গড়গাঁও মহাবিদ্যালয়

GARGAON COLLEGE

Linkages/Collaborations

Gargaon College

2020-21

List of Collaborations, 2020-21

Sl.No	Parent Institution	Collaborating Institutions	Nature of Work	Year of Activity
1	Gargaon College	B.P Chaliha College, Assam	Book Chapter	2021
2	Gargaon College	Dibrugarh University &Assam Agricultural University, Raha, Assam	Book Chapter	2020
3	Gargaon College	Dibrugrah University & Pandu Collge, Assam	Research Paper	2020
4	Gargaon College	Tezpur University	Research Paper	2020
5	Gargaon College	Dibrugrah University	Research Paper	2020

1. Collaboration between Gargaon College &B.P. Chaliha College, Kamrup, Assam

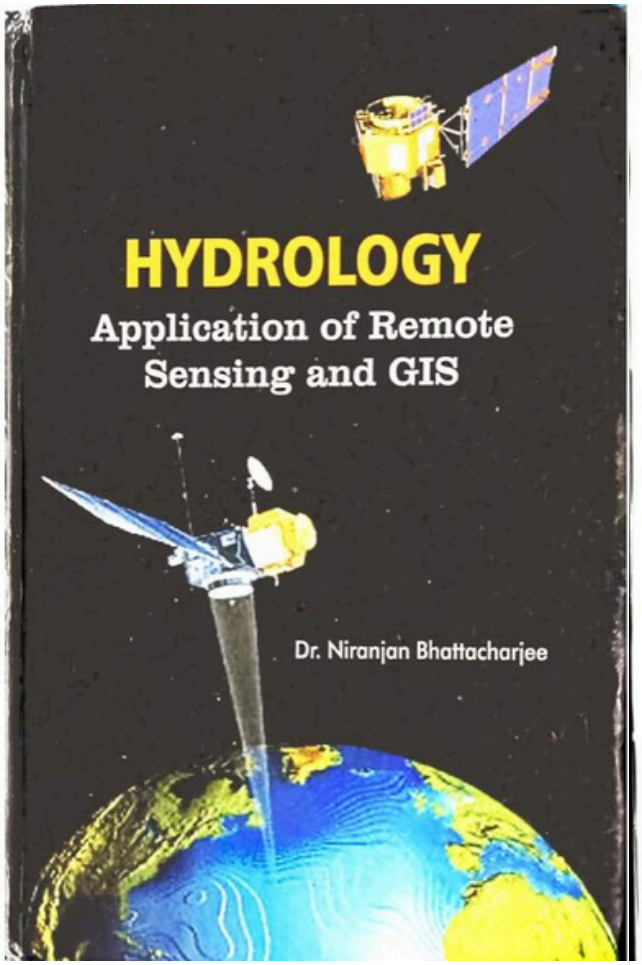
Outline of the Activity

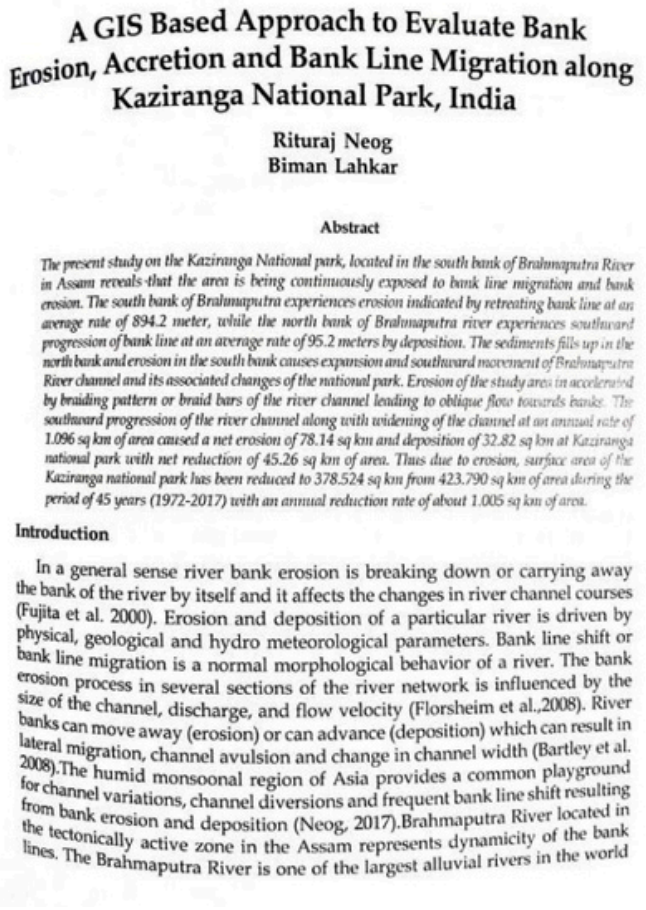
Collaborative Book Research
Rituraj Neog
Assistant Professor
Department of Geography, Gargaon College
&
Biman Lahkar
Assistant Professor
Department of Geography, BP Chaliha College, Kamrup, Assam

