

**"PROSPECTS OF ECO-TOURISM IN CHAKRASHILA WILDLIFE SANCTUARY AND
DHEER BEEL", CHAPARIN, DHUBRI DISTRICT OF ASSAM.**



A FIELD SURVEY REPORT SUBMITTED AS A PART OF PARTIAL FULFILMENT FOR PRACTICAL PAPER-3026 IN SEMESTER-III OF B.A. /B.Sc. IN GEOGRAPHY (HONOURS) FINAL EXAMINATION, UNDER GAUHATI UNIVERSITY

SESSION-2021-22

Examined
12
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SUBMITTED TO
DEPARTMENT OF GEOGRAPHY
DUDHNOI COLLEGE



SUBMITTED BY

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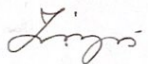


CERTIFICATE


This is to certify that a Project Report entitled "Prospects of Eco-Tourism in Chakrasila Wildlife Sanctuary and Dheer Beel" has been successfully carried out by Ms/Mr Rupjyoti Bodo

It is a result of his/her own observations and is permitted to submit in the B.A./B.Sc. 3rd Semester (Honours) Final Examination of the subject Geography to be held in December, 2021.

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ACKNOWLEDGEMENT

At the very outset let me express my gratitude to the teachers of the Department of Geography for the encouragement, guidance and assistance for the completion of the Field Report. Their valuable comments and suggestion and have helped me immensely in executing the field work and Field Report to its present form.

I would also like to express my gratitude to my friends of 3rd Semester Geography (Honours) and people of the study area for helping me in collecting primary and secondary data and for giving me valuable information.

All these data and information have helped me to carry on my Field Work. It would not have been possible for me in gathering the right type of information from the field survey. I therefore acknowledge everyone who has helped me in preparing this report as the final product of my study.

Date:

Rupinohi Bodo
Name of the student

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1. INTRODUCTION

To know the unknown and to see the unseen, man has a natural curiosity. To fulfill this curiosity; man has to travel from one place to other. Geography is a science that is today aerial differentiations according to Hartshorne. It deals with the interaction of man with natural environment which is especially variable. Hence it is through field observation a student of geography can acquired perfect knowledge of the leaving society their activities, culture, dress, habits and interaction among the different environment of the different parts of the earth. it is for these field study program has been incorporated in our academic curriculum. Field study has been regarded as a part of education. It is for these field study program has been incorporated in our academic curriculum Field study has been regarded as a part of education .It not help us to acquired firsthand knowledge of a different place, but it also helpful Administration of ideas and up gradation of nation and Globalization.

1.1 SIGNIFICANCE OF THE FIELD STUDY

Field study is an essential part of education for the fulfillment of our basic knowledge of different environment .In general one cannot acquire from classroom lecture or from available books in library. A subject like geography, have a wide scope concerns and Tradition of people etc. To acquired knowledge of all these practically in the field study is almost necessary for geography student. For the above purpose in mind with the B.A.III semester Student of Geography, Dudhnoi College, Decided to go for field study at "CHAKRASHILA WILDLIFE SANCTUARY AND DHEER BEEL" is located in the Dhubri District of western Assam.

1.2 OBJECTIVE OF THE FIELD STUDY

The Objectives for the preparation for this field report are:

1. To study the present status of Eco-tourism.
2. To visit the wildlife sanctuary physical.
3. To gather knowledge of Avifauna of Dheerbeel (wetland)
4. To know about the importance of wetland.
5. To know about the physical setting of this area.

1.3. METHODOLOGY

The report has been prepared with this following methodology:

- 1) Interpretation of the experience gathered through observation.
- 2) The report primarily based on the internet.

1.4 LIMITATION OF THE PRESENT DAY STUDY

- Every study has limitations.
- Clarifying the limitations of a study allows the reader to better understand under which conditions the results should be interpreted.
- Clear descriptions of limitations of a study also show that the researcher has a holistic understanding of his/her study. And this is something very positive

Common methodological limitations

- Issues with samples and selection.
- Insufficient sample size for statistical measurements.
- Lack of previous research studies on the topic.
- Limited access to data.
- Time constraints.
- Conflicts arising from cultural bias and other personal issues.
- Identify the limitation(s)

1.5 LOCATION OF THE STUDY AREA

The Dhir Beel is located near Chapar in Dhubri district of Assam which is rich in Piscean fauna. The Beel is situated at latitude $26^{\circ}16'21.68''$ North and longitude $90^{\circ}22'46.40''$ East and covers an area of about 689 ha of land. On its north western side is Chakrashila Wildlife Sanctuary. It is connected with the river Brahmaputra by an 11km long channel called 'Dhir Dhara'. The Beel is under capture fishery and the leasee captures upto 6 quintals of fishes per day during peak season. The Beel is surrounded by village such as Pokhipara, Dhirghat, Alurbhui, Tintila, Chagalkhuti etc.

STUDY AREA

Map Coordinates:- $26^{\circ}16'21.68''$ N & $90^{\circ}22'46.40''$ E

Location map of Dhir beel



Balajan

Basugaon

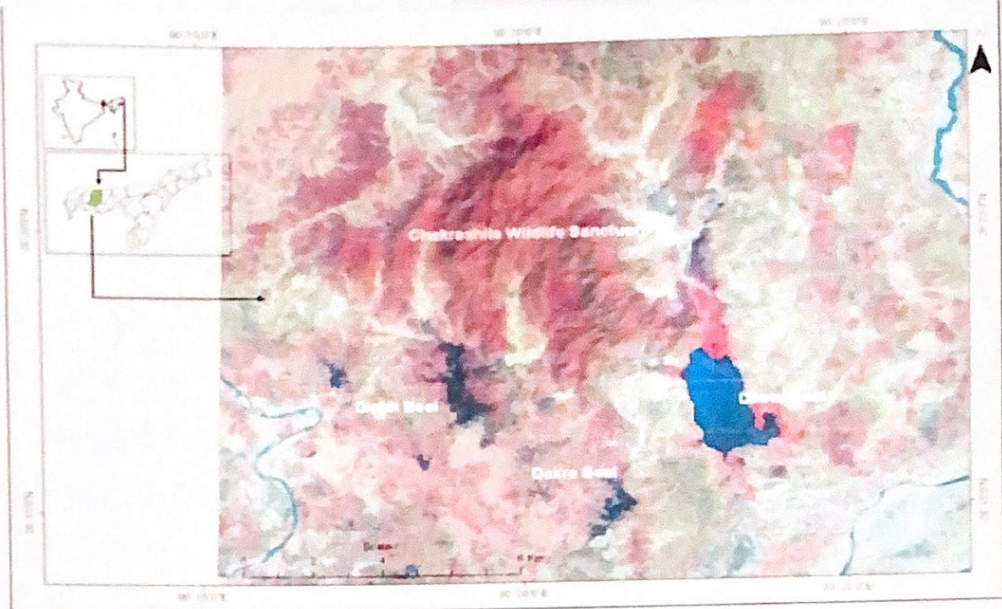


Fig. 1. Location of Dheer Beel, a freshwater lake, Chakrashila Wildlife Sanctuary, Dima Beel, and Dakra Beel Assam, India

