. Recognizing the strategic significance of Southeast Asia and the Indian Ocean for the defense of the Indian peninsula, India has been seeking to further its strategic goals by developing ties with ASEAN countries bordering the SCS. For example Hanoi has welcomed India's naval forays into the SCS since 2000 and has offered regular access to its port facilities. The nature of India's partnership with the ASEAN countries, however, varies from country to country bilaterally as well as regionally. What must be understood clearly is that India's relationships with South East Asian countries are not geared only towards checking the Chinese presence in the region, but also reflective of India's global interests.

India offered a US$ 100 million line of credit to Vietnam, which was re-iterated during the visit of the Vietnamese Prime Minister Nguyen Tan Dung to Delhi in October 2014. Hanoi in turn is looking to use the credit to buy new naval vessels from New Delhi in an effort to strengthen its maritime defence in the South China Sea. China's insistence that essentially all the waters in the South China Sea fall within its jurisdiction, without

providing any legal rationale, has led to several disputes over oil and gas concessions. Under the leadership of Modi, the new government has been able to exert renewed its interest in maritime security and has recognised the need to be involved in shaping the changing security architecture of the Indo- Pacific.

The joint statement at the end of Modi's visit to the US in September 2014 was of great significance both for the reason that for the first time India made a direct comment on dispute resolution in the South China Sea and that it was in a joint statement with Washington. The statement read: "The leaders expressed concern about rising tensions over maritime territorial disputes, and affirmed the importance of safeguarding maritime security and ensuring freedom of navigation and over-flight throughout the region, especially in the South China Sea". The statement also urges all parties to resolve the dispute in a peaceful manner in accordance with international law, drawing criticisms from Beijing. In September and January 2015, PM Narendra Modi and US President Barack Obama jointly affirmed common interests in the disputed SCS and in June 2015, India and the US also signed a defence framework.[13]

In addition to strengthening relations with the United Sates, Asian countries are also expanding their ties with one another. For example, Japan and India have also upgraded bilateral defence ties and have pledged to enhance cooperation, especially in the realm of maritime security. To that end, the two countries held the first purely bilateral joint naval exercise off the Bay of Tokyo in June 2012. Japan, Australia, and ASEAN members increasingly seek after India with its Look/Act East policy recast by PM Modi as Act east policy and blue water naval power.

One of Modi's first overseas visits was to Japan, an important player in the Indo-Pacific and embroiled in a potentially dangerous dispute with Beijing over the East China Sea. The Tokyo Declaration at the end of the visit on 3 September 2014 "attached importance to the regularization of bilateral maritime exercises as well as to Japan's continued participation in India - US Malabar series of exercises". New Delhi invited Japan to participate in the Malabar Exercises -- the annual U.S.- India joint naval exercises. The trilateral exercises in the Western Pacific have raised some concerns in Beijing. Furthermore, when the Vietnamese Prime Minister paid an official visit to India, the South China Sea was mentioned once again in their joint statement Beijing's angst became even more evident. The statement had called for freedom of navigation through the South China Sea and urged all disputing parties to work toward the implementation of the Code of Conduct. As tension in the South China Sea continues to rise, countries like Vietnam and the Philippines are increasingly looking toward other regional powers to increase and maintain their interest in the Western Pacific.[14] With growing India-Vietnam defence ties, Hanoi in particular is keen on India's presence in the region, be it for economic or strategic reasons.

Current developments suggest that New Delhi is more willing to listen to its ASEAN friends. Prime Minister Narendra Modi's maiden presence at the 9th East Asia Summit and the 12th India-ASEAN summit in Myanmar provided a glimpse into India's willingness to be involved in regional security issues beyond its shores. [15] Mr. Modi again emphasized the need to stabilize the South China Sea in the 12th India-ASEAN Summit and the 9th East Asia Summit in Myanmar. At both forums Mr. Modi stressed the need to follow international norms to maintain peace and stability in the South China Sea, a comment directed at China.[16]

India's repeated mention of the South China Sea in joint statements is definitely a shift from its previous statements on maritime security. Although New Delhi has previously remarked on the need to ensure maritime security and freedom of navigation in the region, it has never named any country or an area in dispute. What is of significance is India's choice of platforms in making these comments. Similarly, the joint statement with Vietnam is a re-assurance to one of India's closest friend in the Southeast Asia engaged in a sharp dispute with China. Modi also met with the leaders of the Philippines and Japan -- two other nations in dispute with China in the East China and the South China seas -- signaling a greater willingness to play an active role in regional security. Beijing is mostly wary of such actions as it opposes the internationalization of the disputes in the contested waters, continuously warning other nations from engaging in the region.

There is no doubt that New Delhi's interest in the Asia Pacific region is growing. India is looking to collaborate with the countries of the region at both economic and defence levels. However, India has been unable to meet the expectations of its ASEAN friends, who more often than not complain about New Delhi not 'doing enough' in the security domain. With the Look East Policy gaining momentum as "Act East", the current government's initiatives point in the right direction without any form of engagement directed at containing China while emphasizing on its economic interests; concern for stability on its periphery; and its aspiration for peace in the larger context of the evolving East Asian regional architecture.

## Conclusion

The challenge for India is to be able to deal with the rise of a hegemonic China, while keeping its own growth trajectory intact, and contend with hurdles like border disputes. While establishing India's maritime interest in the SCS, New Delhi is also determined to work towards cooperative and rule-based security architecture in the region that would in turn enhance regional and global security. It could be a valuable partner to the ASEAN countries only if it can sustain its growth, maritime capabilities, and evolve proactive policies to influence regional developments. While the parties to the conflict in turn could make a positive contribution to peace and stability in the South China Sea region if they pledge to adhere to the principles of international law, particularly to the 1982 Law of the Sea Convention.

**(Endnotes)**

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# BRAHMAPUTRA LORE IN SATTRAS AND SOCIAL PRACTICE

**Shantana Saikia**

## ABSTRACT

*To reiterate the role played by the magnificent 'Son of Brahma' in shaping the identity of the Assamese would be a truism. The river Brahmaputra has been sung and historicized, revered and feared so much so that it cuts beyond its natural landscape to enter into a socially constructed cultural landscape; its mythical and deified status upheld by various belief narratives and associated rituals also secure a place for the river in the realm of folkloric landscape. This paper is based on primary data collected during the course of fieldwork in the vaishnavite sattra institutions of Assam located in the island of Majuli. I would attempt here to show how folklore materials associated with the river allow it to move beyond its metaphorical abstraction to enter into actual social and religious practices in these monotheistic institutions and foster a relationship with the people of this flood ravaged and erosion prone island.*

**Key Words:** Satras, Brahmaputra, Lore, Society, Assam

### Introduction

*"You can never beat the river, never overpower it; it will always be stronger than you but you can reach a distinct and important balance where you work with the flow of the river"(Medel2011:5).*

*"Brahmaputra and our sattra share a very special relationship. It will never harm us or anybody who has faith in us".* (Rupam Shastri in personal conversation)

...Two different narratives from two different cultures, two different contexts and from persons belonging to two different strata of society. The first view is collected from an interesting thesis on American waterways and environmental discourse and the researcher's personal experience in a turbulent river. The second is collected from a celibate monk from a sattra in the riverine island of Majuli in Assam. Linguistically, the focal point of both is the personification of the rivers and secondly, the culturally understood and transmitted value of respect and balance. The second observation also has several narratives to support it. This paper is based on this culturally understood premise which is often a metaphorical turn of folk wisdom on man/nature relationship.

In every culture the natural landscape is often converted into cultural landscape for obvious reasons. Man depends upon nature for sustenance. The earth is the mother earth, the

skies, the father and human beings are the children. The personification and identification thus begin in the macrocosm before moving into the microcosm of locales. The apparently static mountains personify and also test human endurance and ambition. Mountains are to be climbed and conquered but trying to conquer rivers would only bring disaster. Flowing rivers are the life of a people carrying in their streams histories, heroism, loss and conquest of a culture, investing or divesting them of identities that are constantly worked and reworked to suit the changing times. The river discourse, therefore, is always polyphonic.

In India, as in most cultures, rivers are often given a mythical exegesis. Rivers are worshipped as they are of divine origin. They are propitiated and revered. Association of water with religion has been noticed by religious scholars. Rudhardt (2005) comments, "Water is often central to religious cosmogony, can be understood as a manifestation of the divine or governed by divine beings... Water may also be considered a source of wisdom or mysterious, cathartic power, or conversely, a force in opposition to divine purposes and in need of subjugation..."(see Taylor 2007: 864). Ancient Religious philosophy of India venerated this life giving force of rivers. *Nadistuti* found in the Rigveda is in propitiation of the spirit of water. The myth of *Matsya Avatara* found in the Purnanas and Mahabharata, translated by Prof Monier Williams share similar accounts of destruction and regeneration.

It has been long accepted that myths have social functions (Malinowski: 1948). The Old Testament carries the story of Noah and the flood which is read as punishment of evil and grace for the good. It is also imbued with the metaphor of man's understanding of forces of destruction and creation. Such sacred narratives associated with nature contain discourses that also function to shape social structures and institutions (Swami2003:116, See Arpita 2014). Besides myths, it is also seen that legends and other genres of oral narratives which are more culture specific, function in several ways to uphold or subvert cultural idioms over time.

The river Brahmaputra, as the name suggests shares this mythical origin. As the divine son of Brahma and Amogha, the saint Shantanu's chaste wife, the river was created for the express purpose of bringing welfare to mankind, which it does. It is also associated with the myth of Parashuram and the creation of the *Parshuram Kund*, where all sins are washed away. It is the river where a dip in *Ashokastami* cleanses the soul and immersing of the *asthi*, ascertains a place in heaven for the dead. The religious dimension of the river is therefore always at the foreground of Assamese consciousness. Yet, beyond the mythic, Brahmaputra is also the '*old man river*', the *burhaluit*, drawing a more immediate kinship with its people. As a cultural metaphor, Brahmaputra is the agent of heroism, bearing testimony of the loyalty and endurance of Joymoti, the valour of Lachit and in nearer times investing heroism to the youths of its valley who '*do not fear death*'. The river thus is the bearer of cultural memory. On the factual side, it makes the lush cultivation flourish, nurtures flora and fauna, promotes trade and transport but it is also precarious, unpredictable, washing away vast tracts of land and homestead, enacting the roles of the giver and the destroyer. As D. Arpita (2014:52)

comments in another context, the Brahmaputra thus, "enters into an unending dialectic *with human history... intertwined in an ongoing spiral of challenge-* response- challenge *where neither nature nor humanity ever has absolute sovereign authority.*"

This man /river relationship has been recorded in several folklore genres and reflects popular folk concerns. A rich legendry on the rivers exists among all communities and occupational groups directly dependent on the river. These narratives are more intimate and have a more immediate function than the distant cosmological myths.

In this paper I will attempt to discuss five legends associated with the river and the Neo Vaishnavite institutions of sattras and trace their sociological function with their psychological undertones, at times hegemonic and at others, subversive. The legends express experiential events intertwining religious and social significance and may be studied using a phenomenological approach. The narratives are collected from primary sources and their contextual narrating also reflects the world view of the community to whose corpus they belong. Therefore, the emic approach is followed as far as possible. Further, although Brahmaputra lore is found in the legendry of most sattras, this paper concentrates on only the legends collected from the flood ravaged and erosion prone riverine island of Majuli.

## Introducing Majuli

The island of Majuli is situated at a distance of about three hundred kilometres to the east of Guwahati. Although it is regarded an island on the Brahmaputra, it is situated at the confluence of three river systems, Subansiri, Kherkutia xuti and the main Brahmaputra river. It faces erosion not only from the Brahmaputra but also the Subansiri river to its north. The extremely braided nature of the Brahmaputra is a source of severe erosion and the island faces severe bank line erosion causing a dramatic loss of land mass. The land area as evidenced till 1966-1975, 1998 and 2008 were 706.14, 578.38 and 484.34km$^2$ respectively ( Gogoi and Borpujari 2004), calling attention to its need for immediate help.

Majuli is known for its rich biodiversity and admixture of tribal and other ethnic groups. The richest attraction of this island, however are the sattras, the Neo Vaishnavite Seats of socio- religious institutions. Folklore has it that Majuli was the designated place of Krishna worship by the God himself as he flew over it with his beloved Rukmini. It is customary in the island to wake up to the resonance of Kettle drums followed by the mellifluous sound of hymns being sung in the sattra prayer halls called the *kirtanghars*. The grip of sattras on the social life of the island is so great that they act as moral guardians and often legal arbitrators. Originally the island is said to have housed more than one hundred and fifty sattras of which only twenty six remain, the rest being in the bosom of the mighty river. However, before delving into the sattra- river relationship, it would be pertinent to briefly discuss these institutions.

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## Sattras

Sattras are religious monastic institutions set up from 16th century onwards and associated with the name of Srimanta Sankardev, (1449- 1569), the Bhakti saint, poet, social reformer, dramatist, lyricist, musician-composer, translator- in short a multifarious personality. These institutions are a collective of believers, married or celibate who live in a commune and follow a distinctive lifestyle. They are complex socio- religious structures who preach the worship of a single Godhead, Vishnu and his incarnated forms, particularly Krishna. More than nine hundred sattras are spread across Assam and together they form the dominant religious body of Assam, particularly in the Brahmaputra valley.

Sankardev brought a fresh understanding of the Bhakti principles basing his teachings on the Bhagavata Purana. Like the Bhakti movement in the rest of India, Sankardev's faith also moved beyond the religious to encompass a social equality and decried all forms of religious or social bigotry. He made the scriptures accessible to the common man by simplifying and translating them into Assamese and having them performed through the media of dance, music, pageants and tried to bring his faith based on equality to a fractured society. Orality was the hall mark of his preaching and congregations of folk would listen and imbibe the scriptures by listening and participating in the singing. Originally these congregations of devotees were known as the sattras. However, gradually the term became inclusive of an enclosed physical structure where a group of devotees reside and have a distinct gradation of officials led by a preceptor, his advisers to the common ranks of lay devotees. All devotees called *bhakats* are proficient in one art form, be it dance, vocal or instrumental recital.

Certain prominent features like the unique life style, behavioural patterns and linguistic variations become the identifying markers of these *bhakats* as a community within the larger Assamese community. Further, the sattras also came to follow a tacit intra- hierarchy which move beyond the religious gradation to form the societal gradation of rank, class and caste.

Sattras are powerful institutions. Officially, they define the cultural face of Assam and stand as the symbol of our culture and cultural unity (Neog1969:34). Apart from this, sattras often provide economic, social, religious and moral guidance and are the pivot around which much of the social and ethical life of the people revolves. Taking all these factors into account, Narayan Deva Goswami, a Vaisnava scholar and a *sattradhikār*, calls a sattra a university (Deva Goswami2005:1).

Post Sankardev, the sattras have zealously functioned as the custodians of the religious precepts and cultural treasure left behind by the saint and making the sattriya dance and music a part of their daily religious practice. It is interesting also to note that the concept of sattra as an institution associated with the Bhakti Movement is found nowhere else in India.

## Sattra and Brahmaputra Legends

Dominant folklore in Majuli entwine the sattras and the river Brahmaputra in a symbiotic relationship and impacts upon the psyche of the islanders to such an extent that the classical religious precepts of the sattras and the folk religious wisdom centred around the river not only coexist but are merged to negate the differentiating line of the folk/ classical or little/ great traditions. The islanders share an almost personal relationship with the Brahmaputra and regard it as a deity who needs to be propitiated, a function which the sattras like Dakhinpat undertake on behalf of the people. The rich Brahmaputra legendry sharing common motifs found in most sattras assert their unique relation with the river. This legendry can be studied for their various purposes; for instance, for the common folk they provide the much needed psychological succour; their faith in the power of the sattras to save them from the wrath of the river. At the same time, they also work out the tensions within the sattras and invest in them a hallowed status which helps in their sustenance and survival in these cynical times. Thus, these legends stride from the religious to the social.

To return to the aforementioned Dakhinpat sattra, one of the oldest in Majuli, a veritable treasure of Brahmaputra lore can be found here. The most popular being the dream instruction to the *sattradhikar* sometime in the 1930s. As narrated by a *bhakat*, Rupam Shashtri, the river appeared to the *sattradhikar* in his dreams and instructed him to compose a pageant on the life Shri Krishna and have it performed as that would appease the river's wrath. This instruction is believed to have begun the beautiful tradition of performing the musical *Raaslila*. Interestingly, Dakhinpat sattra has also begun the propitiating ritual of Brahmaputra puja, safely adjusting it with the precept of the worship of a single Godhead. Besides, the belief in the personal relationship of the sattra and the river is so firmly embedded in the psyche of the islanders that the *sattardhikar* is often invited to erosion prone areas to perform his puja as the river deity would listen to him. The statistical evidence or the veracity of the claim does not hold water here.

A narrative collected from Kamalabari sattra recounts how the sattra was being eroded by the river and had to shift out of the island around 1972. As the *bhakats* narrated, their agricultural lands, residences except on the eastern side were being washed away so fast that a structure which stood in the morning, disappeared by afternoon. Meanwhile, the Government had allotted them 50 *bigha* of land in Titabor, a dry land. The sattra prepared to move with a heavy heart. However, the eastern side which housed the prayer hall remained untouched. The river would break against the land and recede. Finally, the preceptor lit an earthen lamp and with an offering of betel nut and leaf floated them on the river praying the deity to take the prayer hall into its bosom before dogs and jackals defiled it. The structure was gone the next morning!