Title of the Book Chapter: **A GIS Based approach to evaluate bank erosion, accretion and bank line migration along Kaziranga National park, India**
Title of the Book**: Hydrology: Apllication of GIS and Remote Sensing**

ISBN: 978-81-944668-7-1

Photograph of the Activity





A GIS Based Approach to Evaluate Bank Erosion, Accretion and Bank Line Migration along Kaziranga National Park, India

Rituraj Neog
Biman Lahkar

Abstract

The present study on the Kaziranga National park, located in the south bank of Brahmaputra River in Assam reveals that the area is being continuously exposed to bank line migration and bank erosion. The south bank of Brahmaputra experiences erosion indicated by retreating bank line at an average rate of 894.2 meter, while the north bank of Brahmaputra river experiences southward progression of bank line at an average rate of 95.2 meters by deposition. The sediments fills up in the north bank and erosion in the south bank causes expansion and southward movement of Brahmaputra River channel and its associated changes of the national park. Erosion of the study area in accelerated by braiding pattern or braid bars of the river channel leading to oblique flow towards banks. The southward progression of the river channel along with widening of the channel at an annual rate of 1.096 sq km of area caused a net erosion of 78.14 sq km and deposition of 32.82 sq km at Kaziranga national park with net reduction of 45.26 sq km of area. Thus due to erosion, surface area of the Kaziranga national park has been reduced to 378.524 sq km from 423.790 sq km of area during the period of 45 years (1972-2017) with an annual reduction rate of about 1.005 sq km of area.

Introduction

In a general sense river bank erosion is breaking down or carrying away the bank of the river by itself and it affects the changes in river channel courses (Fujita et al. 2000). Erosion and deposition of a particular river is driven by physical, geological and hydro meteorological parameters. Bank line shift or bank line migration is a normal morphological behavior of a river. The bank erosion process in several sections of the river network is influenced by the size of the channel, discharge, and flow velocity (Florsheim et al.,2008). River banks can move away (erosion) or can advance (deposition) which can result in lateral migration, channel avulsion and change in channel width (Bartley et al. 2008).The humid monsoonal region of Asia provides a common playground for channel variations, channel diversions and frequent bank line shift resulting from bank erosion and deposition (Neog, 2017).Brahmaputra River located in the tectonically active zone in the Assam represents dynamicity of the bank lines. The Brahmaputra River is one of the largest alluvial rivers in the world

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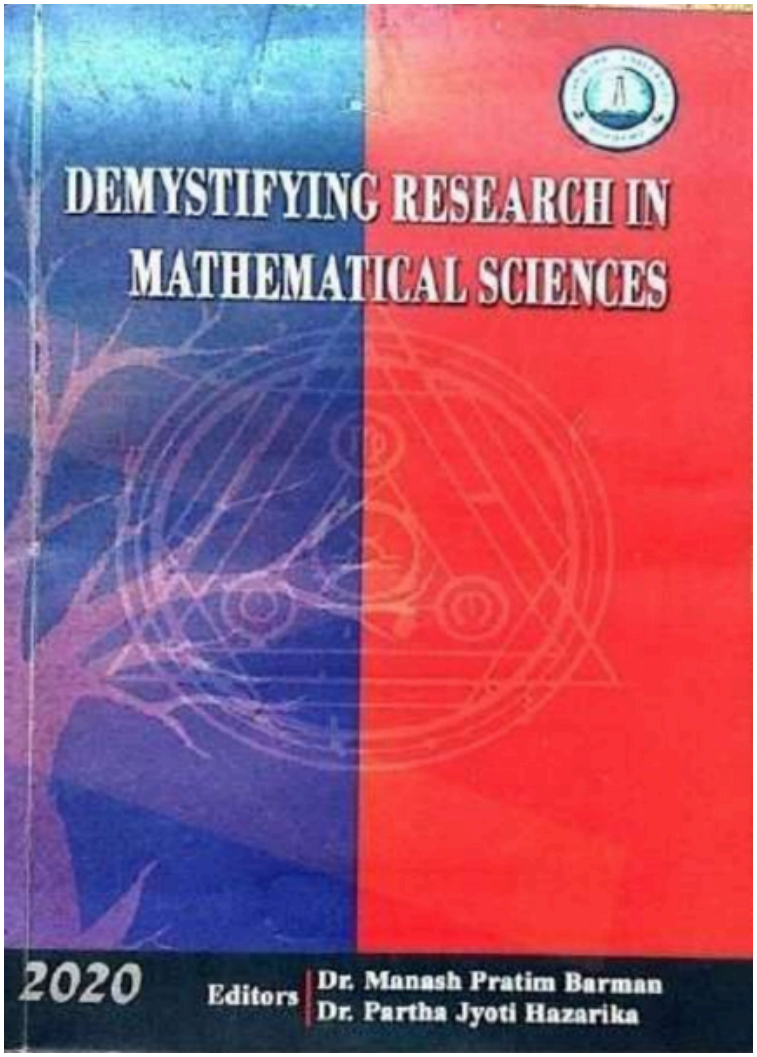
2.Collaboration between Gargaon College with Dibrugarh University and Assam Agricultural University, Assam