SATELITE IMAGE OF CHAKRASHILA WILDLIFE SANCTUARY AND DHEER BEEL

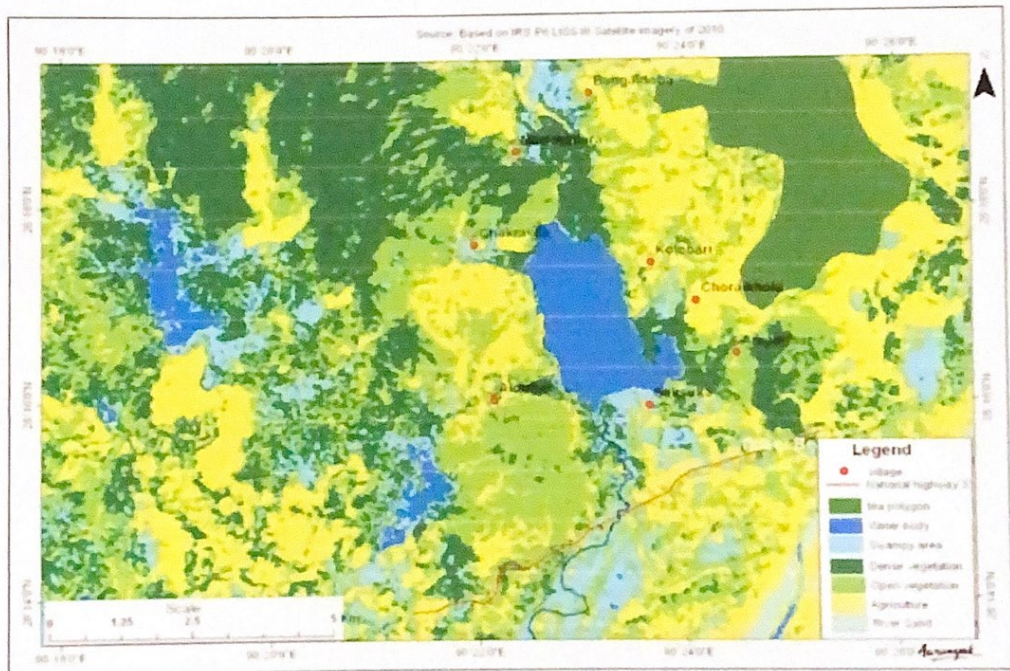


Fig. 2. Land use/land cover map of Dheer Beel and its surrounding area, Assam, India

2. PHYSICAL BACKGROUND OF THE STUDY AREA

The district is situated in the extreme south western part of the lower Brahmaputra valley of Assam with an area of 2,67,572 hectares. The district is characterised by almost flat topography but the eastern part has an undulating topography. The drainage system is dominated by the Brahmaputra river that flows through the district with a sharp south turn in the extreme west end of the district. The northern part is having a number of tributaries of the Brahmaputra namely Champabati, Gourang, Tipkai, Godadhar and Sonkosh which are perennial in nature, originate from Bhutan and flow into the Brahmaputra towards south. Among the southern tributaries, the Jinjiram originates from

Urupad beel of Goalpara district and flows parallel to the Brahmaputra for some distance before joining further downstream. The soil in the northern part of the district is composed of Recent Riverine Alluvial soils (Entisols), and that of the lowermost part of the district is formed by Old Riverine Alluvial soils (Inceptisols). The soil pH of the district varies from 4.5 to 7.5 i.e. acidic to neutral. The annual average rainfall of the district is 2647 mm. The maximum and minimum temperature of the district is 38°C and 7°C respectively.

Dhir Wetland or simply known as Dhir beel is one of the beautiful wetland in lower Assam, which may act as one the beautiful tourist spot for its biodiversity and landscape view. The diversity of the bird, reptiles, amphibians and the area of the beel presents huge prospects for the Ecotourism in this wetland.

The Northern part of the Wetland is connected to the Chakrashila Wildlife Sanctuary shows a beautiful tourist spot. A total of 213 bird species are known to occur in the Sanctuary and the surrounding water bodies . Chakrashila was treated as hunting area even after it was declared as a reserve forest in 1966.

The dominance of birds, mainly waterfowl is the major attraction of this wildlife sanctuary. This indiscriminate hunting led to the local extinction of a few species such as the Swamp Francolin

Anthropogenic activities

Encroachment by various immigrants from other parts of the District

Setting up of 08 large Brick Industry touching the Dhir beel increases the Temperature of the area.

Killing of various Birds in the Beel area. The number of Greater Adjutant stork has-been decreased.

During the study period, eight major Brick Industry were recorded in the surrounding the region. However, that not all brick industries are reported to be in active condition. Brick burning in the study area was observed from late September to February. Almost all the Brick Industry recorded was human-caused (anthropogenic). The clearing vegetation on land for cultivation. Bathing and washing clothes causes effects on the Beel surrounding.

4. FIELD DIARY OF PRESENT DAY STUDY

The field diary is the basic documents which contain all the data collected. Facts and interpretations are to be written separately and conversations to be noted in the vernacular languages. Two kinds of field notes are to be observed

- a) Taking notes on the spot
- b) Writing detailed diary

Daily field diary

It is instructed to write the field diary everyday in which

- a) Detailed notes of observations
- b) Field notes on discussion and conversations
- c) Details of Interpersonal communication, gossips, fold history's similar events
- d) Specific details of special events

Specific reference about the main field of study for instance, the details about the process of message diffusion, various kinds of channels of communication were described in detail.

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5. JOURNEY AND EXPERIENCE OF FIELD STUDY

Due to the need of practical field report of geography subject, we the student of B.A. III semester with teachers in-charge of Dudhnoi college took an Education field study to Dheer Beel on ^{3rd December 2021} to study Eco- tourism importance of the Beel. We started from Dudhnoi College at 7:30 AM and reached to Dheer Beel at 12noon

I noticed the natural beauty the route via Pancharatna Bridge is through the forest and villages, the route condition is so good and after crossing the chapar town in dhuburi district we reached our destination at 12 noon.

I noticed of Dheer beel Lake about the trees, fish, water and small insects. This is most important for our ecosystem.

I Notice it is a nice picnic spot with boating facilities. The place is full of trees and shrubs and pollution free atmosphere makes it a place to visit during winter.

The Dhir beel is easy for Bus and other vehicular communication which supports the Ecotourism. The National highway 31A is passing through the beel which connects to Guwahati by 210 Km, Bongaigaon by 35 Km & Dhubri by 60 Km.

Surrounding of the Beel

The beel is surrounded by Chakrashila Wildlife Sanctuary in the West. In the North Chakrashila Forest reserve and in the South Arrearjhar Village is present. The forest is covered with deciduous tree cover. These provide the Dhir Beel a beautiful Landscape from the Eastern Part of the Beel. The Chakrashila hills give a very beautiful view to the Dhir beels Natural Scenic beauty

6. SUMMARY AND CONCLUSION:

The vegetation in the wetland and the surrounding hillsides has semi deciduous forests. Wetlands are not wastelands. In fact, these habitats have the highest productivity on earth and are extremely rich in bird and animal life. Wetlands are extremely important for birds, as these provide excellent habitat to birds for foraging, breeding, roosting, pre migratory requirements, migration, staging, over wintering and protection from predators. A large number of bird species are ecologically dependent on wetlands, at least at some stage of their life cycle. Waterfowl is one group of such birds which is predominant in this Dhir Beel.