Another legend regarding the same sattra has it that many years before it was removed to its new location, Brahmaputra had helped them to build the *kirtanghar*. As the narrator

said, "The *kirtanghar* was in poor condition with most of the wooden pillars rotting away. The *bhakats* did not have the resources to rebuild such a huge structure. One night one of our *bhakats* had a dream. Brahmaputra appeared to him and told him to cut a stream from the river to the sattra. The next morning all the *bhakats* worked together and dug the waterway from the main river to the sattra, A few nights later everyone was awakened by a deafeningly roaring sound. Afraid, no one came out. At dawn they came out and saw lying there, on the bank of the stream, huge logs of scented basil wood. These logs were utilized in constructing the *kirtanghar*". When they shifted, they brought along a single piece as a mark of evidence.

This legend has two versions. In the *sattradhikar's* version, the dream instruction had come to his predecessor while the *bhakats* insist the dream instruction had come to them thereby claiming a stake in the power- relationship of the sattra/ river.

A personal conversation with a respected Sattriya scholar Drona Bhagawati originally from Majuli and based in Guwahati now, echoed similar sentiments. As I sat discussing the powers of Dakhinpat Sattra sometime in 2010, he asserted that it was true and sattras have had a sacred compact with the river for more than three hundred years now. "The river deity respects the sanctity of the sattras as we respect his course". Our sattra, Garamur, was set up due to his generosity. Our founder ancestor had not found a suitable place to set up his sattra and prayed to the river to give him a piece of land. The next day, the river changed its course and dry land appeared and our sattra was established.

The final legend included in this paper does not belong to the sattra corpus but was narrated by a raconteur from the tribal Mishing community. Auniati sattra, one of the largest and oldest sattras of Assam and a part of this lore, has faced the wrath of the river most, it is said. The narrative given is one of the reasons as believed by many from the Mishing community. According to this legend, Brahmaputra had fallen in love with one of their girls and had left a gold necklace for her. But the *sattradhikar* of Auniati came to bathe in the river and finding the necklace, he took it with him not knowing who it was meant for. Brahmaputra appeared in his dreams and told him to return it immediately but before he could do something about it, the *sattradhikar* passed away. The problem was, he didn't tell anyone where he had kept it. Now, the river keeps chasing the sattra and its fury will not abate until he finds it.... *"It's not that the river does not care for us..."*., he added, as an afterthought.

In the Introduction to the '*Text, Play and Story: The construction and reconstruction of self and society*', E.M. Bruner had said, "Stories must be seen as rooted in society and as experienced and performed by individuals in cultural settings." (Bruner1984:3) These narratives too can be taken as indices to sattra world view and elicit political, social and individual discourses. First, these legends except the last, can be regarded as '*in-house legends*' as they belong to an institutional corpus and contain thematic similarity. The intimate relationship of sattras and the river shroud them in an aura that does not extend to the islanders. This can again be understood in two ways; First, people's realization that the

mighty Brahmaputra recognizes the sacrality of the sattras. The river is seen in its duality as a provider and a destroyer. It provides land and wood for their construction and would not touch the sacred spaces until specifically asked to. The belief factor involved in the narratives preserves a sense of security among the islands. As a young man from the island had said brightly, "*Oh! We will go on... the sattras will protect us.*"

Secondly, the *sattradhikars* by becoming the mediators between culture and nature are able to maintain the hegemonic foundations of their offices in these sceptical times where faith in religious authority is being constantly eroded by secular, educated minds. Besides, the elaborate rituals performed at specific eroded points by the preceptor with sacred music playing at the background and with a large gathering may also help in alleviating the tensions and anxieties that the river wrecks on the psyche of the people.

The narrative of the river Brahmaputra and Dakhinpat sattra is also a charter for celebration of the *Raslila* which has imparted a unique identity to the island. The musical drama which showcases Krishna's life from his birth to the great dance with *gopis* called the *maharas*, is not confined to this sattra alone but has moved out to the rest of Assam. The musical attracts hordes of tourists and in recent times, dancers from abroad who have begun training in the sattriya dance forms participate in the island's pageant. This has not only boosted tourism, made Sankardev' teachings and cultural treasure globally circulated but also created a concerned body that has raised voice about the island's safety. The narratives, thus, perform multifarious tasks.

On the flip side, the *bhakat's* narrative and the story of Brahmaputra's necklace are subtle subversion of the authority of the preceptors. It is unfortunate that *bhakats* of sattras who regularly practice the art forms and in reality are the custodians of this rich heritage are often at the margin of sattra authority. Brahmaputra's dream information regarding the construction of the most important part of the Sattra, its *kirtanghar,* allows a stake for them in the sattra management, however rhetorical. In the tale of the Mishing person, I had found his afterthought more illuminating than the legend itself. The stressful caste dynamics are also worked out in this narrative. The personified river then works out several issues and provides an impetus to people's conceptualization of not only their natural environment but also their social environment and religious folklore genres, as Ulo Valk (2007) points out, forms the border zone in which the social world of human and mystical world of deities are merged into one textual space of mutual interaction.

## Afterword

The sattra Auniati has shifted five times within the island. The changed course of the river has almost uncannily followed the sattra. Ananda Hazarika, an Associate Professor of Geography in Majuli College, had expressed the fear that the river is gradually changing course and if it breaches the dyke in Kamalabari, the sattra will be in trouble again. Dakhinpat

Sattra in the east is only about three kilometres away from the river but has not been eroded for more than thirty years now. Hazarika opines that between the sattra and the river is the Bessamora village of potters where the soil is clayey and that perhaps could be a reason for the safety of the sattra. The islanders, however, remain convinced of the sattra's supernatural powers. This sattra incidentally is the most traditional one and inspires mass reverence.

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# EMERGING FINANCIAL TECHNOLOGY TRENDS UNDER DIGITAL SERVICES WITH REFERENCE TO BANK FUNCTIONING

**Y. Satya and B K Gupt**

## ABSTRACT

*The banks have been sporting innovative technologies so as to enable them to be branded as future banks. Yet, the acute competition, radical changes in the social media and disintermediation introduced several challenges. The bad banking or lazy banking seemed to be a disruptive condition and the new digital start-ups are dominating the most vital payment and remittances markets. The regulatory bodies too are keen in this experimentation and the retail banking is heading towards a paradigm shift towards digital direction. The smart banking is heading towards productive systems of Apps and Digital Wallets fast gaining first mover advantage. The digital business markets of payments and remittances are accommodating FinTech newbies. The restructuring measures are too ineffective and the traditional banking is fast losing its position due to stringent norms and facing new challenges of losing customers especially in retail banking. The current research paper analyses the digital impact in banking systems.*

**Key Words:** Apps, Digital Wallets, Reach, Value Addition and Payment Banks

Banking for all is tapping the growth demographics. A diversified mission and the concept enabled to offer various banking opportunities available be it off-line or on-line applications to different segments and participants of financial systems. The change is a continuous process and current version of banking services at large is undergoing the process of redefining the scope suitably fit in new exciting contexts of innovation, sustenance and growth. This is made possible by making different assessments which successfully presenting variable impact measures creating both favorable and unfavorable effects. The digital financial services to the general public, to corporate/s or to the personnel from prospective investment fields are prompting the rapidity of digital service markets offering innumerable prospects. The typical banking systems, recently have been concentrating on heightened use of customer conveniences and insight towards innovative delivery of services to enhance the "customer experience".

The measure of digital utilities in terms of the self-operating conveniences associated to bank services introduced banking-from-home through its net banking and mobile banking. The range of customers needed is diversified and the banks strongly believed that "one

size fits all". Keeping in view the economically feasible solutions, these service extensions are able to attend the gamut of branch banking functions. The initiation of changes in customer usage systems introduced to value-added banking as an advantage and it became a turning point where each new concept is being analyzed as an innovative measure. The guiding factors being the bank capacities and service assessments which are able to leverage with impending changes. The effort is over the legacy, the user-based technologies aiming primarily on banking processes to be advocated as digital business models.

**Understanding Customers' Reach Strategies**: Ranging from the untapped markets in India to the territorially popular indigenous systems or the presence of global innovation to the highly competitive domestic segments, the financial outlets often co-exist. Be it formal or informal service extensions, the re-modifying effects are prominent in the areas of

- Credit Conveniences (especially to meet consumption needs)
- Modes of Thrift (including very short term investment/s)
- Risk Coverage (Limits of Utility Options available) and
- an array of the heterogeneous financial supportives to the entrepreneurs, inclusive categories, alternative fund channel systems, mediating groups and facilitators within or outside the banking purview etc.

Understandably the credibility factors or score with in the capacities of bankers' holding the responsibility of a class of benefits viz., public relations, business correspondence, credit agency services/facilities, business promotion & business recovery service operations etc. Taking access to the financial credibility of clients is a gainful proposition from the social networking channels, social media using digital systems. The revolving credit supports wider phenomena of financial understanding and knowledge systems with reference to banks' image and distinctive customer groups.

**Relative Viability of Social Media**: Understanding the new role-vitality of social media and its models enabled a great understanding of the opinions, trends and information about markets. It is identifying the most potential segments in the emerging markets i.e., the youth segment, the petty business investment segment and the financial independence possessed by these groups.

**Assessment of Risk**: The banks' lending activities are adopting various forms of algorithmic assessments which enabled them to gain the advantage of the customers' interest despite the (a) financial access or (b) financial inaccess. The LinkedIn, Twitter, Whats Up and Face Book have been offering different forms of utilities which are being converted into Credit based Information Sources (CBIS) to the banks and financial institutions (here onwards FIs). All relative information is able to present a substantial credit advantage aiming the target credit and target payment processes.

**Financial Knowledge Module/s**: Usage of the big data created a vast scope towards meeting different forms of financial literacy to the channel partners. The banks, financial

intermediaries, service institutions as well as transactional credit acceptance and payment systems etc., are addressing most diversified and new financial services (NFS) / new credit services (NCS) as a part of "Revolutionary Credit Services" (RCS). The inter and intra positional accommodations of Banks and FIs are opting to attain new formats of information systems. This will explore the benefits to be offered to Prime Clients, Sub Prime Clients, Partnering Categories or Consolidations. Ease in the credit formalities, reduced charge backs and to reallocate the credit needs keeping in view the diversities of the sub-prime to sub-sub-prime customer categories.

**Synchronizing Liquidity Flows:** Liquid refers to the cash capacities in relation to bank transactions. The recently evolving digitized modes have facilitated the avoidance of direct cash and introduced digital systems i.e., the replacement of card and digital forms to physical cash which has a valued added feature of overcoming global currency differences. Be it bank / institutional payment or of business concerns have been introducing the new net-based mobile acceptable payment conveniences (MAPCs). These are mobile money products and the initiators being the banks, mobile companies, social media institutions and corporate/s are seeking utility-specific group priorities.

The new partnering is enabling client based categories with facilitators or network operators creating spaces on the common convenience platforms. The virtual currencies i.e., bit coin as a means of exchange cash and near cash facilities is a reality. The arena has too much diversity and there are numerous players be it banks/FIs, the corporates and the major service providers of mobile-money products used for transaction access barring all codes of value measures.

The new money conversion formats where the occurrence of digitization enforced or offered-on-demand i.e., the Systematic Investment Plans (SIPs), credit and tax planning or portfolio of these creating the instant digital conversion of the money available at the individual/institutional premises. The innovative buzz in digital context is to "Catch it right at source" viz., point of origination rather than the spaces of spending i.e., point of execution. The process of instant digitization is a realistic phenomena where the service provider to the client be it the bank or the intermediary / facilitator enable the client to use digital money available for variable usages available in the market systems. The common currency value code is offering an immediate conversion as an insource to aid any form of physical currency into digital formats.

**Adaptive Market Structure**: The combinations of new and existing market versions are observed as a measure of digital utility services. Be it travel, health, entertainment or quality spending patterns associated with risk and venture etc., are the new parameters of financial decision making. For e.g., the customer shopping needs are to be converted into shopping experience. This is by enhancing the scale of shopping levels, shopping conveniences suitable-to-the-context linking Soft Credit to the situation etc., is the new

strategic game plan of Created Investment Opportunity (CIO). Listing out the shopping sequences under the online credit facilities the banks are targeting the niche market to adopt investment vs. spending patterns. The niche market has adopted a typical behavior towards Preferred Operational Facilities. The payment systems are aptly rated on the criteria of reach scale and the needed support is advocated on the criteria of sequence-by-sequence (S/S) viz., new payment devices with new applications. The approach is not restricted to banks/FIs but also from the corporates, business houses etc., participating in (i) creating credit acceptance and payment or (ii) mere payment situations. The digital market participants are briefed as follows:

| | |
|---|---|
| ➢ Foreign Banks | ➢ Bank of America, Standard Chartered Bank, Citi Bank, Lloyds etc. |
| ➢ Domestic Banks | ➢ SBI, Federal Bank & RBL etc. |
| ➢ Mobile Companies | ➢ Apple, Reliance, Vodafone and Samsung etc. |
| ➢ Business Houses | ➢ Alibaba, Best Buy, McKinsey etc. |
| ➢ e-Commerce-Social Media | ➢ Google, Facebook, Twitter & Snapdeal etc. |
| ➢ Corporates | ➢ Accenture, Novantas, Deloitte & IBM etc |
| ➢ Finance Companies | ➢ Disruptive Finance, Financial Services Club etc. |
| ➢ Technology Providers | ➢ TCS, Cognizant Technology Services, Infosys, Genpact etc |
| ➢ eWallet Players | ➢ Closed, Semi-closed, Open, Semi-open & Open Wallets (Make–my-trip, Jabong, Airtel Money, PayUMoney etc.) |
| ➢ Fin Tech Start-Ups | ➢ Lendingkart.com, Mswipe, Capital Float, Citrus Payments etc. |
| ➢ Merchants On Board (Clients) | ➢ McDonalds, Meru Capital, Ola, Asian Paints Reliance Life etc. |
| ➢ Investment Banker / Venture Capitalist Start-Ups | ➢ Orios Venture Partners, Signal Hill Capital Advisory India Pvt. Ltd, Sequoia Capital India and Accel Partners etc. |

The classifications have opened new visible deal spaces to some popular information vs. payment channels. The Paytm, Buddy and M-PESA etc., are successful in gaining prominent space in net payment and especially mobile systems be it pre-paid or post paid options. The Registered Users of Smart Mobiles in India are identified as most potential digital market offering with new plug-ins for e-commerce user channels.

**Effects of Service Communication**: Checking the balance, checking the account, P2P (peer to peer) lending, lending through credit card access, periodical payments including recharge facilities, direct payments, access to mobile services and person-to-person payments etc., are the typical service functions where the digital banking concept is offering utmost convenience. Different models came into existence and given rise to variant product range, distribution of services, front and back office operations, market communication, purchase behavior of customers and several other expectations. In fact, digitization cannot be understood as a defensive mechanism but remains as service improvement either to generate or enhance the revenues by improving customer insights. The change in the scenario occurs when the banks and FIs are encouraging new format of services to create great demand towards banking and non-banking customers. The prospective approaches have given rise to channel supportives, new integrated effects resulting in the foundation of strategic digital planning processes.

**Growing Popularity of Online Payments:** The effect of ".com" viz., direct pay.com, pay.in , ebs.com and atomtech .in, revenue.com, zaakpay.co and payzappy.com from flipchart etc., are the online payment gateways from financial technologies. Similarly the popular mobile payments are from Snow Leopard Technology Venture's livquik, Airtel's Money, Vodafone's Mpesa, Tata's M rupee and Idea with Operator Wallet etc. Besides these the

- Paytm, India offered the Mobile Wallet Space with a 680 million mark in Sept, 2015.
- GloboKasNet, Peru presented Mobile Money Infrastructure Services and offer virtual currency services in terms of cash in-cash out patterns through network agents.
- Paynearme, US enabled Digital Wallet to pay bills and make online purchase. The wallet also convert cash into digital cash through different partners engaged in similar services.
- Vitumob, Kenya facilitated online shopping, accepting orders directly from ecommerce sites viz., Best buy or Amazon etc. , with delivery at doorstep.
- Mpesa where Kenyan Net operators enabled branchless banking services to deposit money, withdraw, transfer, finance and micro financing services.

**The App Services:** Ranging from selective/exclusive to open-to-all categories the digital innovations have thoroughly dominated the financial market scenario. The payment companies, social media channels, business houses and mobile banking are potentially branching out in the arena of digital services. The growing spaces in social media payment systems, service payments and remittance market is ever initiating and signifying the need of personal brands, independent client services and real time banking on social networking sites.

The categories of Hongkong- based Lenddo, US-based facebook and Revolution Credit, Indonesia-based tokopedia and flipkart registered from Singapore with its registered office in Bengaluru, India too allowed a Smart Wallet Culture. The advantage of digital Wallet Culture is its convenience i.e., to overcome the menace of bulky wallets filled with debit cards, credit cards and other loyalty cards or reward cards are aptly replaced with electronic

wallets. They offer an ideal solution to consolidate several cards which are put to use on daily basis. The popular digital wallets are Applepay, Android Pay, Capital One Wallet, Gyft, eWallet, Keyring, Levelup Samsung Pay or Paypal etc. The limited or unlimited application facility is offered by these mobile wallets i.e., Paypal works on every phone but the Android or Samsung Pay works only on respective mobile brands only. The eWallet can store different cards with IDs and passwords. Several service providers collaborate with digital service providers viz., MakeMyTrip, redBus, BookMyShow, Domino's Pizza, Fashionandyou, American Swan, Abhibus, Purple, HomeShop18, Naaptol, Pepperfry, Yepme and Infibeam etc., offer e-Commerce services with digital tie ups.