Outline of the Activity

Collaborative Book Research
Bornali Dutta
Assistant Professor
Department of Statistics, Gargaon College
&
Manash Pratim Barman
Department of Statistics, Dibrugarh University, Assam
With
Arnab Narayan Patowary
Assam Agricultural University, Raha, Assam

Title of the Book Chapter: **Univariate Time Series Model Under Bayesian Approcah: A Review**
Title of the Book**: Demystifying Research in Mathematical Sciences**

Photograph/video link of the Activity



Univariate Time Series Model under Bayesian Approach: A Review

Bornali Dutta[1*], Manash Pratim Barman[2] and Arnab Narayan Patowary[3]

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1. Background of the study :

In our daily life most of the observations are accordance with its time of occurrence. For example in meteorological department; rainfalls may be record monthly, temperatures may be taken daily or hourly etc. Similarly, in economics; interest and exchange rates are recorded each day; gross domestic products are recorded annually etc. In simple words it can be said that "time series is a set of numerical data that normally arises in identical intervals over a period of time" (Box et al., 1994).

The principal intention in a time series analysis of chronological data is to formulate and fit a suitable mathematical model for the historical data. Once an appropriate model is found and fitted to data the analyst can carry on further analysis using the model. The key application of time series analysis is forecasting by analyzed historical data (Monfared et al., 2013). In general, forecast is a vision of an uncertain prospect. Forecasting techniques is usually applied as an aid in controlling past and present operations which may help with any long-term planning decisions that need to be made. A fitted model may be used as a source for statistical tests; for example, with monthly sales figures, management will probably want to know whether there is any statistical evidence that sales are increasing. Finally, a fitted statistical model also provides a brief summary of the main characteristics of a time series, thus providing a useful way of presenting the data. Though various

3.Collaboration between Gargaon College with Dibrugarh University & Pandu College, Guwahati, Assam

Outline of the Activity

Collaborative Research
Dr. Dimbeswar Das
Department of Botany, Gargaon College
&
Bijoy Neog
Department of Life sciences, Dibrugarh University
with
Ramesh Hatimuria, Snehashish Dutta, Ajanta Baruah Das
Department of Botany Pandu College, Guwahati
Title of the Paper: **Karyomorphological analysis of some edible aroids of upper Brahmaputra valley of Assam**
Title of the Journal**: Journal of Cytology and Genetics**