Presently Avian diversity of the beel has 17 families of resident and migratory birds and 22 species of Aquatic bird species. A number of mammals, reptiles and Amphibians are also found in an around the beel. The beel has 71 species of fishes and has greater prospects for Tourist Angling sports and also the length of the beel presents for Kayaking and other aquatic sports. And the entire area in an around the beel is quite beautiful for the tourism.

The communication and connectivity to the beel is very much in swift and easy to access. Some the problems found to be people of nearby area are not aware of tourism business. Beautification of the beel surrounding requires with proper policy. The lacking in proper tourism policy in Assam seems to be the major problems. The tourism policy is confined to certain National Parks and wildlife Sanctuaries and the reason behind these areas are untouched to tourism sector. For the betterment and ecotourism in these areas, the public need to be aware and a good host for the tourist as the public seems to be more unaware of their role in the development of the beel as a tourist spot. Local NGO must be given chance to run the tourist spot with public participation and with proper safeguarding to the area specific. Hence, a proper policy and the communication between the govt. and the public are required to promote tourism in the Dhir beel.

7. PHOTO GALLERY





IPPL **Chakrashila Wildlife Sanctuary**
TAPOBAN
COMMUNITY CONSERVATION CENTRE
FOR
GOLDEN LANGUR

Community Conservation Centre for Golden Langur is located in Tapoban village which is situated adjacent to the Chakrashila Wildlife Sanctuary. This centre is also known as Centre of Nature's Education.

The centre provides various programmes to the visiting tourists and organizes various eco-tourism activities like Bird watching, Golden Langur observation, Jungle Trekking, Rafting in the natural Spring, Boating in the beautiful Lake, Angkor, Carving, Inside the Forest, visiting indigenous village to enjoy hand-painted and traditional dances etc. more.

For further details, please contact: Nature's Bookers, New Office, Tapoban - P.O., Dibrugarh, Assam, PIN-786 306.
 Phone: 94361 2442, 94361 2443.



**SOCIO-ECONOMIC SURVEY AND HOUSEHOLD SURVEY OF
KHARA LALPARA VILLAGE.**



A FILED SURVEY REPORT SUBMITTED AS A PART OF
PARTIAL FULFILMENT FOR PRACTICAL PAPER-GGY-HC-
5026 IN B.A.(CBCS) 5TH SEMESTER IN GEOGRAPHY
(HONOURS) FINAL EXAMINATION.

UNDER GAUHATI UNIVERSITY

SUBMITTED TO
DEPT. OF GEOGRAPHY
DUDHNOI COLLEGE



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SUBMITTED BY-

**NILAKANTHA KALITA
B.A.(CBCS) 5TH SEMESTER GEO(H)
ROLLNO:-UA-191-097-0395
REG.NO:-19023110**

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* Certificate

* Acknowledgement

* INTRODUCTION

Chapter-1

1. Location of the study area

1.1 Objective of the study

1.2 Methodology of data collection

Chapter2

2. Physiography of the study area

2.1 Climate, rainfall, soil & Vegetation

2.2 Transport & Communication

Chapter3

3. Socio-Economic condition of the village

Chapter4

4. Summary & conclusion



CERTIFICATE

This is to certify that a Field Report entitled "A Socio-Economic Survey of Khara-Lalpara Village of Dudhnoi, Goalpara, Assam" has been successfully carried out by Ms/Mr. *Nilakantha Kalita*

It is a result of his/her own observations and is permitted to submit in the B.A./B.Sc. *5th Semester (Honours) Final* Examination of the subject Geography to be held in *December, 2021*.

Teacher in charge

K. K. Raychowdhari

(*K. K. Raychowdhari*)

Assistant Professor

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Head of Department

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(Dr. Hem Chandra Kalita)

Associate Professor

Department of Geography

Dudhnoi College

ACKNOWLEDGEMENT

I wish to express my thanks to Dr.Hem Chandra Kalita sir who has guideded and given us suggestions about the fieldwork, without which this report would not been completed properly.

I want to express my deep gratitude and heartiest thanks to all my respondents along with the village people of khara lalpara who have spent their valuable time and provided me vital informations and sharing some private details pertaining to the study.

I also thankful to Prof. Birbal Bodo, KK Rajbongshi, Linso Timungpi, Samar medhi, Priyanka Rabha & Rashmi Sarkar for their helps in the completion of this report

Trusted By-

Name:- Nilakantha Kalita

Class:-B.A(CBCS)5th Semester

Roll NO:-UA-191-097- 0395

I. INTRODUCTION

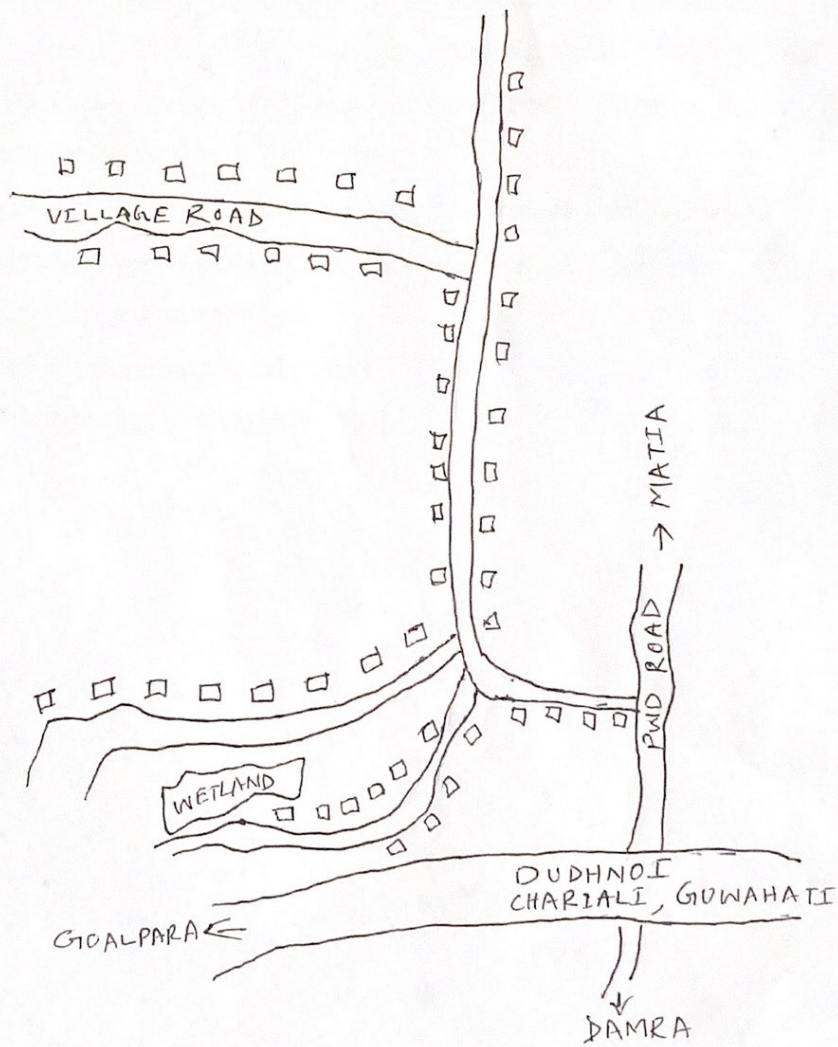
To know the unknown and to see the unseen, man has a natural curiosity. To fulfill this curiosity, man has to travel from one place to other. Geography is a science that is today aerial differentiations according to Hartshorne. It deals with the interaction of man with natural environment which is especially variable. Hence it is through field observation a student of geography can acquired perfect knowledge of the leaving society their activities, culture, dress, habits and interaction among the different environment of the different parts of the earth. it is for these field study program has been incorporated in our academic curriculum. Field study has been regarded as a part of education. It is for these field study program has been incorporated in our academic curriculum Field study has been regarded as a part of education .It not help us to acquired firsthand knowledge of a different place, but it also helpful Administration of ideas and up gradation of nation and Globalization.