The digital service strategies are offering multiple solutions. For e.g., one touch solutions for payments with cash back is based on "wallet limit". Mobikwik has 12 million users expect payments in a flash for their recurring mobile recharge, bill payments and on-line purchases on e-commerce websites. Oxigen, a popular mobile wallet is possibly serving the clients' family and friends over their social networks. It uses Whatsapp, Google+, Twitter etc., as messaging platforms along with online shopping, bill payments and recharge facilities. Citrus Pay e-wallet offer payments and remittances, cash storage and money transfer. It encouraged tie-ups with several online service providers from varied sectors and integrated with Woohoo, a gifting & shopping portal allowing its clients to shop in listed offline stores with them. The SBI base level services permit its users to transfer money to other users and bank accounts, pay bills, recharge, booking for movies, hotel rooms and services, shopping, travel, setting reminders and mini statement of transactions etc. The semi-closed prepaid wallet services can be obtained in 13 languages even by non-SBI users. The other popular wallet funds are Sequoia Capital, Beenos and E-context Asia etc., with user demand crossing 1,00,000+ installs.

| **Digital Wallet** | **Objectives and Functions** |
|---|---|
| CITI MASTER PASS | The first Global Digital Wallet for fast and secure online shopping. Simple to operate as it needs a single click and store all credit, debit, prepaid, loyalty cards and shipping details. |
| ICICI Pockets | Offers usage convenience in any Indian bank account to fund the payments, money transfers, recharge, booking tickets, send gifts & split expenses with friends etc. It is usable in any website or mobile application in India. |
| HDFC Chillr | Chillr is an instant money transfer app by HDFC is available only to its clients. The wallet is used to make various payments viz., recharge, remittances, request funds etc., payable in online & offline formats. |

| | |
|---|---|
| Lime | Launched by Axis Bank, the app offers a mobile wallet for payments, shopping and banking facilities available for both account & non-account holders. The app permit the users and their families to add money while using their debit/credit cards, net banking, shared or specific purpose usage i.e., gifts or vacations etc. |

**Bank Tie Ups with Social Media:** A sequence of utilities are aiming the untapped and grass root segments when "Banking Majors" announcing lucrative money transfer solutions through digital modes on social media sites i.e., Twitter, Face book etc. The wide range of objectives in this reference is witnessing active participation from private sector. For e.g., the ICICI's Bankpay allows the clients to verify and update the transactions, check account balance and to avail services viz., transfer funds and recharge their mobile phones. Majority of private sector banks are gaining advantage of social media to offer utility services with delights. "Pockets", a youth targeting app of ICICI Bank was downloaded by 3 million youth customers on Face Book. Its " iMobile" Banking App gained 5 million customer downloads with transaction volume of 31 million valuing ₹56000 crores. The Ping Pay of Axis Bank is for money transfer and also use social media and phone lists. The bank also permits clients from other banks and even non-banking customers. This favored the app with 1 lakh+ downloads (8,982 customers) valuing ₹13 crores. Its Axis Mobile App was launched in 2012 could win 2.3 million customer downloads with transaction volume of 347 lakhs valuing ₹34,460 crores.

The PayZaap of HDFC Bank has one touch payment directly linking both debit and credit cards. Launched in June 2015, its' downloads were over 1 million and transaction volume was over ₹31 lakhs. The Chillr app is used to send money to anyone, paying bills and recharges etc., was launched in 2015 had over 1 million customer downloads with transaction volume over ₹11.72 lakhs. Its Mobile Banking App was launched in 2012 had 3.6 million downloads with transaction value of ₹53,359 crores.

MyPoolin app (2015) is to pool the funds for different purposes from different mobile wallets was a huge success. It earned QPrize in 2015 from Qualcomm Ventures Seed Investment Competition for being an early success app. The TransferWise, Square Cash and Lending Club are Mobile Wallets for money transfer services, connecting investors and borrowers achieved huge success. Freecharge offers various services viz., recharging pre-paid mobile phones, post paid connections, landlines, DTH / data card, electricity bills and recharging metro cards etc. It was acquired by Snapdeal.

| App | Founded in Year | App Launch | Volume | No. of Merchants |
|---|---|---|---|---|
| Citrus | 2011 | 2014 | 10.5million | 9500 |
| Mobikwik | 2009 | 2012 | 60 million | 50000+ |
| Paytm | 2010 | 2014 | 75 million | 18000 |

The BankBazaar and Funds of India are financial products encouraging aggregation, the Remitguru and Remit2India are exclusive remittance apps and Capital Float offers prototyped loan products to small businesses besides looking after their working capital needs. The launch of Digital Wallets and Wearables is fast increasing as the service medium. The Kotak Mahindra Bank introduced Kay Pay for face book users introduced the facility to be used by more than 250 million Indian Bank Account holders' transfer funds.

The HDFC, AXIS Bank and SBI are fast adopting the new technologies using apps and wallets on mobile and social media to service their customers. The RBI Operative Guidelines for Mobile Transactions in India is insisting on security and confidentiality over the fund transfers using social media. A three-tier authentication, registration of mobile number using digital workforce etc., are few cyber security measures to be adopted to overcome any crime. The IDRBT (Institute for Development & Research in Banking Technology) of RBI has been promoting the participation of banks on social media and in its report of the Social Media Framework for Indian Banks includes the governance models and security implications etc.

- The effects of strategic platforms with reference to Mobile Wallets (MWs):
- Availability of possible trends of MWs?
- Information about prime game players supporting MWs?
- Innovation and Growth Expectation using MWs?
- Detailing the functional effects of winning MWs?
- Knowledge about provisioning the supporting technologies to MWs?
- Ways and means of banks leveraging MWs?

The dramatic changes in digital banking are able to allow both borrowing as well as exchanging as measures of convenience. The payments and remittances through mobile are also facilitating micro lending through whats up, facebook or usage of alternative currencies like bit coin etc. Bit coin as mentioned earlier is a new global digital money used to be transacted through multiple media. It is understood that the digital channels are similar to bank lobbies and claim to be more personal than prevailing bank premises. Sharing information in digital corridors is mostly informal irrespective of its nature i.e., business, entertainment and banking makes it an open media for different personal services.

The vibrant digital channels are allowing the clients to get tied up in multiple engagements and communication with ready- to-serve intentions. The customer care is given utmost importance as the customers prefer to communicate even on-demand anywhere and at anytime so as to meet their expectations. An ideal, fast, responsive and transparent communication can potentially offer an interesting platform with a community sense. The typical banking, on the other hand, has been sourcing cumbersome procedures and

functional systems resulting in growing distrust and slow moving effects. The monotony, bureaucracy and lack of appropriate futuristic vision deemed to be the cause forms of banks eventually losing their reputation. In contrast, the digital mobile features are able to directly advertise the bank transaction branding. The "creased waves" as brand attributes of Apple have become popular for their innovations in quality effects, swiftly intuitive, designer-based lifestyles and amicably go getting techniques with definite personifying effects.

Personification of brands otherwise applicable to the cars, garments or travel are now being attached to digital products/ services aid and facilitate the context-based connectivity. The concept of digitally-active and gaining-the-views are the primary measures to the internet priorities. For e.g., the popular Digital Eagles and Walking Football in YouTube and Skype could draw biggest crowds with substantial views. The vibrancy is now a created factor for savvy digital customers who adopted Crowd Sourcing on YouTube over the launch of Money Stuff, an online hub. Similarly the Flex One Current Account targeting "Under 18s" was a rage. The presence of digital platforms with wider options are capable to make a mark and it is successfully able to make a big difference in user-preferences, user-choices, possibilities and option-in-device and operating systems' selections as fancied by customers.

The digital games wrap around the innovation start-ups, leader boards, leveraging points and levels viz., Gilt, Foursquare are trying to reduce their engagement costs, aiming sustainable relations, boosting viral communities and lowering customer acquisition costs etc. The game design content in gamification is a factor of sensation in the mobile and web spaces. The apps are fast becoming popular and the making the banking processes more fun and drive to engage the customer for targeted behavior.

**Current Banking Scenario:** The most volatile financial environment is the beginning of new generation private banking successfully making efforts to future ready (Mahindra Bank) and Most Improved Bank (Yes Bank). The Jury Awards of Performing Banks enabled "Bank of the Year" to HDFC, ICICI and Axis Banks; the "Most Improved Bank" to YES Bank, RBL and IndusInd Bank; the Most Future –Ready Bank to Kotak Mahindra, HDFC and IndusInd Bank; the Best Bank – Innovation to ICICI, HDFC and IndusInd Bank; the Best Bank – Digital to HDFC, IndusInd and SBI; the Best Bank – Financial Inclusion to SBI, Axis Bank and RBL Bank.

The new Quantitative Rankings of Banks identified with balance sheet size is equal to or more than ₹3 lakh crores as Group-I: large banks (HDFC, ICICI and Axis Banks), Mid-sized Banks with ₹>1lakh and ₹<3 lakh crores as Group-II (YES Bank, Kotak Mahindra and IndusInd) and Group-III are Small Banks are < ₹1Lakh crores (RBL Bank, Federal bank and City Union Bank). Group IV and V represent the foreign banks with > ₹25,000 crores (Deutsche Bank AG, JP Morgan Chase Bank and Citi Bank NA)and < ₹25,000 crores (Credit Suisse AG, Credit Agricole and ANZ). The new methodologies of banks are based on Growth, Size, Strength in terms of Quality of Assets, Productivity and Efficiency, Quality of Earnings and Capital Adequacy norms. The Best in Class (HDFC Bank) adopted Net

banking platform, Personal loans in 10 seconds, CRM to Mobile and Internet Platforms and CASA acquisition channel extended to Partners and the last but not the least is its' Digital Application platform introduced instant e-approvals to retail loan applications.

**Fintech Platforms: A Threat to the Banks:** The Apple launched the mobile wallet services along with iPhone6 is a mobile wallet become a matter of concern. The Wallet is the genesis of battle ground among the banks, the technology companies, the mobile manufacturers, social media and several others. Apple has anticipated 22% growth in current context as against 15% from its digital mobile transactions. The Apple, Samsung and Google have overarched the bank offerings. The digital players are focusing on the "entirety of payment functions" by using new tech-based information systems which can be shared with customers in advance.

The tech-based companies are able to create a range of services which are most suitable to customers' palate and make an effort to create uniform value to all customers. Soon the digital customers are offered to get transfers from one account to another i.e., from physical to digital, from old card culture to digital and from old services to new digital service portfolios. The retention of customers will be a basic criteria and the big data is constantly under review to enable the customer leverage the data and construct loyalty schemes to gain the top of wallet point/s.

Besides these the forward moving gestures are combined with primary providers leading to service integrations need to construct proprietary sequence of tie-ups to create and retain the customer value. This is possible through integrated payments, loyalty and contextual signs and make it personified offer/s. The digital deliveries are currently trending on digital mobile services, offering new customer experiences, ease-in-payment modules, innovation in operations, security and product design to creating all new difference in digital experiences.

My Poolin, Alipay, Paypal and Lending Club etc., are able to generate solid business in millions seemed to be the happening alternative exploring new user experience. These business models with low cost modules are posing a real threat to the traditional banking industry. The Capital Float, RemitGuru etc., are accounting to 46 new lending start-ups with diversified objectives offering both business/corporate lending and payment facilities. The day is not far away where the traditional bankers are fast losing their customers. The tailored loans, new working capital products, small lending emphasis and instant attention to payments/remittances and adopting simple customer interface in most affordable forms are matter of concern. The basic reasons which are forcing this paradigm shift are

- The app-segment is basically youth representations as high demanding digital segment are considering the banks as traditional and outdated systems. The clients' new perceptions are not aiming at bank options but on payment conveniences.

- KYC (Know Your Customer) is the unending hassle with several formalities etc., making it unpopular even among those loyal customers. Most of these have been relieved with the new app-based Wallets.
- The Payment Companies are adopting multi-channel digital services which are maintaining new relationships with pleasant experiences through Digital Payment Start-Ups.
- The regulatory framework is bent on benchmark changes in the field of innovation and is also encouraging the new FinTech trends. These are redefining the lending patterns where the non-banking financial companies (NBFCs) are adopting tech-based services with one touch solutions and overnight success.
- The impending threat is multi-dimensional i.e., the launch of 4G Jio by Reliance Mahindra Tech, NSDL (National Securities Depositories Limited) and India Post, Cholamandalam Distribution Services, etc., are posing new digital personification in valued service systems.

The obvious losses to the traditional banking industry are the loss of major opportunities of small transactions, financial catering needs and ever-growing on-line customer services, easy enrolling through mobile platforms, innovative revenue models and potential small ticket transactions. Lack of initiatives towards digital experimentation is witnessing the rampant participation of private market players towards restructuring and revival leaving limited scope is driving the banks towards bad banking. There is a dire need for the banks to adopt new advanced analytics and enterprise technologies to understand the mindset of digital users. The outsourced app building, time consuming methods and sloppy cash / credit management, lack of credit scoring models, stressed loan details, lack of appropriate funds to finance productive customers and stringent laws only drive away the customers to more green digital pastures i.e., newbies and start-ups and the performing banks may eventually face a threat of turning into non-performing banks.

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- RBI Bulletin
- BT & KPMG Study

# IDENTIFYING INDICATORS OF PROJECT IMPACT

**Ritu Tiwari**

## ABSTRACT

*Environmental Impact Assessment (EIA) is an important management tool for ensuring optimal use of natural resources for sustainable development. The aim of Environmental Impact Assessment is to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process. EIA is an important tool in assuring that projects and plans will not give an adverse impact on the environment.*

**Key Words:** Environmental Impact Assessment, Sustainable Development, Environment, Development

## INTRODUCTION

Environmental impact assessment (EIA) is the formal process used to predict the environmental consequences (positive or negative) of a plan, policy, program, or project prior to the decision to move forward with the proposed action. The purpose of the assessment is to ensure that decision makers consider the environmental impacts when deciding whether or not to proceed with a project.

The International Association for Impact Assessment (IAIA) defines an environmental impact assessment as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made." "Environment" in EIA context mainly focuses, but is not limited to physical, chemical, biological, geological, social, economical, and aesthetic dimensions along with their complex interactions, which affect individuals, communities and ultimately determines their forms, character, relationship, and survival. In EIA context, 'effect' and 'impact' can often be used interchangeably. However, 'impact' is considered as a value judgment of the significance of an effect. "It is necessary to understand the links between environment and development in order to make choices for development that will be economically efficient, socially equitable and responsible, as well as environmentally sound."

**Figure 1.1 Components of Sustainable Development Background**


Perceptions about environmental impacts can be rather different in different countries. Where poverty is widespread and large numbers of people do not have adequate food, shelter, health care, education, and old age security, the lack of development may constitute a greater aggregate degradation to life quality than do the environmental impacts of development. The imperative for development to remedy these defects may be so great that consequent environmental degradation may be tolerated. It is now widely accepted that development can be planned to make best use of environmental resources and to avoid degradation. The process of EIA forms a part of the planning of such environmentally sound development.

Environmental impact assessments commenced in the 1960s, as part of increasing environmental awareness. EIAs involved a technical evaluation intended to contribute to more objective decision making. In the United States, environmental impact assessments obtained formal status in 1969, with enactment of the National Environmental Policy Act. EIAs have been used increasingly around the world. The number of "Environmental Assessments" filed every year "has vastly overtaken the number of more rigorous Environmental Impact Statements (EIS). At the end of the project, an audit evaluates the accuracy of the EIA by comparing actual to predicted impacts. The objective is to make future EIAs more valid and effective. Two primary considerations are:

- *Scientific* - to examine the accuracy of predictions and explain errors
- *Management* - to assess the success of mitigation in reducing impacts

## Law policy and institutional arrangements in India

The Ministry of Environment and Forests (MoEF) of India's role has been pivotal in the Environmental Impact Assessment in India. The main laws in action are the Water Act(1974), the Indian Wildlife (Protection) Act (1972), the Air (Prevention and Control of Pollution) Act (1981) and the Environment (Protection) Act (1986),Biological Diversity Act(2002). The responsible body for this is the Central Pollution Control Board. Environmental Impact Assessment (EIA) studies need a significant amount of primary and secondary environmental data. Primary data are those collected in the field to define the status of the environment (like air quality data, water quality data etc.). Secondary data are those collected over the years that can be used to understand the existing environmental scenario of the study area. The environmental impact assessment (EIA) studies are conducted over a short period of time and therefore the understanding of the environmental trends, based on a few months of primary data, has limitations. Ideally, the primary data must

be considered along with the secondary data for complete understanding of the existing environmental status of the area. In many EIA studies, the secondary data needs could be as high as 80 percent of the total data requirement.