Photographof the Activity

Journal of Cytology and Genetics 2020 VOL. **21** (NS): 27–39

RESEARCH ARTICLE

KARYOMORPHOLOGICAL ANALYSIS OF SOME EDIBLE AROIDS OF UPPER BRAHMAPUTRA VALLEY OF ASSAM

DIMBESHWAR DAS[1,*], BIJOY NEOG[2], SNEHASHISH DUTTA[3], LUHIT RAIDONGIA[4], AJANTA BARUAH DAS[3] AND ROMESH HATIMURIYA[3]
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SUMMARY Aroids (Araceae) locally known as '*Kachu*' are among the most favoured edible plants throughout Assam. Karyomorphology of 16 collections belonging to 10 species of edible aroids of Upper Brahmaputra Valley of Assam has been studied. The species included here are, *Alocasia macrorrhizos* (L.) G. Don (2n = 42), *A. odora* (Roxburgh) K. Koch (2n = 28), *Amorphophallus bulbifer* (Roxb.) Blume (2n = 26), *Colocasia antiquorum* Schott (2n = 56), *C. esculenta* (L.) Schott (2n = 28, 42, 56), *Cyrtosperma merkusii* (Hassk.) (2n = 26), *Lasia spinosa* (L.) Thwaites (2n = 26, 28), *Steudnera assamica* Hook. f. (2n = 28), *Typhonium trilobatum* (L.) Schott (2n = 26) and *Xanthosoma sagittifolium* (L.) Schott (2n = 26). The lowest and highest diploid chromosome numbers in the taxa studied here are, 2n = 26 and 56 respectively and the intervening numbers being 2n = 28 and 42. Intraspecific variations in chromosome number and evolutionary significance of karyotypes are discussed. Satellite markers were not observed in the accessions.

Keywords: Edible aroids, karyomorphology, aneuploidy, polyploidy, Assam.

INTRODUCTION

Aroids (Araceae) colloquially known as *Kachu*, are one of the most important and favoured edible plants of not only the people of Upper Brahmaputra Valley of Assam but the entire Northeast India. This family has 8 subfamilies, 119 genera and 6450 species distributed mostly in tropical and subtropical regions (Mabberley 2017).

Chromosome data are known to be of taxonomic value and found to be essential in studies focusing on diversification (Stebbins 1971). Karyomorphological features also play an important role in determining the taxonomic status of the species as they help in the study of plant systematics and evolution (Clark & Wall 1996). When different taxa showed the same chromosome number and karyotypic features, then it is very problematic to distinguish between them by conventional cytological analysis (Sultana et al. 2011). Hence, there is a need to generate more cytological and morphological information which will be helpful in examining relationships within the species as well as in the genera (Sheffer & Croat 1983).

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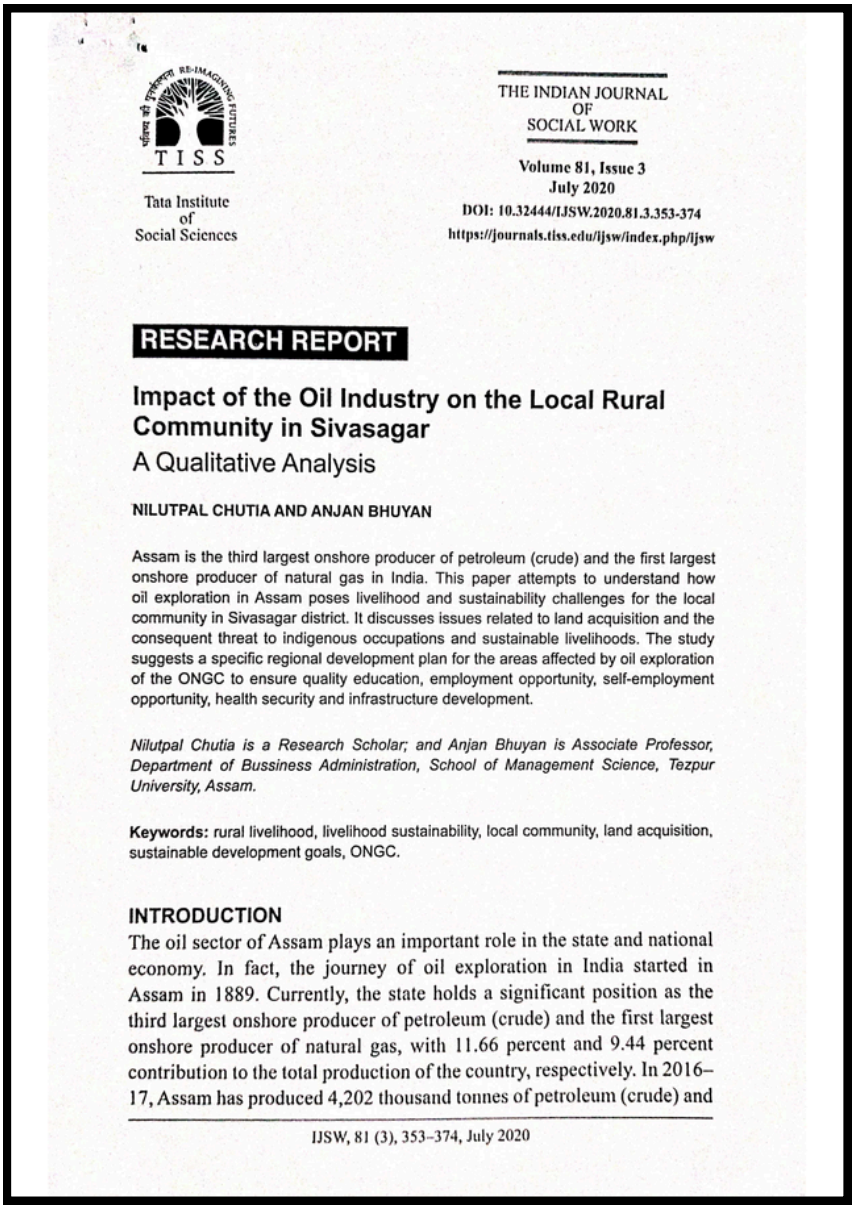
4.Collaboration between Gargaon College with Tezpur University, Assam