Chapter-1

1.Geographical Location of the Study Area

Khara lal para village is located in Dudhnoi subdivision of Goalpara district in Assam , It is situated 3km away from sub district headquarter Dudhnoi & 45 km away from district headquarter Goalpara.The total geographical area of the village is 276.1hectars.

SKETCH MAP OF KHARLALPARA VILLAGE



| INDEX | |
|---------|----|
| ROAD | ≈ |
| HOUSE | □□ |
| WETLAND | ♡ |

1.1 Objectives of the study

The objectives for preparation for this field report are as follows:-

- (i) To know about socio-economic condition of the area.
- (ii) To access the social amenities of the people of the village.
- (iii) To know the educational status of the Village.

1.2 Methodology

Following are some geographical techniques which used to collected data regarding to the report are as follows:-

- (i) Questionnaire method
- (ii) Field observation Method
- (iii) Photography & Sketch method

Chapter2

2. Physiography of the study area

Physiographically, the area is occupied by plains. There are no hills and mountains near the village. A small wetland also exists in this village. Approximately 65% of the village area is covered by paddy land.

2.1 Climate, Rainfall & vegetation:


The climate in this village is moderate during the winter & Hot in Summer. Average annual temperature range between 21 degree centigrade.

Rain makes its first appearance in the month of April with occasional and irregular light showers and at times. Monsoon rainfall normally begins from the early part of the month of June.

Vegetation: The semi evergreen and mixed Deciduous vegetation are mainly found in the village. Specifically this area is not rich in flora and fauna.

2.2 Transportation and Communication:

Transportation provides the link between villagers and nearby areas. There are medium transport facilities in the village.



Chapter-3

Socioeconomic condition of the village

Following points help us to understand the socio-economical condition of the village

- (i) Approximately 92.7% people are engaged in agricultural sector.
- (ii) Remaining 6.3% villagers are associated with other sectors.
- (iii) Some social facilities like School, hospitals, public health centre, drinking water facilities are not available in this village.

Chapter4

Conclusion

It maybe conclude that kharalalpara village is surrounded by paddy land. The village is located in the remote area. There are lot's of Social, economic & infrastructural issues which faced by the villagers. Therefore, the village is still backward. Government should take some necessary steps or introduce some schemes for the overall development of the village.

GROUP B:- HOUSEHOLD SURVEY

- (1) (a) Location of the village
(b) District Block Gaon Panchayat
- (c) Number of Families (d) Total population of the Village
- (2) (a) House Number (b) Name of the head of the family
(b) Total members of the Family (Male/Female)
- (3) Age Structure:- (a) Below 5 (b) 5 to 10 (c) 10-15 (d) above 20
- (4) Types of Family: Single/Joint Family
- (5) Educational Status of the Family:- (a) Illiterate, (b) primary, (c) Secondary
(c) Higher, (d) Technical Graduate
- (6) Income Sources/Income from different sources in Rupees:-
(a) Agriculture, (a) Industry, (c) Secondary, (d) Technical graduate
- (7) Income from different sources:- (a) Agriculture,
- (8) Total Income of the Family
- (9) Sources of Drinking Water:- (a) Government Supply (b) Filter/Aquagrand
- (10) Healthcare Facilities:- a) Government (b) Private
- (11) Electric connection is (Available or not).

Collected by

Name- Nilakantha kalita

Roll No- UA-191-097-0395

Class-5th Semester

Date-09/03/2022

Preparation of questionnaire

Sand Mining in Dudhnoi river and its impact on agricultural fields

(A case study of Dudhnoi and Matia)

Questionary may be prepare to collect relevant information for the above mention title

A

- (1) Location of Dudhnoi river?
- (2) How many trucks or Dumpers ?
- (3) What is the amount of sand per truck or dumper (CFT) ?
- (4) Where to carries the sand ?
- (5) Whether it is public or private sector ?
- (6) What is the amount of sand mining per month ?
- (7) What is the amount of annual sand mining ?

B.

- (8) What is the value of sand per truck /dumper in rupees?
- (9) What is the value of sand mining per month in rupees?
- (10) What is the value of sand mining per annum?

C.

- (11) How many person engaged in a truck?
- (12) How many person are engaged in sand mining station?
- (13) How many sand mining station are there from Dudhnoi to matia?
- (14) Whether other vehicles also used to carry sand (tractor)?

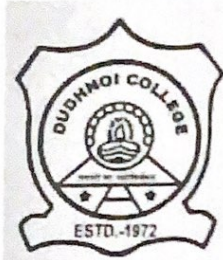
D.

- (15) Whether excessive mining affect on water current?
- (16) Whether it effect on micro organism?
- (17) Whether it affect on agricultural productivity in nearby agricultural field?
- (18) Whether water saturation level is lower down on the agricultural field?

PROJECT REPORT

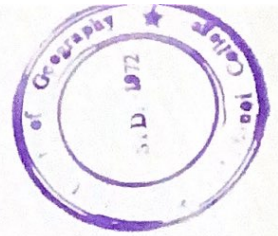
**SAND MINING ON DUDHNOI RIVER : ITS IMPACT ECONOMY AND
ENVIRONMENT**

(A CASE STUDY ON KHARA VILLEGE,DUDHNOI)



**A PROJECT REPORT SUBMITTED FOR PART FULFILMENT OF PAPER 6026 OF
6TH SEMISTER GEOGRAPHY HONOURS 2022**

SUBMITTED BY
NAME : SENGRIMCHI CH MARAK
CLASS : B.A 6TH SEMISTER
ROLL NO:- UA-191-097-0478
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CERTIFICATE

This is to certify that a Project Report entitled "Sand Mining in Dudhnoi River-Its impact on Economy and Environment (A Case Study in Khara Village)" has been successfully carried out by Ms/Mr Sengrimchi Ch. Marak

It is a result of his/her own observations and is permitted to submit in the B.A./B.Sc. 6th Semester (Honours), Final Examination of the subject Geography to be held in June, 2022

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ACKNOWLEDGEMENT

I would like to express my profound gratitude towards many individuals, as without their kind support, it would not be possible for me to complete this project report. I would like extend my sincere thanks to my teachers, who gave me the golden opportunity in enhancing my hidden capabilities.

Unfortunately, I addressed several difficulties in coordinating the activities of the project but I am highly indebted to our beloved HOD sir for his guidance and constant supervision, as well as for providing and also for his support in completing the project.