## IMPACT INDICATORS

Impact indicators measure changes that occur as a result of project activities. Impact indicators can be qualitative or quantitative, and usually relate to the end result of a project on the lives of the project participants. Impact assessment processes are in place and applied in many countries, yet biodiversity is often inadequately addressed. There is a growing recognition of the need to better reflect biodiversity considerations in environmental impact assessments and in strategic environmental assessments. Important barriers to the incorporation of biodiversity in impact assessment include low priority for biodiversity and limitations in one or more of the following areas: capacity to carry out the assessments; awareness of biodiversity values; adequate data; and post-project monitoring. Strategic environmental assessments have high potential for addressing biodiversity in planning and decision-making, but there are challenges to their application.

EIA estimates not only the impacts on various biophysical aspects affected by the proposed action but also of these socio-economic changes that take place in the society. It should be emphasized that the socio-economic environment is difficult to quantify. In fact, this is one reason why socio-economic impacts are not considered in some jurisdictions; and why they are included in some other cases mainly to satisfy agency requirements, rather than because the assessor feels that a socio-economic assessment would be helpful to the decision-maker.

The social environment is a composite of numerous interrelated factors. Although these items may be identified from checklists, interviews, etc., the inter-relationships are generally poorly understood and have largely been ignored in project planning. In part, this problem is caused by a failure to recognize that social processes have feedback. Most projects involve some sort of direct or indirect livelihood asset transfers, such as infrastructure, knowledge, livestock, food or income. These asset transfers sometimes represent impact, but usually it is the benefits or changes realized through the utilization of these assets that represents a real impact on the lives of project participants. For example, if a project provides training in new and improved farming practices, a transfer of skills and knowledge or human capital would be expected.

A general list of socio-economic impact categories (Shields, 1975) include:

1. Demographic Impacts: Rural depopulation; suburban growth; etc.
2. Economic Impacts: Income, employment, and taxes; the affected parties; impacts on business and large property owners; increased short-term and long-term employment;

be considered along with the secondary data for complete understanding of the existing environmental status of the area. In many EIA studies, the secondary data needs could be as high as 80 percent of the total data requirement.

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the 'boom and bust' pattern of project construction; problems of local inflation and short-term changes in supply and demand patterns;

3. Impacts on Social Values and Attitudes:
   a. Community cohesion; the social integration of the community and the mechanisms by which individuals and groups within a defined area maintain functional ties with one another;
   b. Life style, a perceptual and behavioural dimension, referring to accepted values and day-to-day behaviour in the affected communities, as well as to outsiders' views of these values and behaviour .

Other lists include Canter (1977) and Finsterbusch and Wolf (1977). Most of the categories have been designed for use in North America, and their applicability in other parts of the world has not been tested.

Socio-economic indicator categories for desertification (Reining, 1977) are as under:

1. Land use
   a. Irrigated agriculture
   b. Dry land agriculture
   c. Pastoralism
   d. Cutting and removal of vegetation for fuel and construction
   e. Mining
   f. Tourism and recreational use
2. Settlement pattern, especially in rural populations and in relation to energy sources
   a. New settlement
   b. Expansion of settlement
   c. Diversification of settlement
   d. Abandonment of settlement
3. Human biological parameters
   a. Population structure and rates
   b. Measures of nutritional status
   c. Public health indices
4. Social process parameters
   a. Conflict
   b. Migration

c. Redistribution patterns

d. Marginalization

e. Cash vs. subsistence

The selected list should be consistent with relevant community or national goals. The goals may be drawn from the community itself or may be specified by a government on the basis of national aims, e.g., through legal standards for environ mental quality.

Impact indicators look at the end result of project activities on people's lives. Ideally, they measure the fundamental assets, resources and feelings of people affected by the project. Therefore, impact indicators can include household measures of income and expenditure, food consumption, health, security, confidence and hope.

Most project M&E systems measure the process or delivery of inputs and activities as opposed to the real impact of the project on people's livelihoods. Measuring process is no less important than measuring impact; process monitoring data is a valuable step in determining how impact relates to a specific project activity. For example if a food security project introduces high yielding crop varieties into a community and an impact assessment shows an overall improvement in food security, the process monitoring reports should tell us whether the improved seed varieties were indeed delivered and planted. The strategic evaluation should have identified the major impact categories in relation to the original goal of the project. Social indicators must be made specific in terms of jobs, leisure time, or similar variables. Having developed a list of indicator variables, it is then often necessary to express them in the most relevant forms. The ones that survive are, in fact, those that are able to absorb changes, i.e., those that have a considerable degree of internal resilience. Resilience, in this sense, is indicated by the maximum external stress (magnitude and rate of change, positive as well as negative) that a system can accept before collapsing or shifting to a fundamentally different behaviour. A review of the concept can be found in Holling (1973).

Resilien vce indicators are of three different classes:

1. *Resilience Indicators of Benefits*

The net economic and social benefits of development or policy proposals are often emphasized in environmental assessments. But there are resilience counterparts to these impact indicators. If the development were to fail unexpectedly, or if social objectives were to shift to such an extent as to require removal of the project or policy, there would be an associated cost. A computer model provides an explicit way of measuring this cost of failure, by merely programming such a hypothetical event during the course of the computer simulation.

2. *Resilience with Respect to Systems Boundaries*

Social-ecological systems are dynamic in the sense that their structures and functional interrelations themselves establish the outer limits of resilience. Example: phosphates

added to an aquatic ecosystem are incorporated into existing biogeochemical cycles. But there is a limit to the amount that can be added without upsetting the integrity of the cycle. Therefore, an indicator that expresses the total amount of phosphate added to the system should be matched with one that expresses the relative amount in relation to the system boundary for phosphate.

3. *Resilience Indicators of Social and Environmental Capital*

Reserve funds and resources are available for development projects and policies. Whenever the unexpected occurs, however, the decision-maker may be forced to draw from these reserves to modify existing programme. This course of action forecloses future options to a certain extent, the degree of foreclosure being dependent upon the relative sizes of the withdrawals and of the reserves. Thus a resilience dimension should be attached to the various indicators of social and environmental capital

## ESTIMATION OF THE CURRENT SOCIO-ECONOMIC ENVIRONMENT

❖ **Social Profiling:**

In order to make a useful prediction of the socio-economic effects of an action and to develop indicators for this purpose, an assessment team should be assembled, and should be given the task of learning a great deal about the community or communities likely to be affected. The process of gathering the required socio-economic information has been called *social profiling*. Generally, only communities in the immediate area and in adjacent regions need to be profiled. Those most affected by the proposed development include people who would be displaced or whose communities would undergo profound change, such as that caused by an influx of construction workers, or by the closure of a major local industry.

Groups of affected people living in adjacent regions will be identified when the assessment team begins to study trade and transportation routes, as well as the recreational, cultural, and ethnic linkages between regions. Some will benefit directly from the economic stimulus given to the community; others will be affected adversely. In this connection, a basic problem is the selection of criteria for stratifying the public into sub-sets. For example, should the population be sampled according to ethnic origin, socio-economic state, or geographical location? No firm recommendation can be given except that, as far as possible, no group should be ignored. If public involvement is contemplated, it should come at the beginning of the planning process and should be seen to be meaningful.

1. Information on socio-economic states may be required for the time frames: before the public is aware of the proposed action;
2. after the news of the proposed action has been widely disseminated, but before a decision has been taken;

3. during implementation of the action (e.g., during the construction stage);
4. After the action has been completed (the post-audit).

Social perceptions and attitudes may change substantially with time, and the environmental assessment may contribute to this change.

❖ **Community-defined indicators of project impact**

As far as possible, a PIA should use impact indicators which are identified by the community or intended project participants. Communities have their own priorities for improving their lives, and their own ways of identifying impact indicators and measuring change. Oftentimes these priorities and indicators are different from those identified by external actors. Traditional M&E systems tend to over emphasize 'our indicators' not 'their indicators'. For example, selected drought response projects in Zimbabwe and Niger aimed to measure project impact against specific household food security indicators, such as increased crop production and dietary diversity. When project participants were asked to identify their own benchmarks of project impact, these included the following indicators.

- The ability to pay for school fees using project derived income (education benefits)
- The ability to make home improvements
- Improved skills and knowledge from the projects training activities
- Improved social cohesion
- Time saving benefits provided by the project

One way of collecting community indicators of impact is simply to ask project participants what changes in their lives they expect to occur as a direct result of the project. Alternatively, in cases where the project has already been implemented one can ask what changes have already occurred. This should be done separately for each project activity that you plan to asses. If the project has a technical focus, for example natural resource management, the provision of agricultural inputs or livestock, ask the participants how they benefit from the ownership or use of the resources in question. Alternatively if the project focuses on training or skill transfers, ask how the training or improved skills will benefit them. These benefits are impact indicators.

❖ **Simulation Model**

The models used in EIAs are simplified representations (sometimes 'caricatures') of reality.

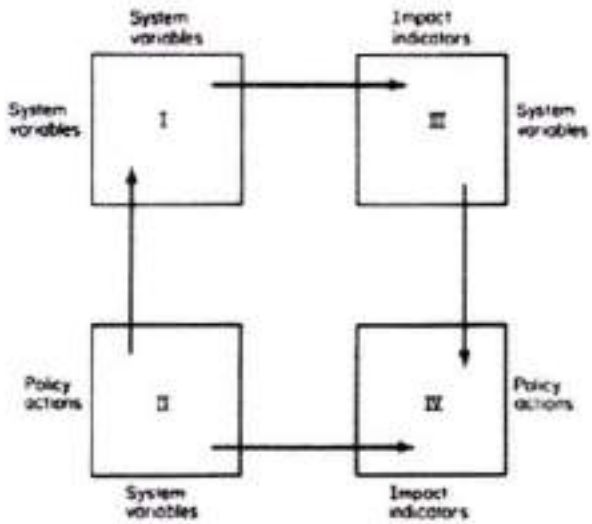
Models can be sub-divided into three main classes:

1. A scaled-down copy of a physical object such as a ship or tall building;
2. A mathematical representation of a physical or biological process, e.g., of the spread of pollution from a chimney, or the movement of a weather disturbance across a region;

3. An exploratory representation of complex relationships amongst physical, biological, and socioeconomic factors or indicators, some quantitative, others qualitative.

In its simplest form, this kind of representation is extremely useful in the first stages of an EIA, helping to synthesize the widely diverse information reaching the assessor through many specialists. As the simulation model becomes more and more complex, it becomes less and less relevant to the EIA process. In fact, the tendency towards complexity, leading to the construction of mathematical extravaganzas, has given the modeler a poor public image in some cases. The word ‹model› will be used in the sense of a simulation, i.e., of a procedure for exploring relationships amongst several variables, some of which may be in qualitative form. The simulation may be incapable of validation, relating to management alternatives that have not been and will never be implemented. For example, when three or four alternative sites for a nuclear power station are considered, validation data will become available only for the alternative that is selected, and then only several years or decades later. The predictions for the other alternatives cannot be verified.

**Figure 1.2 Relationships between tables of system, action, and impact variables.**




(a). *Deterministic vs. Probabilistic Models*

In the former, all the relationships are constructed as if they were governed by fixed natural laws-the uncertainties and random fluctuations are not built into the model. In the latter, some or all of the relationships which are defined by statistical probabilities are included explicitly in the model, whose output then directly represents the consequences of those probabilities. This is sometimes called the *Monte Carlo* approach.

(b).*Linear vs. Non-Linear Models*

Although it may be convenient to assume that relationships between variables are linear, most practical problems require the more complex assumption of non-linearity .

(c). *Steady-State vs. Time-Dependent Models*

Steady-state models compute a fixed final condition based on a fixed pre-action condition, whereas time-dependent models incorporate the way actions affect processes that may eventually produce impacts.

*(d). Predictive vs. Decision-Making Models*

Predictive models enable the consequences of particular decisions to be explored, while decision-making models indicate which of the decisions is ‹best› in some defined way.

## Conclusion:

It is clear that each region and local area should make the best use of land and other natural resources, without causing damage or deterioration by, for example, laterization, erosion, desertification, or the spread of water-borne diseases like typhoid fever, dysentery, schistosomiasis, and hepatitis. Shifting cultivation, which is a common practice in many parts of the humid tropics, may be used as an illustration. This practice is ecologically acceptable whenever it allows adequate time for the forest regeneration cycle, permitting the maintenance of soil fertility. In the past, natural factors (cultural taboos, traditional ways of life, disease, and wars) kept the system in balance. However, with modern medicine and new social values, the rate of population growth has increased, the ratios of land area to population have decreased, and the original balance has been disturbed to such an extent that the cycle of cultivation does not allow for proper restoration of soil fertility. In many cases, there is not even a recovery period, and extensive areas have become overgrown with secondary vegetation and have become unsuitable for agriculture. Synthesis of biogeophysical and socio-economic impacts is difficult to achieve. But the three alternatives to synthesis are not acceptable:

1. To ignore socio-economic effects because they are too difficult to predict;
2. To ignore biogeophysical effects because they are already covered by legislation/ standards/guidelines to ensure that the risk of harmful impacts is kept at an acceptable level;
3. To prepare separate impact assessments, leaving the task of integration to policy-makers, politicians, or decision-makers.

In fact, socio-economic impacts may modulate some of the predicted biogeophysical impacts and may cause new ones that would be missed entirely by conventional EIA methods.

Human behaviour is difficult to quantify and predict, but this does not diminish its significance. The challenge to cross the interface between the biogeophysical and the socio-economic environments is therefore worth the intellectual effort.

The Environmental Impact Assessment (EIA) experience in India indicates that the lack of timely availability of reliable and authentic environmental data has been a major bottle neck in achieving the full benefits of EIA. The environments being a multi-disciplinary subject, a multitude of agencies are involved in collection of environmental data. However, no single organization in India tracks available data from these agencies and makes it available in one place in a form required by environmental impact assessment practitioners. Further, environmental data is not available in enhanced forms that improve the quality of the EIA. This makes it harder and more time-consuming to generate environmental impact assessments and receive timely environmental clearances from regulators.

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# PARENTS – CHILDREN RELATIONSHIP IN MEGHALAYA: AN INSIGHT

**Kishor S. Rajput***

## ABSTRACT

*Premarital sex, pregnancy and STDs/HIV/AIDS among adolescents have become major social concern in India. As changing family relations and lessen parents' control over their children, young people's opportunities to engage in sexually activities are increasing. Growing urbanization, influence of electronic media, growth of nuclear families, etc have also contributed towards youths' growing openness to their sexuality and sexual behaviour. It is often stated that the types of relationship and levels of communication that the children and youths have with their parents and other immediate family members can have significant bearing on the sexual behaviour and attitude towards sex. Therefore, this paper tries to study the familial relationship of the students in the context of their various problems.*

**Key Words:** Parents-Children Relationship, Sexual Behaviour, College Students.

### Introduction

The needs of the adolescents in relation to the threat of HIV/AIDS and other STDs were neglected in the overall population and reproductive health programmes. This is mainly because the issues pertaining to adolescent sexuality are considered as extremely sensitive in many of the developing societies. The welcome change in the policy framework has started occuring only after the International Conference on Population and Development (ICPD), 1994. The ICPD declaration stated, "Government in collaboration with non-government organizations, are urged to meet the special needs of adolescents and to establish appropriate programmes to respond to those needs. (ICPD para 7.47). As a result, in recent years, researchers have increasingly turned their attention towards the study of reproductive health issues of the adolescents or young population. From the point of infections, these are one of those groups of population who are at higher degree of risks (Mishra, 2002).

Premarital sex, pregnancy and STDs/HIV/AIDS among adolescents have become major social concern in India. As changing family relations and lessen parents' control over their children, young people's opportunities to engage in sexually activities are increasing. Growing urbanization, influence of electronic media, growth of nuclear families, etc have also contributed towards youths' growing openness to their sexuality and sexual behaviour. (Ghule, 2004).

It is often stated that the types of relationship and levels of communication that the children and youths have with their parents and other immediate family members can have significant bearing on the sexual behaviour and attitude towards sex.

## Objective of the Study

The main objective of the study, therefore, is to find analyse the familial relationship of the students in the context of their various problems.

## Methodology of the Study

The present study manily depends on the primary data which were collected using a well-structured and pre-tested questionnaire. The field area for the present study was confined only to randomly selected 8 colleges of Shillong city- the capital of Meghalaya. The students studying in higher secondary level and graduate level were considered as the sampling unit for data collection. The total number of students surveyed was 428 and the data were collected during the period of October – December 2009.

## Background Characteristics of the Respondents

The background characteristics of the respondents can be summed up as under:

- More than three-fourth (76.2 percent) of the respondents are in the age group of 18 to 21 years.
- The percentage share of the respondents studying in Higher Secondary classes was 14, while 30.8 percent, 32.0 percent and 23.1 percent of the respondents were studying in Degree 1st year, 2nd year and 3rd year respectively.
- Around 80.0 percent of the respondents are schedule tribe students, while the General category students account for 13.1 percent of the total respondents.
- Around 72.0 percent of the respondents are Christians, 15.4 percent of them are Hindus and 8.4 percent of the respondents are found to be traditional faith followers. The share of the other religions in the drawn sample is 4.0 percent.
- 52.6 percent of the respondents are male students and the remaining 47.4 percent of them are female students.
- In the overall sample, Meghalaya domiciled students account for 63.1 percent and the remaining 36.9 percent belong to other states of India and again majority of them are from the North East of India.
- Most of the respondents (70.3 percent) studying in Shillong cited their last place of residence as URBAN with 29.7 percent of the respondents had reported RURAL as their last place of residence.
- The findings show that large majority of the respondents (82.0 percent) hail from nuclear family set up and only 18.0 percent of them come from joint family system.