Outline of the Activity

Collaborative Research
Nilutpal Chutia
Department of Economics, Gargaon College
&
Anjan Bhuyan
Department of Business Administration, Tezpur University
Title of the Paper: **Impact of the Oil Industry on the local Rural Community in Sivasagar**
Title of the Journal**: The Indian Journal of Social Work**
Link to the

Photographof the Activity



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RESEARCH REPORT

Impact of the Oil Industry on the Local Rural Community in Sivasagar
A Qualitative Analysis

NILUTPAL CHUTIA AND ANJAN BHUYAN

Assam is the third largest onshore producer of petroleum (crude) and the first largest onshore producer of natural gas in India. This paper attempts to understand how oil exploration in Assam poses livelihood and sustainability challenges for the local community in Sivasagar district. It discusses issues related to land acquisition and the consequent threat to indigenous occupations and sustainable livelihoods. The study suggests a specific regional development plan for the areas affected by oil exploration of the ONGC to ensure quality education, employment opportunity, self-employment opportunity, health security and infrastructure development.

Nilutpal Chutia is a Research Scholar; and Anjan Bhuyan is Associate Professor, Department of Bussiness Administration, School of Management Science, Tezpur University, Assam.

Keywords: rural livelihood, livelihood sustainability, local community, land acquisition, sustainable development goals, ONGC.

INTRODUCTION

The oil sector of Assam plays an important role in the state and national economy. In fact, the journey of oil exploration in India started in Assam in 1889. Currently, the state holds a significant position as the third largest onshore producer of petroleum (crude) and the first largest onshore producer of natural gas, with 11.66 percent and 9.44 percent contribution to the total production of the country, respectively. In 2016–17, Assam has produced 4,202 thousand tonnes of petroleum (crude) and

IJSW, 81 (3), 353–374, July 2020

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5.Collaboration between Gargaon College with Dibrugarh University, Assam

Outline of the Activity

Collaborative Research
Kabita Phukan
Department of Mathematics, Gargaon College
&
G.C Hazarika
Department of Mathematics, Dibrugarh University
Title of the Paper: **Effect of variable viscosity and thermal conductivity on Unsteady Free Convection Flow past an Impulsively Started Infinite Vertical Plate with Newtonian Heating in the Presence of Thermal Radiation and Mass Diffusion**
Name of the Journal: Mathematical Forum

Photographof the Activity

Mathematical Forum
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EFFECTS OF VARIABLE VISCOSITY AND THERMAL CONDUCTIVITY ON UNSTEADY FREE CONVECTION FLOW PAST AN IMPULSIVELY STARTED INFINITE VERTICAL PLATE WITH NEWTONIAN HEATING IN THE PRESENCE OF THERMAL RADIATION AND MASS DIFFUSION

Kabita Phukon[1] and G. C. Hazarika[2]

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Abstract

The influence of variable viscosity and thermal conductivity on unsteady free convection flow past an impulsively started infinite vertical plate with Newtonian heating in the presence of thermal radiation and mass diffusion is examined. Both the fluid viscosity and thermal conductivity are considered as an inverse linear function of temperature. The governing boundary layer equations with associated boundary conditions are converted to non-dimensional form. The magnetic Reynold number is assumed to be so small that the induced magnetic field can be neglected. The resulting non-linear partial differential equations are then solved using an iterative method for an implicit finite difference scheme. Effects of various flow governing parameters on the fluid velocity, temperature and concentration fields are presented graphically. Further, the numerical values of skin-friction co-efficient, Nusselt number and Sherwood number are computed and presented in tabular form.

Keywords: Variable viscosity, thermal conductivity, Mass transfer, unsteady free convection flow, thermal radiation, MHD.

2010 AMS classification:76M25

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