Secondly I would like to express my gratitude towards the local peoples of Khara village for being corporate with me while collecting data for completing this project and also thank my classmates for helping me with advices, suggestion towards the project.

Finally words are not sufficient to express my gratitude my cherished for supporting me without their encouragement and support I would have not reached this stage.

At last, I end up by thanking all who helped me in finalizing the project within the limited time frame.

Date

Signature

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Signature

PREFACE

This project is about the sand minning I Dudhnoi River flowing through Khara village and its impact on economy and environment on the local people. The field data and information were collected through surveys and interpretation has been made in the form of project report.

For preparing the Project Report, we have visited the selected area during the suggested duration to avail the necessary information.

The project has been divided into 4 chapters to classify the collected information in systematic order-

It starts with the introduction of Sand mining and its area where it is has been practice, its objectives towards the area. The research questions, review of literatures, methodology and data used in collecting report.

Serially the second chapter chapter define the physiography of the area, its climate conditions, drainage , vegetation available at the area. Also refers the soil types of the selected area.

Next the historical establishment of Sand mining on Dudhnoi river, its economic contribution towards local peoples livelihood also impact of mining on flood, water pollution, biodiversity and agricultural productivity.

Towards the ending part the summary and conclusion of the project are shown.



CONTENT

The study

Introduction of chapter -1

1.1 statement of the problem

1.2 Objectives

1.3 Research questions

1.4 Review of literates

1.5 Data base and methodology

The –chapter-2

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Physical basis

2.1 Physiography

Climate, drainage, vegetation and soil

2.2 Economic basis : A short description of in area

The chapter- 3

contribution of mining to economy of khara villege

3.1 Impact of sand mining on i Flood ii water pollution iii Biodiversity & iv Agriculture productivity.

The chapter-4

Summery and conclusion

Bibliography

CHAPTER 1: INTRODUCTION

Sand is the finest or roughest broken parts of various rocks. The rocks of highlands such as hills and mountains are weathered by physical or anthropogenic agents. These weathered rocks are then somehow rolled down by running water through the small streams. While these rocks are transported to the valleys, they crush with each other and break into even smaller pieces. In this way the broken rocks are deposited at the immediate plain topography and the finest parts are transported by the river to distant portions of rivers and are deposited layer making the river bed less deep. In olden days sand had less economic value also increased and at present are used for trading purposes. People at present have taken to pick up or remove the sands from the river bed for sell. As a result the rivers have become very deep and these have been some kind of environmental change and economic development for the local resident peoples.

Sand is possibly something you take for granted; it gets in your hair and your clothes and all over your food at the beach. But sand is also fascinating. Sandy beaches are dynamic: sand accumulates slowly over time, travels down the coast with longshore drift, is removed from the beach by large waves during storms, and can be redeposited back on the beach from offshore banks during calm periods. Sand is typically made mostly of varying amounts of material weathered from inland rocks (or seacliff material) and transported to the beach on the wind or in rivers, and/or shells and other hard parts precipitated out of the ocean water by marine organisms.

Sand therefore records processes at a variety of timescales. Looking closely at sand under a microscope, we can determine the mineral or organismal composition of the sand and determine where it originated, and what kind of rocks or organisms created the sand. For instance, look closely at these snapshots-under-the-microscope of sand samples below:

Aside from its origin, sand also contains clues about the history it has experienced, and the physical environment in which it currently resides. For instance, compare the amount of rounding in the sand samples below. The sand on the left is from a steep, small beach in Hawaii exposed to powerful winter ocean swells. Smashing into one another repeatedly has polished these sand grains, as they are tossed in the surf. The sand on the right is from a different beach in Big Sur, where a river cascading down the steep mountains backing the beach deposits freshly weathered grains of rock that have not traveled far and have yet to be rounded and smoothed.



1.1. Statement of the problem:

The Dudhnoi area of Goalpara rural district of Assam has been witnessing a rapid increase in problems caused by picking up of sands from river bed especially from the Dudhnoi river bed. Removal of sand from river beds in the Dudhnoi area has been increasing day by day and the situations have been becoming worse and worse creating lots of problems for man and the natural environment. No doubts the local people by picking up the sands from the river bed have benefited in economic phase ,but by ignoring the harm that has been causing to the environment, other people and the other living beings he has doing a great mistake. The act of sand mining from river beds has been doing.

1.2.Objectives of the study:

The study has the following objectives:

- (i) To study about the benefits of the local people from sand mining from river bed.
- (ii) To study the economic benefits of the peoples through sand mining.
- (iii) To study the impacts on environment from sand mining.
- (iv) To bring awareness among the local people about the positive and negative effects of sand mining from river beds.

1.3. Research questions:

In order to achieve the goal of the objectives the following research questions are formed:

- (i) What are the causes that given rise to the rapid sand mining practice in Dudhnoi river bed?
- (ii) Where are the sand supplied?
- (iii) How many dumper vehicles are engaged in it?
- (iv) What are the impact of sand mining on local peoples and its economy status?
- (v) How many families are engaged in sand mining?

1.4. Review of literature:

Research can be considered as the activity of discovering view knowledge about a particular subject. A particular research always attempt for finding out the hidden truth about a particular subject or problem. It is almost impossible to describe a particular concept ,so I order to achieve at a final concept or views ,the research used to depend on certain knowledge inherited from some other study materials that are directly or indirectly related to the research problem.

These are several international, national and regional published articles, case studies and reports surrounding the effects and concerns of sand mining activities. There are also articles negating the unsustainable way of sand mining and why it should be stop. On the other hand, there are very less studies suggesting the extraction of sand mining although attempts have been made to manage sand mining with regulated and controlled methods for long-term extraction without compromising biodiversity. One such published handbook is done by the

Ministry of National Resource and Environment, Department of Irrigation and Drainage
Malaysia.

Many scholars have turned their attention to deal with sand mining and its impacts on the particular areas. However such works has been done which are directly or indirectly related to natural environment. Some of information or commitment the scholars has given are mention below-

International:-

According to Ramade - a resource may be defined as a form of energy and/ or matter which is essential for the functioning of organism, populations and ecosystem.

National:-

According to Mumbai based environmentalist Sumaira Abdulali, founder of Awaaz, an NGO working on environment says that 'Along with climate change, sand mining has contributed much to the rising of sea level. Sand is a natural barrier and removing it will definitely accelerate the shore washing'.

1.5. Data base and methodology:

For the preparation of the project report help has been taken from two data sources. They are:

- (i) Primary Data Sources- For the project work many primary data have been collected through observations, questionnaires, personal visit in the field with teachers.
- (ii) Secondary Data Sources- The locational maps, some information from the internet and other books, supply records of sands etc.

Methodology: The research work will be based mainly on primary data and which are collected through direct personal investigation with the help of questionnaire prepared for the problem after much suggestion. And the necessary secondary data and reference are to be collected from different books, journals, Government office and from internal sources. The field work will be carried out in not less than 40% of the total population (in this case and sand mining area). The data are to be processed statistically with necessary illustrations and diagrams wherever assumed necessary.