- Exactly 14.0 percent of the respondents consider themselves as 'Extremely religious', compared to 76.4 percent and 9.6 percent who rate themselves as 'Somewhat religious' and Not at all religious' respectively.
- The data on the experience of the respondents of their childhood days show that 9.1 of them had 'Not very good' childhood and 2.2 percent claimed those days as 'Depressed and disturbed.'

**Parents - Respondents Communications and Relationships**

The parents - respondents' level of communications and relationships can be summed up as under:

- As far as 28.7 percent of the respondents are concerned, they stated that the ***overall level of communication*** with their parents for personal and health problems is 'Very good' and 59.6 percent of them terming it as 'Good.' Around 9.0 percent of them term it as 'Some what O.K.' and only 2.6 percent term their communication with parents for person and health problems as 'Poor.'
- With regard to the ***types of relationships*** with the parents and other family members, 60.3 percent of the respondents term it as 'Peaceful',37.4 percent of the respondents term the relationship as 'Moderately tense' and 2.3 percent of the respondents terming the relationship as 'Very tense.'
- When it comes to ***general health problems***, most of the respondents are found to rely on mother for interaction and discussion, followed by father. The respondents relying on mother and father for interaction and discussion on general health problems stand 76.2 percent and 49.3 percent. However, friends (30.8 percent) also act as an important source of confidant for discussion about the general health problems of the respondents.
- With regard to the ***family problems***, it seems the respondents share it almost equally with the immediate family members with father (33.2 percent), mother (44.6 percent), brother (24.5 percent) and sister (23.1 percent) acting as the close confidant for the respondents for discussing their family problems.
- With regard to the ***monetary problems***, the respondents rely almost equally on father (68.0 percent) and mother 66.6 percent) with slightly more reliance on father for their financial needs. However, when it comes to monetary problems, it seems that the respondents' discussion with their friends is lesser (18.0 percent) as compared to some other problems like the general health problems and family problems.
- For ***academic problems***, it is found that 66.8 percent of the respondents shared their problems with the friends, while teachers were consulted by 39.0 percent of them. The percentages of the respondents discussing the academic problems with their mothers and fathers stand at 34.1 percent and 29.0 percent respectively.

- With regard to the ***personal problems***, the respondents are found to rely heavily on their friends, followed by mothers. For example, as high as 63.3 percent of the respondents discuss their personal problems with friends; while 30.1 percent rely on mothers for discussing personal problems. Only 8.6 percent of the respondents talked with their fathers for the various personal problems that the respondents faced.
- With regard to the ***sexual problems*** of the respondents, friends are the close confidants for the majority of the students. The percentage of the respondents relying on their friends for discussion on sexual health problems is 56.1 percent. Around 36.9 percent of the respondents share their sexual health problems with mothers. Sisters also act as the close confidants of many of the respondents (17.1 percent) when it comes to discussion about their sexual health problems.

## Conclusion

The findings show that the relationship of the majority of the students and their level of communications with their parents is satisfactory, though exceptions are observed in the case of sexual health problems. The study also shows that those respondents who had disturbed and depressed childhood are more likely to indulge in sexual activities where, on many occasions, it involves risky sexual practices. This study, therefore, strengthens the call of the NGOs and social activists to see that the formative days of the child are very peaceful and relaxed which help to build a positive and open relationship with the parents during the adolescent period and which facilitate open and uninhibited lines of communications between the parents and the child during the times of need and crisis.

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# USING ICT AT THE TERTIARY LEVEL

**Albert L. Dkhar and Jacob L. Shylla**

## ABSTRACT

*Several studies argue that the use of new technologies in the classroom is essential for providing opportunities for students to learn to operate in an information age. ICT can play various roles in learning and teaching processes. Technology can play a part in supporting face-to-face teaching and learning in the classroom. While new technologies can help teachers enhance their pedagogical practice, they can also assist students in their learning. Technologies can play a role in student's skill, motivation and knowledge. Therefore, this paper tries to examine the role of ICT at the tertiary level of education.*

**Key Words:** ICT, Education, Students, Teachers, Technology, Teaching-Learning.

### Introduction

Several studies argue that the use of new technologies in the classroom is essential for providing opportunities for students to learn to operate in an information age. It is evident as Yelland (2001) argued that traditional educational environments do not seem to be suitable for preparing learners to function or be productive in the workplaces of today's society. She claimed that organizations that do not incorporate the use of new technologies in schools cannot seriously claim to prepare their students for life in the 21st century. This argument is supported by Grimus (2000), who pointed out that by teaching ICT skills in primary schools the pupils are prepared to face future developments based on proper understanding. Similarly, Bransford et al. (2000) reported that what is now known about learning provides important guidelines for uses of technology that can help students and teachers develop the competencies needed for the twenty first century.

ICT can play various roles in learning and teaching processes. According to Bransford et al. (2000), several studies have reviewed the literature on ICT and learning and have concluded that it has great potential to enhance student achievement and teacher learning.

Wong et al. (2006) point out that technology can play a part in supporting face-to-face teaching and learning in the classroom. Many researchers and theorists assert that the use of computers can help students to become knowledgeable, reduce the amount of direct instruction given to them and give teachers an opportunity to help those students with particular needs. While new technologies can help teachers enhance their pedagogical practice, they can also assist students in their learning. According to Grabe & Grabe (2007), technologies can play a role in student's skill, motivation and knowledge. They claim that

ICT can be used to present information to students and help them complete learning tasks.

According to Beeta (2003), five factors influence the likelihood that good ICT learning opportunities will develop in schools - ICT resourcing, ICT leadership, ICT teaching, school leadership and general teaching. Beeta (2003) also indicated that the success of the integration of new technology into education varies from curriculum to curriculum, place to place and class to class, depending on the ways in which it is applied. In science education, there are some areas where ICT has been shown to have a positive impact. The ICT can enhance quality of education and competency level of the students and teachers.

At the tertiary level of education, the possibility of using ICT effectively is even greater with the further possibility of higher yield in terms of productivity. The recent surge in the availability of ICT tools and gadgets in the market and the relatively affordable prices of these products have contributed, to a great extent, to the digital revolution that is taking place in the state, and in the city in particular. In the past five years, especially, it has been observed that many students who enrol themselves in many of the colleges in the city are largely are either technologically advanced or at least display a certain degree of familiarity with computers and the internet. The situation, at present, has seen a marked growth in the numbers of such students who can comfortably negotiate themselves around electronic gadgets, computers applications and other ICT paraphernalia. The deluge of smart phones, ipads, tablets and other similar gadgets has equipped students with a more convenient way of communicating and of accessing the web. In the light of such developments, it is fairly safe to say that there is a strong case for the use of ICTs at the College Level at a greater and higher extent, going beyond the use of such technology for researching for materials, preparing powerpoints and lecture notes, and projecting lessons or lectures on the screen. These have become part and parcel of the current teaching and learning process in the city. What this paper aims to advocate is the integration of ICTs not only with the syllabus and the teaching learning process, but with other aspects of student and personnel management as well. There are four areas where ICTs can be used effectively at the tertiary level to heighten productivity and to enhance efficiency of all academic interactions and of student and personnel management.

## Information Communication Technology and Student and Personnel Management

Regardless of the size and the extent of the college in terms of area and enrolment, keeping track of students has never been an easy task. The Management must at all times follow the performance and the productivity level of its students at a daily, monthly, quarterly and annual basis and often at different levels and through various mechanisms that have been devised over the years. It must also at the same time, interact with these students and convey to them feedbacks and assign appropriate tasks to aid in improving performance, punctuality and productivity. To complicate matters even further, each

student who enrols in a college contributes to the growing volume of data that must be processed and updated at regular intervals by the office. Besides their immediate academic baggage, students also have other equally important matters such as scholarships, book grants, attendance, leave applications etc. that must be processed and updated as they progress from one class to another. Each of the highlighted tasks has been known to place an enormous pressure on the management and the staff concern, draining away vast amount of manpower, time and resources. ICTs that have been specifically developed to handle such administrative assignments can help to significantly reduce the workload. Using such applications and relevant tools, the students details could be integrated and assimilated in a database. This database could further be encoded into a chip embedded in the students' identity card or programmed into the card using bar-code. Such an elaborate system could appear to be rather expensive and complex. However, if one were to study the system currently used by companies offering mobile phone connectivity, the cost of the sim cards is not that high. Further, the manner in which they are tagged and personalized according to the customer is not as complex as it appears to be. Using the same technology to manufacture such cards, the institution could manufacture identity cards with similar sim like function embedded in the cards.

Again, using similar technology that is used by some major transportation companies in many parts of the world where passengers purchase a key card and fill in money in the card to be used for travelling purposes. Passengers then simply tap the cards on a mechanism installed at the entrance when they enter and exit the vehicle. The mechanism records their boarding time and boarding point and their exit time and destination and then deducts the relevant amount of money from their cards. Imagine being able to integrate this function in the students' identity cards. As they enter the lecture halls, gadgets installed at the entrances of these halls log the students' roll numbers, elective combinations, entry time and then their exit time. The gadgets could also collect relevant data and update their databases on an hourly or daily basis. The amount of time spent in taking attendance and ensuring the students' punctuality and regularity can be recovered and utilised for delivering lectures and in engaging in classroom interactions. The management, then, through a centralised system, detect irregularities in students' attendance, performance and other curricular activities which can then be rectify at various levels.

## Information Communication Technology and Teaching

ICTs, till date, have been used only to prepare lecture notes and presentations, conduct research for relevant materials and to project lectures notes on screen. In some cases, ICTs have also been used to play audio and video files that supplement classroom lectures. But this is severely limiting the use of ICTs, especially at the college level. Teachers, with proper training in the field, can also use ICTs to provide students with online classroom lectures that will further enhance their students grasped of the lesson. They can also hold online

discussion boards, forums and interactions, which can be held on key aspects of the lesson or chapter taught in the classroom. The availability of many social networking sites can actually work to the teachers' advantage. Teachers could use these sites to connect to their students and to engage in interactions that could further supplement their lectures. Lecture notes that have been prepared and used by the teachers in the classrooms could be made available over the web for their students to download and to refer to. The teachers could further point the students to other websites, which carry reliable information and resources that can be used by the students by clicking on relevant links that have been provided on the teachers' webpage. Through the internet, teachers could provide individualised attention to students, which would otherwise be impossible in an actual classroom situation. This is believed to be taking place in other more advanced countries in the world and could be implemented in our state and city too. The web has a vast repertoire of lectures and discussions on myriads of topics already prepared and presented by eminent professors and experts in various fields. Teachers no longer have to spend hours researching for materials when they can simply add a link to these videos on their WebPages or download these lectures for use in their lecture halls. While some teachers would see this as a dereliction of their duties and perhaps a reduction of their role and status as teachers, the exercise in fact would increase and enhance them instead.

## Information Communication Technology and Constructivist Learning

Constructivist learning involves allowing students to learn by engaging in specially designed activities and projects in the classroom and outside. The teacher acting as a facilitator of learning guides them through the process while at the same time allowing them the freedom to explore and experiment. In such a situation, ICTs can play a major role in encouraging students to engage in a more pro-active form of learning where they can also learn not only from the lectures provided by their teachers but from each other as well. Besides attending online lectures and discussions held by their teachers, using ICTs students can also collaborate on projects and other curricular activities under the supervision of their respective teacher or mentors. The students can, on their own initiatives, create blogs, WebPages, discussion boards and forums to enhance their learning experience. They can also be guided in the use of social networking sites to not only keep in touch with their friends and to update their statuses but to also share their findings and points of views. Assignments, feedback and other classroom related tasks can be transacted over the web very conveniently. Smart phones, ipads, tablets and other similar gadgets can be used to provide students with regular updates, course material and other resources through specially designed apps of specific teachers made available for download and installation through the college website. Of course, this will require scheduling of the use of such gadgets before and after college hours to avoid violating the Supreme Court ban on use of mobile phones in the college premises. Using such apps, the students could attend classes without physically being

present in the classroom but with proper authentication and verification of their identity. They can also access other college sponsored virtual classrooms available on the web to gather more information and resources that they require. Allowing students to use ICTs in this manner will equip them with better tools and knowhow to complete their academic courses successfully and also increase their employability in the job market, giving them an edge over others who may not have access to such a form of learning.

## Information Communication Technology and Assessment and Evaluation

Using ICTs to conduct online surveys and tests has become the mainstay of many companies and institutions across the world. Many competitive exams are now being held online with great ease and efficiency. College and academic institutions in many parts of the world have been known to use similar software and applications to conduct their own entrance tests and assessments. Colleges in the city and the state can create/design their own assessment tools using ICTs to conduct internal class tests, terminal examinations and review tests. Such tools could also be programmed to evaluate the answers and to send the results/feedback directly to the students' phones, tablets, inbox etc. Provisions could also be made where the students can opt to take a test on a selected subject at his or her own convenient time if he or she is confident of achieving a positive outcome. And since, the teacher concern is no longer required to mark or evaluate the test; the question of adding to his/her burden will not arise.

In conclusion, it is understood that the implementation of the above discussed concepts and systems will incur much investment and require restructuring of our syllabi. However, the yield in terms of students' performances and teaching effectiveness far outweigh the cost involved. It could in fact bring in more returns as the technology becomes cheaper and the enrolment rate increases in the long run.

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# ERUPTION OF PERMANENT TEETH AMONG THE KHASI CHILDREN OF SHILLONG, MEGHALAYA

**D. K. Limbu and S. Saikia**

## ABSTRACT

*In the present study, an attempt has been made to describe the eruption of permanent teeth in the Khasi of Shillong, Meghalaya. A total of 2517children were orally examined of which 1254 were male and 1263 were female. Median age of eruption for each tooth is calculated, using Probit Transformation of Fisher and Yates (1957). The onset of permanent tooth eruption was first observed in the lower jaw of girls at 5.85±0.18years. In the study population, the permanent teeth erupt earlier in girls than the boys and the mandibular teeth erupt faster than their maxillary counterpart. All the permanent teeth (less third molars) erupt between the median ages of 5.85±0.18 and 12.3±0.25 years.*

**Key Words:** Eruption, permanent teeth, median age, sequence of eruption, Khasi.

### Introduction

Dental anthropology is defined as a study of people from the evidence provided by teeth (Hillson, 2002). It includes a study of the development of teeth in relation to age, their appearance in the mouth, and the processes of wear and other changes that occur once they are in place. Teeth being the hardest and most durable material of all parts of the body, due to the presence of enamel and dentine in them, preserve well and hence account for a large proportion of the human and pre-human fossil remains available for study. Dental eruption is the time when any part of the crown has emerged through the gingival surface. The process by which the crown of the developing tooth passes through its surroundings and is maintained in normal occlusion within the oral cavity is known as dental eruption (Rami Reddy, 1986).Variables like age, sex, heredity, socio-economic level and intrauterine environments influence the sequence and timing of tooth emergence. The chronology of tooth emergence has often been used in estimation of age.

### Materials and Methods

The present study was based on a cross sectional sample of 2517 Khasi children of Shillong, Meghalaya, aged between 5.85±0.18 and 12.3 ±0.25 years of which 1254 were boys and 1263 were girls. The Khasis Information regarding the eruption of permanent teeth was

obtained by orally examining these children who were apparently healthy. Tooth eruption of the subjects was examined with the help of a dental mirror and a spatula in a sufficient daylight. Some missing teeth were counted as erupted when the subject could recall their emergence and/or extraction. Standard techniques of data collection on dental eruption as given by Weiner and Lourie (1981) were followed. Special care was taken to determine the actual ages of the subjects. All the subjects were Christians and thus, were requested show their baptismal certificate and immunization card for the birth date record. The subjects who could not show their baptismal certificate or those whose parents failed to give correct information on age were not included in the sample. The sample comprises of only those subjects whose both the parents were Khasi. Age of the individuals was calculated according to the decimal age calendar given by Weiner and Lourie (1969) from his/her birthday to the date of examination. The coding of the teeth is as follows: I, C, P and M stand for incisor, canine, premolar and molar. Position of the numerals on lower and upper end of the letter signifies mandibular or maxillary tooth respectively. Median age of eruption for each tooth is calculated using Probit Transformation of Fisher and Yates (1957).

## Results and Discussion

Table 1 shows the percentages of permanent teeth eruption among the Khasi boys and girls of Shillong. In the present population, the permanent teeth have emerged first at 6 years of age where, the highest percentage of eruption was observed in the mandible of girls (17.97%) followed by the boys (9.45%). At this age, eruption has taken place little later in the lower jaw i.e., 5.30% and 6.45% teeth among the boys and girls respectively. In all the age-groups of boys, permanent teeth have erupted earlier in the lower jaw. The same trend was also observed in the girls up to 10 years of age. However, 11 years onward, eruption becomes faster in the maxilla of the girls. At 13 years, eruption completes in the maxilla of the girls and the mandible of boys. By 14 years of age, eruption completes in the remaining jaws i.e., the maxilla and the mandible of boys and girls respectively. Fig.1 depicts the jaw and sex-wise percentages of the permanent teeth eruption (M3 is not included) in the Khasi children.