Basically 'Methodology' the study of research methods or formally " a contextual framework for research a coherent and logical scheme based on views, beliefs, and values, that guides the choices researchers [or other uses] make. It composes the theoretical analysis of the body of methods and principles associated with a branch of knowledge such that the methodologies employed from differing disciplines vary depending on their historical development. This creates a continuum of methodologies that stretch across competing understandings of how knowledge realities are best understood. This Situates Methodologies Within Overarching Philosophies and Approaches.

Methodology may be Visualized as a Spectrum from a Predominantly Quantitative approaches .Although a methodology may eventually sit Specifically within one of these

Introduction of the study area:

For this project of sand mining and its impact of economic & environment on residing local peoples, I have choose a small part of Dudhnoi River with and selected a small village Khara. Dudhnoi a village in Kushdhowa Tehsil in Goalpara District of Assam State. It is located and surround by Fofol in the east, Lela in the west, Matia in the north and Damra in the south.

The Dudhnoi river is a sub-tributary of the Brahmaputra River in the Indian state of Assam. This river originates in the East - Garo Hills of Meghalaya and flow towards north and meets Krishnai River at Matia and flows as Mornoi River before its confluence with the Brahmaputra River.



approaches. Researchers may blend approaches in answering their research objectives and so have methodologies that are multi method and or interdisciplinary .

In general a methodology proposes to provide solutions-therefore the same as a method instead a methodology offers a theoretical perspective for understanding which method , set of methods or best practices can be applied to the research questions at hand .

Methodology consists of four major types Based on methods for collections - Observational ,Experimental , Simulation ,and Derived.

5 key elements of methodology section of a research paper

1. Logic of inquiry (Qualitative or Quantitative)
2. Research setting and Participants
3. Methods and procedure of data collection
4. Method and procedure of data analysis
- 5 Ethical issues

The purpose of a Research methodology is to explain the reasoning behind your approach to your research you will need to support your collection methods , methods of analysis and other key points of your works .Think of it like writing a plan or an outline for you what you intend to do.

CHAPTER 2: PHYSICAL AND ECONOMIC BASIS OF STUDY AREA

2.1 Physical Basis

Physiography:

Geographically, Dudhnoi revenue circle extends between 90.52°E to 91.05°E longitude and 25.52°N to 26.10° N latitude with an area about 118sq km area with 67 revenue village. The Dudhnoi area is a small area situated at the Eastern part of Goalpara rural district. The Dudhnoi area consists of plain as well as foothill area. Dudhnoi assembly constituency is part of Guwahati (Lok Sabha constituency). Dudhnoi Legislative Assembly is reserved for Scheduled Tribes candidates only. The Headquarters of Rabha Hasong Autonomous Council (RHAC) is at Dudhnoi. There is also vegetation cover in many places containing valuable forest resources. It also contains drainages and some small water bodies. The main river in this area is the Dudhnoi. Here in this area the Dudhnoi river is considered to be the main river as it passed almost through the centre and its distance in the Dudhnoi area is much longer compared to the other rivers. The Dudhnoi River is a **sub-tributary of the Brahmaputra River** in the Indian state of Assam. The Dudhnoi river originates in the East Garo Hills of Meghalaya. There are also some small lakes and beels where the water use to remain throughout the year round. The village Khara is influenced physiographic conditions located at the North and south part of Dudhnoi.

Climate:

Climate means the average weather conditions of a given region over a long period of time. Climate includes both the normal, expected weather events, such as rain and snow and rare events such as tornadoes. Climate deals, with the methodological elements like spherical pressure, humidity, precipitation, temperature, wind, etc and with the way they are influenced by factors such as changes in latitude, longitude distribution of conditions of continents and ocean and location of ocean currents.

The climate of a location is affected by its latitude/longitude, terrain, altitude, and nearby water bodies and their currents. Climates can be classified according to the average and typical variables, most commonly temperature and precipitation. The most widely used classification scheme was the Köppen climate classification. The Thornthwaite system,^[3] in use since 1948, incorporates evapotranspiration along with temperature and precipitation information and is used in studying biological diversity and how climate change affects it. Finally, the Bergeron and Spatial Synoptic Classification systems focus on the origin of air masses that define the climate of a region.

The climate of Assam is typically '**Tropical Monsoon Rainforest Climate**', with high levels of humidity and heavy rainfall. People here enjoy a moderate climate all throughout the year, with warm summers and mild winters.

The climate in Dudhnoi is moderate during the winter and in summer, it is hot. Rain makes its first appearance in the month of April with occasional and irregular light showers and at times, heavy down pour is followed by cyclonic storm. This irregular rainfall continues up to the end of May. It occurs due to the influence of Northeaster wind. Monsoon rain normally begins from the early part of the month of June and heavy rain occurs in the district till the month of September. The maximum temperature is 33 degree Celsius during July and August, a minimum temperature falls up to 7 degree Celsius in the month of January. During 2002, rainfall in the district is 2,424.01 mm. About 80% of rainfall is from South-West monsoon.

| Seasons | Months | Temperature |
|---------|-------------------|-------------|
| Summers | April to June | 32 C- 38 C |
| Monsoon | July to September | 26 C- 32 C |
| Winters | October to March | 8 C- 20 C |

Drainage:

Drainage is a natural or artificial removal of a surface water and sub-surface water from an area excess of water. The internal drainage of most agricultural soil is good enough to prevent severe water logging (anaerobic conditions that harm root growth) but many soils need artificial drainage to improve production or to manage water supplies.

The river starts from the East Garo hills of Meghalaya flows through Dudhnoi river meets Krishnai river at Matia . Then Mornoi river then confluence with the Brahmaputra river .From East Garo hills a huge amount of minerals are deposited in the Dudhnoi river basins.

Ground water occurs under water table conditions in the near surface aquifers in Older alluvium within fine sand and sandy clay at a maximum depth of about 20 mbgl. It also occurs under semi-confined to confined conditions in the deeper aquifer tapped by medium/heavy duty deep tube wells. In Younger alluvium, ground water occurs under unconfined conditions and is extracted by means of open wells and small diameter tube wells for both domestic and irrigation purposes.

Vegetation:

Vegetation is an assemblage of plant species and the ground cover they provide. It is a general term, without specific reference to particular taxa, life forms, structure, spatial extend, or any other specific botanical or geographic characteristics.

As Dudhnoi area falls under tropical monsoon climate belt, it is rich in natural vegetation. Sal, Gambri, Bamboo, Jam, Gokul, Rubber, Licchi, Banana etc are common trees mainly found in this villages. Besides there are also some trees found with evergreen characters like Mango, Jackfruits. Some creepers and other soft plants are also commonly found in this area.



Fig: Rubber tree.



Fig: Banana tree

Soil:

The soil is a mixture of mechanical and chemical compounds of the materials which are on the earth's surface. They consist of both organic and inorganic materials. The process of formation of soil is influenced by the physical and chemical characteristics of the parent rock, physiography, altitude, climate condition and plants and animals of the surrounding areas.