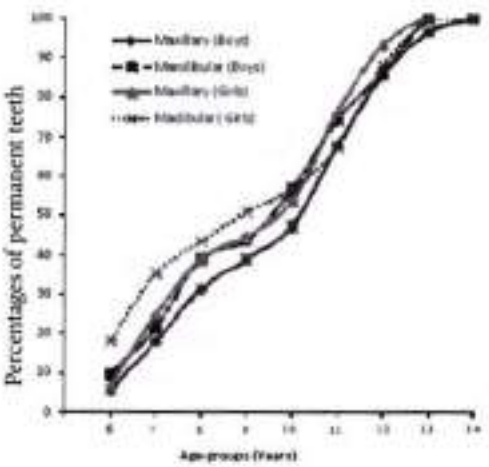


**Fig.1 Percentages of permanent teeth eruption among the Khasi boys & girls**

Table 2 shows the numbers and percentages of permanent teeth eruption among the Khasi boys of Shillong. Eruption of permanent teeth is observed first at 6years of age and it gradually increases with the increase of age. By10years, more than 50% teeth complete

eruption. In the age-groups 11, 12, and 13 years, 817(71.17%), 675(86.10%) and 991(98.31%) teeth are found erupted. By 14 years, all the permanent teeth (excludingM3) complete their eruption in the boys.

The numbers and percentages of permanent teeth eruption in the Khasi girls is shown in Table3. At the ages of 6, 7 and 8years, 106(12.21%), 318(29.89%) and415 (41.31%) teeth are erupted respectively. Thereafter, the eruption process slows down till they reach 10year, after which it again becomes faster. At 11, 12 and 13 years, the percentages of teeth eruption are recorded to be 765(71.90%), 737(90.76%) and 948(99.58%) respectively. Eruption of all the permanent teeth (excluding M3) complete by 14years of age. Fig.1 depicts the percentages of permanent teeth eruption among the Khasi children of Shillong.

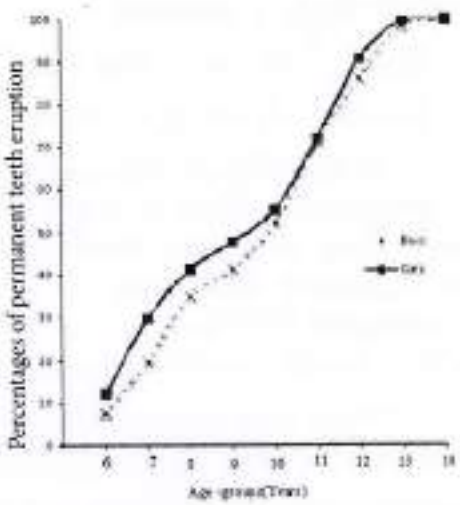


**Fig. 2. Percentages of permanent teeth eruption (M3 not included) among the Khasi boys & girls**

Table 4 shows the median age (± S.D) of tooth eruption in the Khasi children of Shillong. It is observed that among the boys, all the teeth in the lower jaw erupt earlier than the upper jaw except the second premolar ($P_2$). In the girls, all the teeth erupt earlier in the mandible except the first and second premolars ($P_1$ and $P_2$).With respect to the sex dimorphism, girls show earlier eruption timing of all maxillary and the mandibular teeth except the second mandibular premolar ($P_2$). In the present population, the permanent teeth erupt first in the mandibular first molar ($M_1$) followed by the second mandibular molar ($M_1$).This is followed by the second incisors (I2). Second molar (M2) erupts very late. All the permanent teeth (less third molars) erupt between the median ages 5.85±0.18 and 12.2±0.6years in girls and 6.55±0.0.35 and 12.3±0.25 years in the boys.

The sequence of permanent teeth eruption among the Khasi by jaw and sex is as follows:

**Maxilla:**

Male : $M^1 > I^1 > I^2 > C^0 > P^2 > P^1 > M^2$

Female : $M^1 > I^1 > I^2 > C^0 > P^1 > P^2 > M^2$

**Mandible:**

Male : $M_1 > I_1 > I_2 > C_0 > P_1 > P_2 > M_2$

Female: $M_1 > I_1 > I_2 > C_0 > P_1 > M_2 > P_2$

**Both the jaws combined:**

Male : $M_1>M^1>I_1>I^1>I_2>I^2>C_0>P_1>C^0>P^2>P^1>P_2>M_2>M^2$

Female : $M_1>M^1>I_1>I_2>I^1>I^2>C_0>C^0>P^1>P_1>P^2>M_2>P_2>M^2$

In maxilla, both the sexes show similar sequence of eruption of permanent teeth excepting the premolars. Among the males, the second premolar ($M^2$) erupts earlier to the first premolar ($P^1$) and in female it shows reverse in sequence. Like maxilla, in mandible also, all the teeth show similar trend of eruption excepting the second premolar ($P_2$) and the second molar ($M_2$).The second premolar ($P_2$) erupts earlier in the male and in female the second molar($M_2$) erupts earlier to the second premolar($P_2$).

When both the jaws are combined, all teeth show similar sequence of eruption except the canine (C0) and the premolars (P1and P2) in the present population.

Table 5 shows the percentages of the erupted permanent teeth (excluding M3) in boys when both the jaws are combined. These teeth erupt early among the Deori, Biate and the Garo boys (5years) and late (6years) among the Gallong and the Khasi. Percentages of the permanent teeth increase with the increase in age. By 14 years of age, eruption completes in almost all the populations excepting the Garo boys. Among the Garo, eruption of permanent teeth completes at 15 years of age. Fig.5 depicts the trend of eruption of the permanent teeth in some male populations.

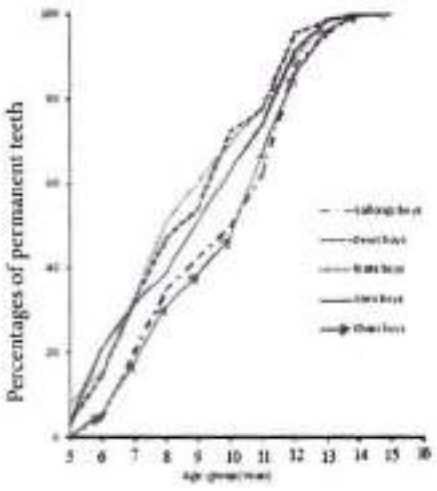


**Fig.4 Percentages of permanent teeth eruption in female populations**

Table 6 presents the percentages of the erupted permanent teeth among the girls. Among all the permanent teeth emerged, the earliest is in the Marngar and the Garo girls ( 5 years). By 6 years, all the above populations possess permanent teeth. Eruption completes earliest in the Marngar and the Khasi girls (13years) followed by the Gallong (14years). Eruption completes late among the Garo girls i.e., at 15years. Fig.6 depicts the trend of eruption of the permanent teeth among some female populations.Comparative study of the sequence of eruption of permanent teeth among some Mongoloid populations of North-East India by jaw and sex is shown in Table7. This table shows that all the mandibular teeth tend to emerge earlier than their maxillary counterparts. Most of the teeth tend to emerge earliest in the Deori boys and late among the Skachep girls and the Khasi boys. This table also reveals that the Gallong and the Khasi females are markedly advanced in their emergence timing which is reverse in the case of the Garo and the Sakachep.

Table 1 further shows that mostly the first mandibular molars ($M_1$) have emerged earlier to all other teeth, followed by the central incisor ($I_1$) and then the lateral incisor ($I_2$). The incisors are followed by the canines ($C_0$) and then the second molar ($M_2$) which emerges at last. The emergence timing for the third molar (M3) has not considered for the present study as this tooth has very high variation with regards to its time of emergence from individual to individual.

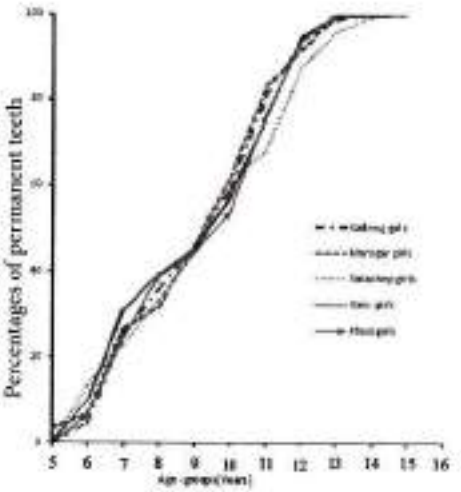


**Fig.3. Percentages of permanent teeth eruption in male populations**

Both the first mandibular and maxillary incisors ($I_1$ and $I^1$) emerge early i.e., at 5.9 years and 6.3years respectively among the Garo boys. The mandibular lateral incisor ($I_2$) emerges late i.e. 7.15years in the Khasi boys and earliest among the Sakachep boys (6.6years) followed by the Garo boys (6.9years). The maxillary lateral incisor ($I^2$) emerges earliest in the Deori boys (9.7years) followed by the Biate boys (7.40years). In the Sakachep boys this tooth emerges very late (8.6years). Among all the populations compared, the Biate boys (9.4 years) show the earliest emergence of maxillary canine ($C^9$) followed by the Deori boys (9.6years). This tooth appears very late among the Sakachep girls (11.7 years). The mandibular canine ($C_0$) appears advance among the Garo boys and the Sakachep girls (9years) whereas; in the Marngar girls and the Khasi boys (10.3years) late emergence is observed. The maxillary premolars ($P^1$ $P^2$) tend to emerge very late among the Khasi and the Gallong boys (11.3years and 11.42years), but shows advanced in the Deori boys (9.4years and 10.2years). The earliest emergence of the mandibular first premolar ($P_1$) is observed in the Garo girls (9.2years) and late in the Khasi boys (10.9years). The earliest emergence timing for mandibular second premolar ($P_2$) was recorded among the Deori and the Biate boys (10.2years) and late in the Khasi boys and girls (11.4years). The emergence of the maxillary ($M^2$) and mandibular ($M_2$) second molars in both the upper and the lower jaws was first observed in the Deori boys at11years and 10.4years respectively. These teeth emerges very late among the Sakachep children.

Sexual dimorphism for tooth emergence timing was evident in the Gallong and the Khasi as has been noted by the previous work in other populations (Clements *et.al.*,1953; Moorrees,1957; Dahlberg and Menegaz-Bock,1958; Lee *et al.*,1965; Niswander and Sujaka,1960; Nanda Chawla,1966; Mayhall *et al.*,1978).The salient features of this sexual dimorphism in the Gallong, Garo, Skachep and the Khasi are as follows: All the permanent teeth in Gallong and the Khasi emerge at markedly earlier chronological ages than their counterparts. The Khasi and the Gallong females have acquired their permanent teeth in a shorter time span (7.15-7.2years) than their male counterparts (7.45-7.55years). As the females showed earlier

emergence in all the permanent teeth, it has been suggested by Mayhall *et al.*(1978) that the earliest emerging teeth (particularly $M_1$ and $I_2$) could be considered to be a transition period in which factors controlling emergence of permanent teeth are replacing those that control the emergence of the deciduous teeth. The eruption timing of the permanent teeth among the Garo and the Sakachep is more or less reverse. In both of these tribes, emergence timings of most of these teeth are delayed in the females. The only exception was the second molar of the maxilla (12.3years), both the mandibular premolars (9.7 and10.8 years) and the second mandibular molar (11.9years) which emerge earlier in the Garo females. Among the Sakachep, the second maxillary molar (13.3years), the mandibular canine (9.5years) and the second mandibular premolar (10.5 years) emerge early.

## Sequence of Eruption

The sequence of permanent teeth eruption among some Mongoloid populations of North-East India is as follows:

**Khasi boys:**

$M_1 > M^1 > I^1 > I_1 > I_2 > I^2 > C_0 > P_1 > P^2 > C^0 > P_2 > M_2 > P^1 > M^2$

**Khasi girls:**

$M_1 > M^1 > I_1 > I^1 > I^2 > I_2 > C_0 > C^0 > P^1 > P_1 > P^2 > M_2 > P_2 > M^2$

**Garo boys:**

$M_1 = M^1 > I_1 > I^1 > I_2 > I^2 > C_0 > P_1 = C^0 > P^1 > P_2 > P^2 > M_2 > M^2$

**Garo girls:**

$I_1 > M_1 > I^1 = M^1 > I_2 > I^2 > P_1 > C_0 > P^1 > P_2 > C^0 > P^2 > M_2 > M^2$

**Sakachep boys:**

$M^1 = M_1 > I_1 > I_2 > I^1 > I^2 > C_0 > P^1 > P_1 > P^2 > P_2 > C^0 > M_2 > M^2$

**Sakachep girls:**

$M_1 > M^1 > I_1 > I^1 > I_2 > I^2 > C_0 > P^1 = P_1 > P^2 > P_2 > C^0 > M_2 > M^2$

**Gallong boys:**

$M_1 > M^1 > I_1 > I^1 > I_2 > I^2 > C_0 > P^1 > P_1 > P_2 > P^2 > C^0 > M_2 > M^2$

**Gallong girls:**

$M_1 > M^1 > I_1 > I^1 > I_2 > I^2 > C_0 > P^1 > P_1 > C^0 > P^2 > P_2 > M_2 > M^2$

**Biate boys:**

$M^1 = M_1 > I^1 = I_1 > I_2 > I^2 > C^0 > C_0 > P^1 = P_1 > P_2 > P^2 > M_2 > M^2$

**Marngar girls:**

$M_1 > M^1 > I_1 > I^1 > I_2 > I^2 > C^0 > P_1 > C_0 > P^1 > P_2 > P^2 > M_2 > M^2$

**Deori boys:**

$M_1 > M^1 > I_1 > I^1 > I_2 = I^2 > P^1 > C^0 > C_0 > P_1 > P_2 = P^2 > M_2 > M^2$

No sex differences could be observed for the populations compared in the present study since the sequence of emergence in the mandible and that of the anterior teeth of the maxilla ($M^1I^1I^2$) in both sexes is same. The only exception was the Garo females, where the sequence of emergence is observed as $I_1M_1I_2$ and $I^1M^1I^2$. Gingival emergence of the canine relative to the premolars has been ascribed to sexual dimorphism, $C_0P^1$ for females and $P^1C_0$ for males (Adler and Godeny, 1952; Clements *et al.*, 1953). Excepting both the sexes of the Khasi, Garo and the Deori boys, all have displayed the usual predominantly female sequence $C_0P^1$, while, none have shown the mandibular canine-maxillary first premolar ($P^1C_0$) sequence.

Sexual dimorphism with respect to the canine-second premolar sequence in the maxilla ($C^0P^2$ for females, $P^2C^0$ for males) has also been reported (Hurme, 1957; Steggerda and Hill, 1942). The above mentioned predominant female sequence ($C^0P^2$) is absent in all populations. The predominantly male sequence in the maxilla, $P^2C^0$, prevailed only among the Khasi and the Gallong boys.

Data on median ages of emergence for the different ethnic groups of North-East India indicate that the dominant sequence for both sexes is $C_0P_1$ in the mandible (Table 7.) which is observed only among the Khasi, Garo and the Deori boys. The $P_1C_0$ sequence has been reported only in the Garo and the Marngar girls.

Table7 further shows that the relative emergence of the mandibular second premolar ($P_2$) to its second molar ($M_2$) may be indicative of dimorphism in the majority of the ethnic groups. The emergence sequence $P_2M_2$ was observed in all the populations and both the sexes. The only exception was the Khasi females. The sequence $P_2M_2$ is relatively ancient, and the reverse ($M_2P_2$) which is present in the Khasi girls is uncommon in modern human species. However, Garn and Lewis (1963) have suggested the possibility of having genetic control of the $P_2M_2$ and $M_2P_2$ sequences. Females at large are evolutionarily more advanced than males. The maxillary sequence, $P^2M^2$, did not reveal sex differences in all the populations compared.

The mandibular first molar - first incisor sequence also seems to show polymorphism. The $M_1I_1$ sequence predominates in both the sexes in many populations. The $I_1M_1$ sequence which is uncommon in human has been reported in the Garo females. That the $I_1M_1$ sequence has not been found in the early Hominids and is only occasionally reported in modern human suggests that the "field" has shifted mesially to include the first molar (Wallace, 1977). The sequence polymorphism elaborated above has been suggested to be due to the

genetically determined differences in the tooth formation timing and can be demonstrated within populations (Garn *et.al.*, 1973). The sexual dimorphism for the above sequences observed in various populations is clearly due to evolutionary trends, as early Hominids were also sexually dimorphic in this respect in the time of tooth emergence.

The above sequence of tooth eruption shows that the earliest tooth to be emerged in most of the populations of North-East India considered for the present comparative study is the first mandibular molar ($M_1$) followed by the first maxillary molar ( $M^1$ ).Only in the Garo girls, the earliest tooth to erupt is the mandibular first incisor($I_1$) and among the Sakachep and the Biate boys it is the maxillary first incisor($I^1$). Anterior teeth have emerged earlier than their posterior counterpart in all the populations compared. The second maxillary molar ($M^2$) emerges at last in all the populations compared followed by the mandibular second molar ($M_2$). Only the Khasi children deviate from this trend i.e. the last tooth to emerge in the Khasi boys is the first maxillary premolar ($P^1$) and in the girls, it the second mandibular premolar($P_2$). The eruption timing of the canine and the premolars falls in between the incisors and the molars, however; they do not show any pattern of eruption. When compared with some Mongoloid populations of North-East India, the Khasi population shows late eruption timing.