Soil consists of a solid phase of minerals and organic matter (the soil matrix), as well as a porous phase that holds gases (the soil atmosphere) and water (the soil solution).^{[1][2]} Accordingly, soil is a three-state system of solids, liquids, and gases.^[3] Soil is a product of several factors: the influence of climate, relief (elevation, orientation, and slope of terrain), organisms, and the soil's parent materials (original minerals) interacting over time.^[4] It continually undergoes development by way of numerous physical, chemical and biological processes, which include weathering with associated erosion. Given its complexity and strong internal connectedness, soil ecologists regard soil as an ecosystem.^[5]

Most soils have a dry bulk density (density of soil taking into account voids when dry) between 1.1 and 1.6 g/cm³, though the soil particle density is much higher, in the range of 2.6 to 2.7 g/cm³.^[6] Little of the soil of planet Earth is older than the Pleistocene and none is older than the Cenozoic,^[7] although fossilized soils are preserved from as far back as the Archean.^[8]

Soil acts as an engineering medium, a habitat for soil organisms, a recycling system for nutrients and organic wastes, a regulator of water quality, a modifier of atmospheric composition, and a medium for plant growth, making it a critically important provider of ecosystem services.^[18] Since soil has a tremendous range of available niches and habitats, it contains a prominent part of the Earth's genetic diversity. A gram of soil can contain billions of organisms, belonging to thousands of species, mostly microbial and largely still unexplored.^{[19][20]} Soil has a mean prokaryotic density of roughly 10⁸ organisms per gram,^[21] whereas the ocean has no more than 10⁷ prokaryotic organisms per milliliter (gram) of seawater.^[22] Organic carbon held in soil is eventually returned to the atmosphere through the process of respiration carried out by heterotrophic organisms, but a substantial part is retained in the soil in the form of soil organic matter; tillage usually increases the rate of soil respiration, leading to the depletion of soil organic matter.^[23] Since plant roots need oxygen, aeration is an important characteristic of soil. This ventilation can be accomplished via networks of

interconnected soil pores, which also absorb and hold rainwater making it readily available for uptake by plants. Since plants require a nearly continuous supply of water, but most regions receive sporadic rainfall, the water-holding capacity of soils is vital for plant survival.^[24]

Generally heavy rainfall, high relative humidity and high temperature causes rapid weathering rocks of Dudhnoi area. During the period weathering rocks of weathered materials and the other decomposed materials are carried down by the rain water through rivers and canals to the plain area and are deposited here with the spread of the Flooded water.

Mainly two types of soils are available in the selected village of Dudhnoi Khara. Since the village consists of plain area, old alluvial soil, red soil are available in the area of Khara village in Dudhnoi.

Soil are fine mixed, hyperthermic family of oxyaquic dystropepts.

2.2 Economic basis: A short description of the Area

Khara village is located in Dudhnoi subdivision of Goalpara district in Assam, India. It is situated 1.5 km away from sub-district headquarter Dudhnoi and 45 km away from district head-quarter Goalpara . As per 2009 stats, Dudhnoi is the gram panchayat of Khara.

The total geographical area of Khara village is 126.29 hectares . Khara has a total population of 1,526 peoples out of which value population is 765 while female population is 761. Literacy rate of Khara village is 76.02% out of which 79.87 % out of which 79.87 % males and 72.14% female are literate. There are about 349 houses in khara village.

| Particulars | Total | Male | Female |
|-----------------------|-------|------|--------|
| Total population | 1,526 | 765 | 761 |
| Literate population | 1,160 | 611 | 549 |
| Illiterate population | 366 | 154 | 212 |

CHAPTER 3: CONTRIBUTION OF MINING TO ECONOMY OF KHARA VILLAGE

Socio-economic of Khara village implies the social conditions and the economic conditions of a particular place on the earth's surface. The living standard of the people of a particular place mainly depends on the socio-economic status of the place. Places with favorable economic conditions are felt comfortable to live by the people.

The villager faces lots of problems which take away all their comforts and peace. The socio-economic conditions of the village Khara cannot be said to be much good. Although at present somehow economically they profitable through mining but if a deep thinking are made for the future environmental development it may cause many problems. Many people, male and female both are engaged in the mining, there daily life wages are running through these incomes. Basically the economic problems of the families are maintain with the money they earn daily picking up sand from the river and transport them to different places, also some engaged as dumper driver by which the sand are carried out.



3.1 IMPACT OF SAND MINING ON-

Flood- Khara basically a plain area situated near by the hilly neighboring state Meghalaya especially in the rainy season periodically occurs floods as the over flow of water in Dudhnoi river. As per report of 2004 & 2014 the Bongaigaon to Guwahati railway line through Goalpara, Krishnai and Dudhnoi railway stations laid in 2004 some feet above the lowland villages prevented the water flowing down from Garo hills of Meghalaya into the Brahmaputra river first during the monsoon of 2004 and then again in 2014, thus making Goalpara district a reservoir by inundating all villages in between the hills and track running parallel to it. Some 200 people were officially killed due to the devastation in 2004. Bodies were lined up at National Highway 31 from Bongaigaon to Guwahati. However, people learnt from the deluge and cut the railway track near Dudhnoi station during 2014 floods to allow the water flow into Brahmaputra river," said Mohammad Ashraf of Bollbola village, who lost his son and wife in the 2004 deluge. Though Goalpara district has not been largely affected by the 2017 floods that claimed some 83 lives mainly in upper and central Assam, the affected people can't forget the miseries brought to them by the massive floods of 2004 and 2014. Recalling the 2004 deluge, Hiteshwar Nath, a resident of Barvita village near Krishnai railway station said: "we went to a nearby bridge to see the water level over the main road. While it was at the ankle level when we reached, it came up to the level of hip within ten minutes and near the neck within twenty minutes. People had no time to prepare for their safety. The water got stuck in the high barrage of the railway track. Youth of the village saved a lot of people by ferrying them to safer places in boats. Government came only to provide some rice, pulses and oil. They did not come to our rescue during the emergency." Ramesh Nath (name changed) was one of the many enthusiastic youth who mobilized people to cut down the railway track at Khoirapara village near Dudhnoi railway station to let the flood waters flow into the Brahmaputra.