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**Table1. Numbers and percentages of permanent teeth among the Khasi children (Jaw-wise)**

| Age (Yrs) | Maxilla($M^3$ not included) | | | | Mandible($M_3$ not included) | | | |
|---|---|---|---|---|---|---|---|---|
| | Boys | | Girls | | Boys | | Girls | |
| | No. of teeth | Percentages | No. of teeth | Percentages | No. of teeth | Percentages | No. of teeth | Percentages |
| 6 | 23 | 5.30 | 28 | 6.45 | 41 | 9.45 | 78 | 17.97 |
| 7 | 80 | 17.86 | 131 | 24.62 | 96 | 21.43 | 187 | 35.15 |
| 8 | 109 | 31.14 | 158 | 38.92 | 136 | 38.86 | 176 | 43.35 |
| 9 | 174 | 38.84 | 206 | 44.59 | 196 | 43.75 | 235 | 50.87 |
| 10 | 205 | 47.23 | 203 | 53.70 | 246 | 56.68 | 215 | 56.88 |
| 11 | 389 | 67.77 | 406 | 76.32 | 428 | 74.56 | 359 | 67.48 |
| 12 | 336 | 85.71 | 379 | 93.35 | 339 | 86.48 | 358 | 88.18 |
| 13 | 487 | 96.63 | 476 | 100.00 | 504 | 100.00 | 472 | 99.16 |
| 14 | 476 | 100.00 | 392 | 100.00 | 476 | 100.00 | 392 | 100.00 |

**Table 2. Numbers and percentages of permanent teeth among the Khasi boys (Both the Jaws combined)**

| Age (Yrs) | No. of teeth (M3 not included) | Percentages |
|---|---|---|
| 6 | 64 | 7.37 |
| 7 | 176 | 19.64 |
| 8 | 245 | 35.00 |
| 9 | 370 | 41.29 |
| 10 | 451 | 51.96 |
| 11 | 817 | 71.17 |
| 12 | 675 | 86.10 |
| 13 | 991 | 98.31 |
| 14 | 952 | 100.00 |

**Table 3. Numbers and percentages of erupted permanent teeth among the Khasi females (Both the Jaws combined)**

| Age (Yrs) | (M3 not included) | Percentages |
|---|---|---|
| 6 | 106 | 12.21 |
| 7 | 318 | 29.89 |
| 8 | 334 | 41.31 |
| 9 | 441 | 47.73 |
| 10 | 418 | 55.29 |
| 11 | 765 | 71.90 |
| 12 | 737 | 90.76 |
| 13 | 948 | 99.58 |
| 14 | 784 | 100.00 |

**Table 4. Median age (± S.D) of permanent teeth eruption in the Khasi children (M3 not included)**

| Jaw | Sex | $I^1$ | $I^2$ | $C^0$ | $P^3$ | $P^4$ | $M^1$ | $M^2$ |
|---|---|---|---|---|---|---|---|---|
| Maxilla | Boys | 7.45 ±0.35 | 8.35 ±0.35 | 11.05 ±0.23 | 11.3 ±0.38 | 11.25 ±0.30 | 6.8 ±0.38 | 12.3 ±0.25 |
| | Girls | 7.15 ±0.33 | 7.75 ±0.28 | 10.05 ±0.33 | 10.1 ±0.05 | 10.65 ±0.33 | 6.2 ±0.31 | 12.2 ±0.60 |
| Jaw | Sex | $I_1$ | $I_2$ | $C_0$ | $P_1$ | $P_2$ | $M_1$ | $M_2$ |
| Mandible | Boys | 7.15 ±0.33 | 7.75 ±0.35 | 10.3 ±0.40 | 10.9 ±0.35 | 11.4 ±0.25 | 6.55 ±0.35 | 11.65 ±0.20 |
| | Girls | 6.45 ±0.25 | 6.95 ±0.30 | 9.7 ±0.50 | 10.5 ±0.35 | 11.4 ±0.23 | 5.85 ±0.18 | 11.0 ±0.38 |

**Table 5. Percentages of Permanent teeth in some Mongoloid male populations of North-East India**

| Age (Yrs) | Populations | | | | |
|---|---|---|---|---|---|
| | Gallong (n=494) | Deori (n=217) | Biate (n=190) | Garo (n=287) | Khasi (n=1254) |
| 5 | 0.00 | 3.06 | 7.86 | 3.07 | 0.00 |
| 6 | 4.39 | 14.45 | 15.18 | 21.03 | 5.30 |
| 7 | 19.81 | 31.96 | 32.71 | 31.71 | 17.86 |
| 8 | 35.05 | 47.11 | 50.99 | 39.02 | 31.14 |
| 9 | 42.48 | 54.28 | 60.51 | 51.42 | 38.84 |
| 10 | 49.86 | 72.32 | 69.51 | 63.00 | 47.23 |
| 11 | 62.54 | 77.72 | 78.21 | 74.31 | 67.77 |
| 12 | 87.80 | 95.50 | 89.64 | 91.57 | 85.71 |
| 13 | 95.60 | 98.64 | 98.74 | 98.85 | 96.63 |
| 14 | 100.00 | 100.00 | 100.00 | 99.86 | 100.00 |
| 15 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

**Table 6. Percentages of Permanent teeth in some Mongoloid female populations of North-East India**

| Age(Yrs) | Populations | | | | |
|---|---|---|---|---|---|
| | Gallong (n=515) | Marngar (n=335) | Sakachep (n=77) | Garo (n=303) | Khasi (n=1263) |
| 5 | 0.00 | 3.57 | 0.00 | 0.31 | 0.00 |
| 6 | 4.57 | 6.58 | 13.39 | 9.95 | 6.45 |
| 7 | 25.08 | 26.60 | 22.80 | 30.99 | 24.62 |
| 8 | 35.79 | 31.60 | 33.33 | 39.41 | 38,92 |
| 9 | 45.90 | 45.76 | 44.28 | 45.00 | 44.59 |
| 10 | 59.14 | 61.55 | 61.73 | 57.14 | 53.70 |
| 11 | 80.67 | 82.95 | 67.85 | 75.59 | 76.32 |
| 12 | 93.77 | 91.41 | 87.24 | 94.64 | 93.35 |
| 13 | 98.58 | 100.00 | 95.91 | 99.37 | 100.00 |
| 14 | 100.00 | 100.00 | 99.28 | 99.60 | 100.00 |
| 15 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

**Table 7. Median age (± SD) of Permanent tooth eruption among some Mongoloid populations of North-East India (M3 not included)**

| Popula-tions | Author | Maxilla(Yrs) | | | | | | | Mandible(Yrs) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I^1$ | $I^2$ | $C^0$ | $P^1$ | $P^2$ | $M^1$ | $M^2$ | $I_1$ | $I_2$ | $C_0$ | $P_1$ | $P_2$ | $M_1$ | $M_2$ |
| Gallong boys | Limbu (1996) | 7.55 (±0.25) | 8.52 (±0.22) | 11.45 (±0.32) | 10.55 (0.20) | 11.42 (0.26) | 6.52 (0.40) | 12.67 (±0.22) | 6.55 (±0.18) | 7.60 (±0.18) | 9.87 (0.31) | 10.75 (0.20) | 11.32 (±0.15) | 6.35 (0.20) | 11.97 (0.18) |
| Gallong girls | Limbu (1996) | 7.20 (±0.23) | 8.37 (±0.22) | 10.70 (±0.35) | 9.77 (±0.43) | 10.77 (±0.31) | 6.35 (±0.20) | 11.90 (±0.23) | 6.40 (±0.20) | 7.45 (±0.19) | 9.45 (±0.20) | 10.05 (±0.27) | 10.85 (±0.35) | 6.07 (±0.15) | 11.35 (±0.37) |
| Marngar girls | Tsochu (2002) | 7.05 (±0.40) | 7.95 (±0.35) | 10.00 (±0.35) | 10.25 (±0.27) | 10.30 (±0.30) | 6.70 (±0.45) | 11.25 (±0.20) | 6.65 (±0.45) | 7.80 (±0.35) | 10.30 (±0.35) | 10.20 (±0.22) | 10.25 (±0.20) | 6.45 (±0.45) | 11.15 (±0.25) |
| Deori boys | Syiemleih (2004) | 6.90 (±0.05) | 7.00 (±0.45) | 9.60 (±0.05) | 9.40 (±0.05) | 10.20 (±0.45) | 5.90 (±0.05) | 11.00 (±0.05) | 6.40 (±0.35) | 7.00 (±0.45) | 9.80 (±0.45) | 9.90 (±0.05) | 10.20 (±0.05) | 5.80 (±0.40) | 10.40 (±0.06) |
| Biate boys | Lotha (2005) | 6.50 (±0.40) | 7.40 (±0.50) | 9.40 (±0.55) | 9.80 (±0.60) | 10.50 (±0.50) | 5.70 (±0.40) | 11.10 (±1.05) | 6.50 (±0.35) | 7.10 (±0.45) | 9.50 (±0.55) | 9.80 (±0.60) | 10.20 (±0.60) | 5.70 (±0.35) | 10.60 (±0.60) |
| Garo boys | Kasar (2006) | 6.30 (±0.40) | 7.90 (±0.05) | 9.70 (±0.45) | 9.80 (±0.35) | 10.90 (±0.30) | 5.80 (±0.30) | 12.30 (±0.30) | 5.90 (±0.35) | 6.90 (±0.30) | 9.00 (±0.35) | 9.70 (±0.40) | 10.80 (±0.45) | 5.80 (±0.30) | 11.90 (±0.25) |
| Garo girls) | Lalrammua-na (2006) | 6.60 (±0.20) | 7.80 (±0.40) | 10.70 (±0.35) | 9.80 (±0.40) | 11.20 (±0.14) | 6.60 (±0.35) | 12.10 (±0.40) | 6.00 (±0.30) | 7.10 (±0.25) | 9.60 (±0.25) | 9.20 (±0.30) | 10.70 (±0.20) | 6.20 (±0.25) | 11.50 (±0.35) |
| Sakachep boys | Lotha (2009) | 6.90 (±0.35) | 7.50 (±0.50) | 11.10 (±0.15) | 10.10 (±0.10) | 10.40 (±0.20) | 6.30 (±0.45) | 13.30 (±0.40) | 6.40 (±0.45) | 6.60 (±0.35) | 9.50 (±0.25) | 10.30 (±0.10) | 10.50 (±0.20) | 6.30 (±0.45) | 12.40 (±0.40) |
| Sakachep girls | Lotha (2009) | 7.50 (±0.25) | 8.60 (±0.25) | 11.70 (±0.20) | 10.40 (±0.25) | 10.60 (±0.25) | 6.80 (±0.30) | 12.90 (±0.30) | 7.20 (±0.30) | 7.50 (±0.25) | 9.00 (±0.15) | 10.40 (±0.25) | 10.90 (±0.30) | 6.70 (±0.25) | 12.60 (±0.25) |
| Khasi boys | Present Study | 7.45 (±0.35) | 8.35 (±0.35) | 11.05 (±0.23) | 11.30 (±0.38) | 11.25 (±0.30) | 6.80 (±0.38) | 12.30 (±0.25) | 7.15 (±0.33) | 7.75 (±0.35) | 10.30 (±0.40) | 10.90 (±0.35) | 11.40 (±0.25) | 6.55 (±0.35) | 11.65 (±0.20) |
| Khasi girls | Present study | 7.15 (±0.33) | 7.75 (±0.28) | 10.05 (±0.33) | 10.10 (±5.05) | 10.65 (±5.33) | 6.20 (±3.10) | 12.20 (±6.10) | 6.45 (±0.23) | 6.95 (±0.30) | 9.70 (±0.50) | 10.50 (±0.35) | 11.40 (±0.23) | 5.85 (±0.18) | 11.00 (±0.38) |

# BODO ACCORD: PERSPECTIVES AND CHALLENGES FOR GOOD GOVERNANCE AND INCLUSIVE DEVELOPMENT IN ASSAM

**Biswajit Mohapatra**

## ABSTRACT

*Peace accords are being entered into within gusto with the hope that the same would contribute towards peace and good governance so that the people can benefit from the various developmental programmes being launched by the Union and State Governments as part of poverty alleviation and also economic development in the heretofore neglected region of India. In my paper, I have analyzed the conditions under which the signing of Peace Accords in NE India, particularly the Bodo Peace Accord took place and how it still falls short of meeting the expectations of the Bodos in particular, for ensuring inclusive development in the area and how the urgent steps for good governance can deliver this promise in contrast to mere governance, which complicates the existing order.*

**Key Words:** Bodo Accord, Good Governance, Inclusive Development, Assam,

### Introduction

In today's era of Globalization, good governance and respect for fundamental human rights and freedoms are considered to be prerequisites for sustainable human development in our society. Accordingly the governments of many countries, particularly, the developing countries, have come under pressure to strictly emphasize governance and human rights issues within their domestic arena to not only promote economic recovery in the short run and also achieve sustainable and equitable human development in the long run.

According to United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), Good governance has 8 major characteristics. It is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law. It assures that corruption is minimized, the views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision-making. It is also responsive to the present and future needs of society. (UNESCAP: Good Governance)[1]

## North Eastern Scenario and Assam: Peace Accords

In the last few decades, most of the states in northeastern part of India have been experiencing difficult times because of ethnic conflicts, violence and antagonism amongst several tribes. The ongoing and seemingly intractable tragedy of ethnic conflicts is leading to high degree of extremist activities and multiplicity of extremist groups. On the one hand the different ethnic insurgent groups active here claim that they are engaged in their fight for recognition, political and economic rights and sometimes for independence

Over the years, several attempts have been made to sign peace accords between the involved parties, i.e., the insurgent groups, state governments and the Union Government to bring these raging conflicts to an end. Immediately after independence, in 1949, the first ever peace accord was signed .between 1949 to 2005, thirteen peace accords were signed. And thereafter more have been also signed with various groups.

When we tend to analyze the various accords signed so far, they have extended from that of mere ceasing of hostilities to a more comprehensive MoU offering more power to local level units of governance and also more central assistance, known as liberal financial package as a rehabilitation measure.

These kind of accords are normally entered to by the government with a view to ending of the conflicts and for initiation of measures to do away with the development gap that exists in case of the affected area by special administrative measures. Unfortunately the finalized accords have often been used as framework for further negotiations aimed at garnering more concessions, which often have become sore points between the government and the concerned insurgent group, in the process endangering the fulfillment of provisions of peace accord or derailing it.

The signing of these accords though is marked with some kind of celebration as if the end of the conflicts is already achieved, yet the reality presents us with a different picture. Though it is supposed to be a milestone for both the purpose of stopping the violence and for ending it in the long run, yet except one, in case of Mizoram, the accords that have been signed have not led to any kind of enduring peace.

It's true in case of India's North East, the various peace accords do tend not to be inclusive as there is always the danger of any provision agreed to with any one group does stand to run contradictory to the interests of other ethnic groups in the neighbourhood. Hence the accords signed do often run the risk of not including provisions for settlement of core issues or contain provisions which are merely superficial, as it is inserted with the intention of using the language as a cloak so as to not to enrage other ethnic groups who might stand up in opposition to the various provisions of the Peace Accord, thus threatening the implementation of the accord.

## Bodo Accord and ABSU

On February 10, 2003, the militant group Bodo Liberation Tigers (BLT) signed a new Bodo Accord, with the Centre and the state government after conclusion of 30 rounds of discussions. This development was preceded by a series of informal talks which had started in 1999 and the declaration of formal ceasefire earlier on March 15, 2000 (The Telegraph: 2003).[2]

On December 7, 2003, in the midst of tumult, high degree of excitement and delight, the swearing in of the interim Executive Council of the Bodoland Territorial Council at Kokrajhar in Assam marked a new beginning as the Bodo Liberation Tiger (BLT) leaders after having bid a farewell to arms had also been successful in reaching a negotiated settlement with the Government of India with their commitment to espouse a democratic way of life. The other militant groups especially the United Liberation Front of Asom (ULFA) and the National Democratic Front of Bodoland (NDFB) were also expected soon to follow the example set by the BLT, which had renounced violence and embraced peace with justice and development through a democratic process .On the previous day,6th December,2003,more than 2600 BLT militants bid farewell to arms and had surrendered their weapons paving the way for abandonment of violence and confrontational means for establishment of peace in this region.

At the time when the National Democratic Front of Boroland decided to talk on the issue with the Government of India by suspending their more than two decades' armed struggle, the All Bodo Students' Union (ABSU) took up agitation programme for the creation of a separate Boroland State within the framework of Indian Constitution, by mobilizing two lakhs of letters signed by the Bodo people to the Prime Minister of India ,stating their movement for demanding a separate Bodoland State as the most peaceful, justified and democratic movement. ABSU's steps to boost the continued demand of the Bodo people also have received a lot of appreciation amongst the various sections of Bodo people.

The revival of the movement for the creation of a separate State by the ABSU and the extension of public support by the Boro Peoples' Forum for Peace and Rights (BPFPR) possibly proves beyond doubt the failure of the Bodoland Territorial Council to solve the Bodoland imbroglio. It also underscores the urgent need for expediting the ongoing peace process with the National Democratic Front of Boroland (P) for bringing about an amicable solution and that nothing short of a separate State is acceptable to the Bodo people. The mere appointment of an interlocutor by the Indian Government recently is considered by the Bodo people, as nothing but a reflection of the complacent attitude of the Indian Government and that this can't help bring about any solution as the government appears not to be having the political will and a practical approach to tackle the demand in respect of the interests of concerned people. Suspicions have also been raised that the government is probably not sincere towards establishing peace in the country as it is working to suit the

interest of the concerned political party alone which is in power and not considering the genuine demands of the region.

In the words of John Paul Lederbach,"An agreement represents the process for continuing the conflict with new definition (*Lederach*: 1999)."[3] It's true that these accords which have been signed in case of many groups have been piecemeal and have left the important stakeholders out of the realm of these accords and hence these arrangements have proved to be impermanent and undercut eachother. These accords also have demonstrative affects as they have prompted numerous other ethnic groups to demand the same privileges as are available to others by way of accords. Johan Galtung has promulgated the idea that peace building involves radical change to overcome contradictions that lie at the root of conflict. (Galtung: 1996).[4] John Paul Lederach has also characterized peace building as "a comprehensive concept that encompasses, generates, and sustains the full array of processes, approaches, and stages needed to transform conflict toward more sustainable, peaceful relationships (Lederach: 1997)."[5] There is nearly a consensus amongst most academics and policy-makers that peace building entails a multi-layered approach involving many sectors and including local, national, regional, and international actors.( Keating and Knight: 2004).[6]

An inclusive, consultative and sustained peace process taking into account the interests of all stakeholders can only be a kind of guarantee and will act in the long run in containing the ethnic conflicts in the region. Besides, due to the fact that there has not been any significant rise in the development of the region, this has led to rising levels of poverty, unemployment and underemployment, which has also contributed towards the prevailing instability in the social, economic and political arena. These different issues also challenge our capacity to adopt pro-poor, sustainable development policies and strategies based on our indigenous thinking, for increased access of people to livelihoods and decent employment opportunities especially for youths and women.

The successful tackling of these challenges and ensuring of economic growth and development requires a multifaceted approach that combines both macro-and-micro-economic interventions and also for addressing both the quantity and quality of employment and economic growth and the reorientation and consequent strengthening of the national architecture for public service and justice delivery, rule of law and fundamental freedoms, as well as participatory democratic approaches for the people of our country.

In this respect, it has been felt crucial that four main concerns, viz,

a) Enhancement of economic management and pro-poor development policies and strategies,

b) Increased access to livelihoods and decent employment opportunities especially for youths and women,

c) Enhanced accountability in the management of public resources and service delivery;

d) Increased people's participation in democratic governance structures and processes; will have to be addressed by way of effective policy formulation and implementation of programmes, deeply rooted in the age old Indian liberal values, as then these would not only prove to be of immense help for creation of economic opportunities and thereby increase women's participation in economic and political life would discourage violent activities in our society besides ushering in robust economic recovery and growth and sharply reduce poverty. As a long term measure, greater emphasis is also called for on having renewed focus on capacity building of political and institutional structures to enable them to have greater coherence through joint programming initiatives and smooth implementation of strategies for pro-poor, sustainable growth and increase in women's participation in the body politic's economic and political life.

**(Endnotes)**

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# ADAPTING THE FOLK NARRATIVE OF U MANIK RAITONG INTO FILM

**Etawanda Saiborne**

## ABSTRACT

*Adapting a literary work into film has always attracted the film makers from the very early days of cinema itself. It is in fact a process of translating the literary text into a visual text. In Meghalaya, there are few folklore narratives which have been adapted and reconstructed into films. The first Khasi feature film in colour was based on folklore theme and it was called* ***Manik Raitong*** *or* ***Manik the Wretched****. The film Manik Raitong marks the beginning of the convergence and interaction of Khasi oral tradition and film. The greatest strength of films adapted from folkloric themes is the ability of the moving picture to fill the gaps which oral narratives in their original form contain.*

**Key Words**: Adaptation, Folk Narrative, Film, U Manik Raitong

### Introduction

Adaptations differ from imitations. An imitation is "a thing intended to simulate or copy something else" (oxforddictionaries.com 2015). An adaptation by no means intends to stay as true to the original as possible, but modification assumes its right of identity as a new entity. In short, the adapter is the creator. In this way the adaptation is as distinct a work of art as the original work that it embodies. The Oxford English Dictionary (2015) provides the definition of adaptation as,

> "[1.] The application of something to a particular end or purpose; the action of applying one thing to another or of bringing two things together so as to effect a change in the nature of the objects. [2.] The action or process of adapting one thing to fit with another, or suit specified conditions, esp. a new or changed environment. [3.] The quality or state of being adapted or suitable for a particular use, purpose, or function, or to a particular environment; adaptedness. [4.] An altered or amended version of a text, musical composition, etc., (now esp.) one adapted for filming, broadcasting, or production on the stage from a novel or similar literary source. [5.] The action or process of altering, amending, or modifying something, esp. something that has been created for a particular purpose, so that it suitable for a new use. [6.] A result of a process of adapting or being adapted; an adapted or modified version or form; a modification."

It is abundantly clear from these definitions that adaptation is as much the process of enunciation of a thought, an idea or a concept, as it is the enunciated product. Hutcheon (2006: 8) in her work *The Theory of Adaptation* further adds that adaptation can also be the

"(1) acknowledged transposition of a recognizable other work or works

(2) Creative *and* an interpretive act of appropriation/salvaging

(3) An extended intertextual engagement with the adapted work"

These definitions seem to be based on the sender-receiver model of communication studies whereby three factors involved in the process can be distinguished. These are *the sender*, *the message* and *the receiver* who receives the message through a medium. If the above definitions can be adapted to the concept of the film and its text (the novel, screenplay or folktale), it is clear that the sender or adapter sends a message (the film's text) to the receiver or viewer through the medium of film. This suggests that the source of the film text is what Hutcheon (2006: xiii) calls the "adapted text." Gennette (1997: 5) calls this the "hypotext" and the adaptation the "hypertext."

Adaptation is as old as human thought. It is the modified reproduction of an expression of thought. Hutcheon (2006: 2) states that,

> *"Adaptations are obviously not new to our time; Shakespeare transferred his culture's stories from page to stage and made them available to a whole new audience."*

## Film Adaptation

The first narrative film was also the first film adaptation. In 1896, Thomas Edison and William Heise hired the actors May Irwin and John Rice to re-enact the final scene of John McNally's stage production *The Widow Jones*. The resulting 18 second film called *The Kiss* was also one of the first films to be shown commercially to the public. Shortly after this *Attack on a China Mission* (1900) directed by James Williamson was made. Although not an adaptation, it was significant, in that, it was dubbed "the most fully developed narrative film" of its time. Other films soon followed and the rest is, as they say, "History".

Film is a narrative form that has overtaken literary narratives in popularity (McFarlane 1996: vii). Having recognised the fact that film is a narrative form, filmmakers draw from both literary and oral sources as ready-made solutions to creativity woes. Not only is this option less time consuming but it also allows them the use of narratives that do, in fact, work and have been proven through trail.

The adoption of film as a new expression of the literary narrative was a natural eventuality. Film is the art of literature in visual form; due to kinetics of movement

afforded by film, it quickly became a medium for narratives to break through. Adapting a literary work into film had always attracted the film makers from the very early days of cinema itself. It is in fact a process of translating the literary text into a visual text. As George Bluestone (1968: 1) summarizes the difference between literary and film narrative as "between the percept of the visual image and the concept of the mental image lies the root difference between the two media."

## A Summary of the Film Adaptation of U Manik Raitong

The adaptation of the story U Manik Raitong in the filmic form is somewhat different from the literary form. First of all the title is changed to *Manik Raitong* instead of *U Manik Raitong*. This was to make the film more marketable. Manik is a cowherd and a poor village boy who whose most treasured possession is his flute on which he plays haunting and sad melodic tunes. Ka Lieng Makaw, a young girl from the same village, is his friend and sweetheart. The film begins with the death of Manik's father, while Manik was on the hillside tending to his cows. The heart-broken duo of Manik and his sister, Bida are now orphaned and at the mercy of hardship and toil. His father's legacy was a large burden of debt that now fell upon Manik's young shoulders. To avoid becoming a bonded laborer, Manik decided to give up playing his flute and worked very hard to repay all his father's debts. It was Lieng who encouraged him to play on his flute again. On the day of a local festival, Manik played his flute and the young maidens of the village dressed in all of their finery danced to the tunes. Among the maidens was Ka Lieng Makaw whose grace and elegance caught the eye the local chief, *U Syiem*. He is smitten by the fresh beauty of Ka Lieng Makaw. Having been subject to his sister, *Ka Syiem's* constant nagging about his marriage, *U Syiem* sees this as a golden opportunity to not only escape his sister's nagging but also to finally take a wife who is as beautiful as she is young. Having made up his mind, *U Syiem* informs his sister that he had finally found the woman who would be his queen, his *Mahadei*.

As is custom, a representative of *U Syiem's* family goes to Lieng's house to offer the great honor of marriage terms to Lieng's family. The mother was elated at the prospect, but her father being of a more circumspect nature pleaded for time to consider the request. However, circumspection, not being the equal of Fear and Respect quickly gave way to an official negotiation of marriage. Upon hearing the news of her betrothal to *U Syiem*, Lieng, who by this time was in love with Manik Raitong, is heartbroken. She rushes off to see Manik who told her that he had already heard the news, and since he had nothing to offer her, he advised Lieng to marry *U Syiem*. Lieng is shocked to numbness by his rejection and distressed beyond words to see his refusal to fight a love she believed in. With Manik's withdrawal, Lieng is left with no choice but to obey the diktat of her family. She reluctantly agrees to marry *U Syiem*.

The marriage took place with the usual pomp and splendor that befitted a ruler's marriage. However, the unhappy Lieng could show no warmth towards her new husband. On the wedding night *U Syiem* had to leave his new queen to attend to matters of the state – an emergency involving a tiger attack, and the marriage remained unconsummated. Later, when *U Syiem* tries to win over his bride, Lieng remains cold and unresponsive. For days *U Syiem* and his sister, *Ka Syiem* tried to talk her out of her silence and apparent apathy, but Lieng remained aloof and detached. Tired of her continued coldness, *U Syiem* lost his patience and lashed out in anger. Lieng responded in kind. Angry and hurt by Lieng's attitude, *U Syiem* arranges to send her back to her home in the village; subtly insinuating that she was barren.

The very next day *U Syiem* went for a two-year journey to visit his outer domain. Stung by the dishonour that she suffered, Lieng refused to come out of her shell. She kept to herself and was no longer sharing the happy, friendly relationship she used to have with the other village girls. A change came one night when she heard the famililiar, plaintive notes of Manik's flute, *ka sharati*. Leing was tormented by the notes of the flute, reverberating and resonating in the depths of the night. The strings of her heart were wrenched into tangled cords, fluttering helplessly, as note after painful note reminded her of her lost love. Sleep eluded her as she tossed and turned restlessly on her bed. Night after night the enchanting notes from the bamboo flute reminded her of how near Manik was and how far apart they had grown. One stormy night, however, the flute was silent. She strained her ears but she heard nothing. There was just the harsh, wet noise of the torrential rain pattering on the roof and walls. Disturbed and worried, she quietly slipped out of her house, and veiled by the curtain of rain, proceeded to Manik's humble little hut. Manik reaction, when he saw her, was one of shock, "*Mahadei!*" he uttered, "What are you doing here?" Try as he might he could not dissuade her against staying. Lieng embraced him and told him, "I am no *Mahadei*. I am Lieng the woman you love". "Please don't send me away Manik." The long suppressed emotions erupted as Manik took her into his arms and made love to her as the rain poured outside his little hut.

Soon a baby boy was born to Lieng. When *U Syiem* returned he was as shocked to find that Lieng had mothered a child in his absence. Bringing Lieng back to the palace, *U Syiem* insisted on knowing the identity of the man who has fathered the child. But Lieng obstinately refused. *U Syiem* then decided to test all the men in the community. He ordered his ministers to summon all the men of the village to a general *durbar* (a village council meeting). They were each asked to bring a banana so as to offer it to the child. Any man whose offering the child accepted would be assumed to be the boy's father. Each man offered a banana to the child but he did not even look at them. *U Syiem* was baffled. Manik Raitong being a social outcast had not heard of the summons and so he did not attend. Hearing this *U Syiem* sent for him. Manik arrived making no attempt to hide the fact that he was, in fact, the boy's father. Casually, as if familiar by practice, Manik picks up his child, who is

obviously very excited to see him. Manik knowing fully well the seriousness of his breach of the moral code of the land is ready to be punished for it. *U Syiem* and his ministers decided to punish him by flogging him in front of everyone on the market day. Manik, however, told *U Syiem* that it would be better for him to die than to face the humiliation of the dishonour. Manik Raitong's request was, "*Be pleased to prepare a funeral pyre, and I will burn myself thereon, wicked man that I am.*" They agreed to his request. A funeral pyre was lit. All eyes turned towards the sweet yet bitter sound of the familiar flute and the people saw Manik, arrayed in all his finery, framed against the orange sky playing his flute, moving slowly but surely towards the pyre. Soon many of those who were witness to this event began to weep, the people gathered there, moved by Manik's stunning beauty, the exquisiteness of his music, and the tragedy of his love.

Ka Lieng Makaw, who was locked in her chambers, felt the anguish most of all. When all was quiet she crept quietly out of the palace, and when she was out of ear-shot of those who had been her captors, she screamed as she ran, pleading to be taken to wherever her love was leaving for. Manik inching towards the flames playing the most heart-wrenching melody and he turned his tear-drenched face away. As the tongues of fire leapt up towards the darkening sky, Manik planted his flute on the ground and proceeds towards the pyre.

## Adapting the Folk Narrative of U Manik Raitong into Film

It is apparent that the film *Manik Raitong* borrows heavily from oral and literary tradition of the well-loved tale of *U Manik Raitong*. It is also equally apparent that the text used to adapt the story of U Manik Raitong and render it in filmic form is not taken from a single original text or 'ur' text since such a text is not in existence. The film rendition appears to be an amalgamation of texts in both the vernacular as well as English. This is consistent with the observation that films based on folktales or fairy tales usually borrow from more than one text source (Eisfeld 2014:28). Owing to the length of the folk legend, new subplots have been added to the film to make it more screen-friendly. These new subplots are not found in any of the literary or oral sources that form the basis of this study and appear to have been added as an after-thought. This has added a new dimension to the age-old tale of U Manik Raitong.

Eisfeld explains this

> "Whenever a tale in the oral tradition of storytelling was re-narrated, a new version of the former tale emerged with it, growing and splitting into innumerable branches" (ibid.: 21).

In the case of the story of U Manik Raitong, the tale had grown. New archetypes as well as sub-plots added to the story. Although the addition of sub-plots may add length to the story they may not always enhance the cohesion and coherence of the story-line.

In fact some of the sub-plots watered down the character of Manik Raitong. The best instance is the sub-plot which entails Manik Raitong becoming the village hero after he locates a water source. As argued above this obfuscates the main plot to the point that there is a blurring effect between the character of Manik Raitong who is an outcast as his name suggests and the Manik Raitong who is a village hero. We perceive this as a mistake in characterisation and portrayal of the film character.

A number of characters otherwise not present in the narratives are also added. These include *Ka Syiem*, *U Kni*, Ka Lieng Makaw's friends, *U Syiem Khynnah*, the members of the village *durbar* and a number of minor characters are included in the film narrative.

While the additional sub-plots and additional characters could have lent dimension and substance to the film, it was our perception that the sub-plots detracted the viewer from the main plot – that of the tragic love story between Ka Lieng Makaw and U Manik Raitong. We are also swayed to the opinion that the role played by the additional characters only served to complicate the telling of the story without adding any substance to the narrative since many of their roles were obscured, vague and altogether pointless. In our observation the role of the minor characters was to heighten the drama of the filmic atmosphere; this was however unsuccessful since the minor characters were so poorly fleshed out. The major flaw in their characterisation seemed to be the complete disconnect between one sub-plot and another. Furthermore, many of the minor characters lacked believability.

However the ground of commonality between these works lies in five main tenets

(a) *Ka Mahadei* (the queen, Ka Lieng Makaw), was attracted by the strains of his flute.

(b) U Manik Raitong and the *Mahadei* assume/resume their adulterous relationship as lovers.

(c Leing Makaw conceives and gives birth to a baby boy.

(d) *U Syiem* identifies Manik as his wife's lover.

(e) U Manik Raitong chooses to die by setting himself alight on a funeral pyre.

Despite the fact that adapting a literary or oral work may seem easy and spontaneous, the ground realities are vastly to the contrary. In literary and oral sources, characters are introduced in the narration. Their best or worst is also intimated to the reader or listener through the narration. Intentions and thoughts are easily described in oral and literary narrative. The same however can be said of film. In film intentions and thoughts can only be voiced through action or movement. Often, the interpretation of an action or movement, no matter how deliberate, presents a real difficulty to the viewer.

The narrative structure in oral and literary sources tends to be fixed and stable. Changes in time or space within the framework of the narrative are communicated within

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The narrative structure in oral and literary sources tends to be fixed and stable. Changes in time or space within the framework of the narrative are communicated within

the narrative in the form of words. In films, transition tools such as the cut or dissolve are used to introduce a flashback or flash forward which takes the narrative backwards or forward in time.

Regardless of the outcome of this study, it cannot be denied that the film Manik Raitong is undoubtedly of great cultural importance both from the viewpoint of cultural preservation as well as cultural film studies.

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