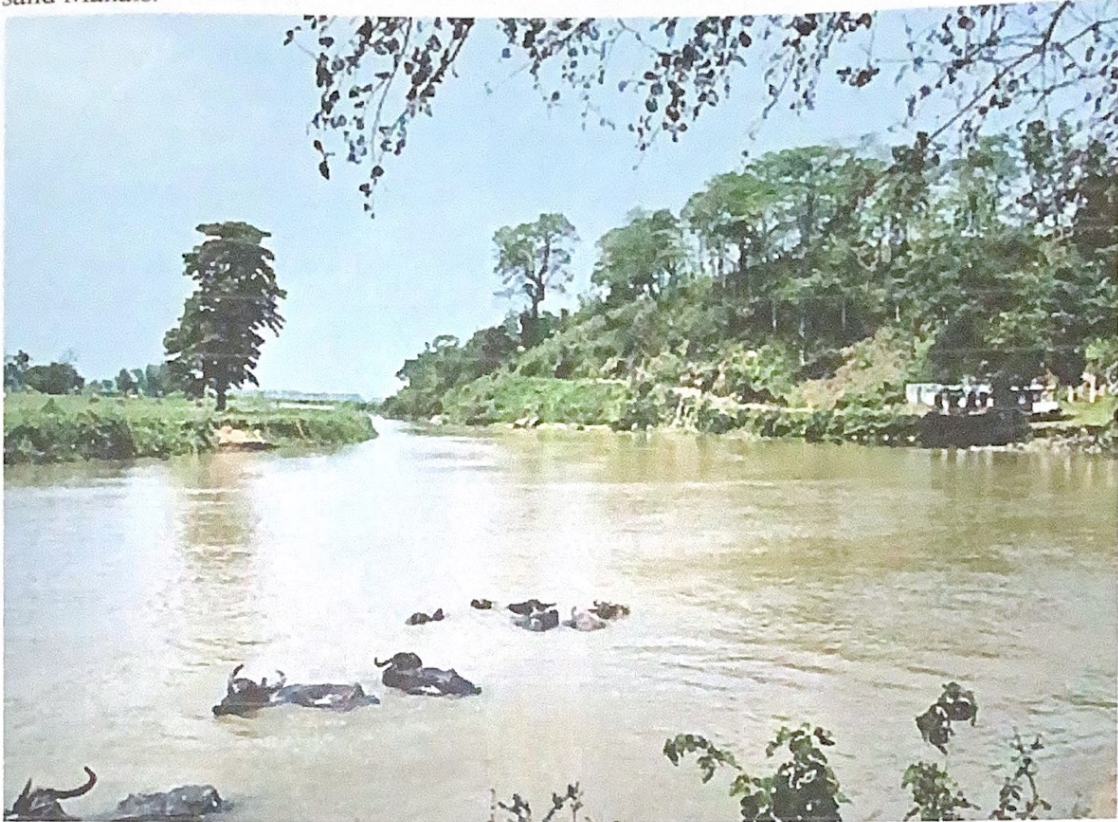


Fig : Flood affected.

Water pollution- Water pollution (or aquatic pollution) is the contamination of water bodies, usually as a result of human activities, so that it negatively affects its uses. Water pollution can be attributed to one of four sources: sewage discharges, industrial activities, agricultural activities, and urban runoff including stormwater. It can be grouped into surface water pollution (either fresh water pollution or marine pollution) or groundwater pollution. Sources of water pollution are either point sources or non-point sources. Point sources have one identifiable cause, such as a storm drain, a wastewater treatment plant or an oil spill. Non-point sources are more diffuse, such as agricultural runoff.^[4] Pollution is the result of the cumulative effect over time. Pollution may take the form of toxic substances (e.g., oil, metals, plastics, pesticides, persistent organic pollutants, industrial waste products), stressful conditions (e.g., changes of pH, hypoxia or anoxia, increased temperatures, excessive turbidity, unpleasant taste or odor, and changes of salinity), or pathogenic organisms. Contaminants may include organic and inorganic substances. Heat can also be a pollutant, and this is called thermal pollution. A common cause of thermal pollution is the use of water as a coolant by power plants and industrial manufacturer

The problem drinking water has also been troubling the local people. It has been reported by the local peoples that the situation was not much in the past. But as soon as the depth of the river increased due to picking up of sand , the ground water level has also gone down to some unexpected depths. As a result no depressed areas of the original depth use to remain filled up with water. The use of power pump sets for picking up of sand from the river bed has also been causing environments pollution. Power pump have been used in large numbers in the

sand Mahals.



Biodiversity- Among birds the most commonly found are the duck ,hen ,cocks ,kingfishers ,pigeon, sparrow, Indian Maina etc. Reptiles are also common in the forested areas of the village like water snakes, python of medium size etc. Lizards and chameleons' are also commonly found here.

Agricultural Productivity

The economy of Goalpara district is primarily agrarian as 90 percent of the population depends for their livelihood on agriculture. Paddy is the major crop. Other important crops include wheat, maize, oil seeds, pulses, cash crop like jute, vegetables etc. The district is also known for its production of areca nut and banana. A big market of banana has come up at Darangiri to which businessmen from all over India come. The agro climatic conditions of the district are conducive for various agricultural activities. Agriculture in the district is characterized by over dependence on rainfall, predominance of seasonal crops and traditional methods of cultivation

The photos of Different Places and objects that have been taken at the time of field surveys have been included in the form of photo plates . At the and of the project reports the schedule cum- questionnaire that have been used in surveying has been placed.

Some photos from Google have also been taken and a systematically put in this project .

All these serial and systematic arrangement have help me in preparing this project report as a final product .Otherwise it would have been impossible .

CHAPTER 4 SUMMARY AND CONCLUSION

The report has been made to show the effect of sand mining on Economy status Environmental issues on the local people of Khara Village .I have Choose the Khara Village to complete this report. In this Sand Mahals Large amount of sands have pick up from the Dudhnoi River and is supplied to different places for different purpose .There are many Advantages and Disadvantages Throughout this activity on local peoples and Environment of Khara Village .

This Project tries to find out the livelihood of local peoples in their daily life impact through Sand mining also Environmental Problems caused due to picking up of sand from riverbed.

This project has been Systematically into four Chapters.

The Chapter 1 of the report discussed about the introduction to sand and its removal from riverbed. Its Studies about the statement of the Problem ,Its Objectives ,Research Question ,Review of Literature , Data base and Methodologies.

Chapter 2: Deals with Physical basis of Physiography, Climate, Drainage ,Vegetation, And soil .Also Deals with Economic basis of a short description .

Chapter 3: Deals with a Historical Perspective ,Contribution Of Mining to Economy of Khara Village on the Local Peoples and Impact of Sand Mining on Flood ,Water Polution ,Biodiversity, and Agricultural Productivity

The last Chapter that is 4 Discuss about Survey Schedule Summary of the Project Report and the Conclusion Part .

Besides by the Application of Statistical ,Cartographic and Mathematical methods some graphs ,Location Maps and Diagrams have also been incorporated in the Project Report .

In the reference section, the list of books, multiples articles etc from where a certain ideas have been derive in preparing the report has been included along with the name of the authors.

CONCLUSION

According to professor, W.H.Ripatric , 'A project is a whole-hearted, prosperous purposeful activity proceeding in a social environment. A project from the point of view of students can be a purposeful learning activity involving practical problems planned and carried out in a real life manner to achieve specific goals. In other words project refers to a successful completion of a study.

The Field survey that I have Conducted in the Khara Village of Goalpara District .It is a small Village located Northern part of Dudhnoi .The Dudhnoi is the main river that passes through this village and is providing great help to the people living in this village. The living style of this villagers is very simple and mainly based on agriculture for their Economy .Through people are hardworking for survival this villagers have taken some steps for which they face both advantage and disadvantage. As for the Example ,the people here never thought that one day the removal of Sand from Dudhnoi river bed would create such a problematic situation. Themselves have to work together to solve this problems that have been caused due to repeat picking up of sand from the Dudhnoi riverbed .

Otherwise it has become quite impossible to stop the prevailing problems in this area.No,doubt, selling of Sands has become a profitable in the recent years .But he should not ignore the terms that it would cause to humanity and the natural environment. They have to work parallel. They Can pickup sand from the Dudhnoi river bed and sell it to buyers, but they should not cause any from to the other living creatures and the natural environment .Then only the prevailing problems would be decreased .

It was a wonderful and learning experience for me while working on this project. This project took me through the various phases of project development and gave me real insight into the world of economic and natural impacts .The joy of working and the thrill involved while tackling the various problems and challenges gave me a feel of developer industry. I enjoyed each and every bit of work I had put into this project.

Thus, this project was of immense benefit for me.

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