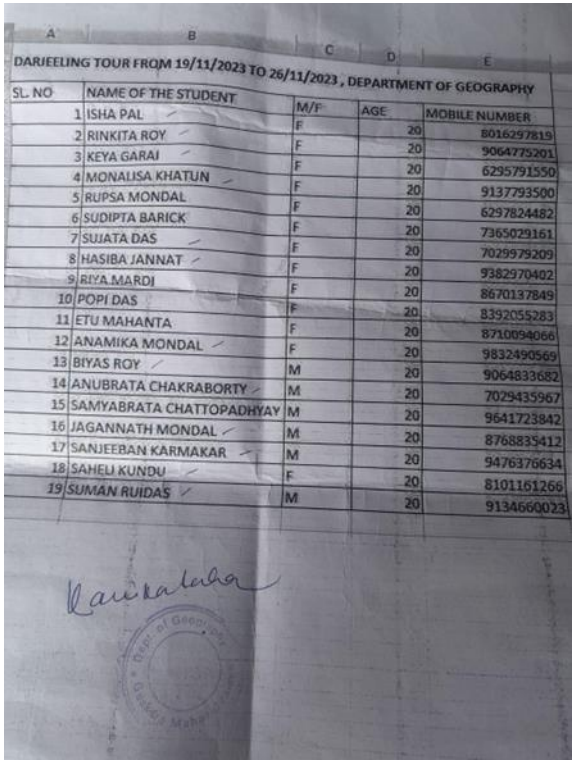
DEPARTMENT OF GEOGRAPHY

LIST OF STUDENTS: 40

1. ANAMIKA MONDAL
2. ANUBRATA CHAKRABORTY
3. ARPITA GHOSH
4. ETU MAHANTA
5. HASIBA JANNAT
6. IPSITA PAL
7. ISHA PAL
8. JAGANNATH MONDAL
9. KEYA GARAI
10. MONALISA KHATUN
11. POPI DAS
12. RINKITA ROY
13. RIYA MARDI
14. RIYA PARAMANIK
15. SAHELI KUNDU
16. SAMYABRATA CHATTAPADHYAY
17. SANJEEBAN KARMAKAR
18. SK SAUDDIN
19. SUJATA DAS
20. SUMAN RUIDAS
21. TITHI MANDAL
22. RUPSA MONDAL
23. SUDIPTA BARIK
24. ADARSH THAKUR



DARJEELING TOUR FROM 19/11/2023 TO 26/11/2023 , DEPARTMENT OF GEOGRAPHY

SL. NO	NAME OF THE STUDENT	M/F	AGE	MOBILE NUMBER
1	ISHA PAL	F	20	8016297819
2	RINKITA ROY	F	20	9064775201
3	KEYA GARAI	F	20	6295791550
4	MONALISA KHATUN	F	20	9137793500
5	RUPSA MONDAL	F	20	6297824482
6	SUDIPTA BARICK	F	20	7365029161
7	SUJATA DAS	F	20	7029979209
8	HASIBA JANNAT	F	20	9382970402
9	RIYA MARDI	F	20	8670137849
10	POPI DAS	F	20	8392055283
11	ETU MAHANTA	F	20	8710094066
12	ANAMIKA MONDAL	F	20	9832490569
13	BIYAS ROY	M	20	9064833682
14	ANUBRATA CHAKRABORTY	M	20	7029435967
15	SAMYABRATA CHATTOPADHYAY	M	20	9641723842
16	JAGANNATH MONDAL	M	20	8768835412
17	SANJEEBAN KARMAKAR	M	20	9476376634
18	SAHELI KUNDU	F	20	8101161266
19	SUMAN RUIDAS	M	20	9134660023

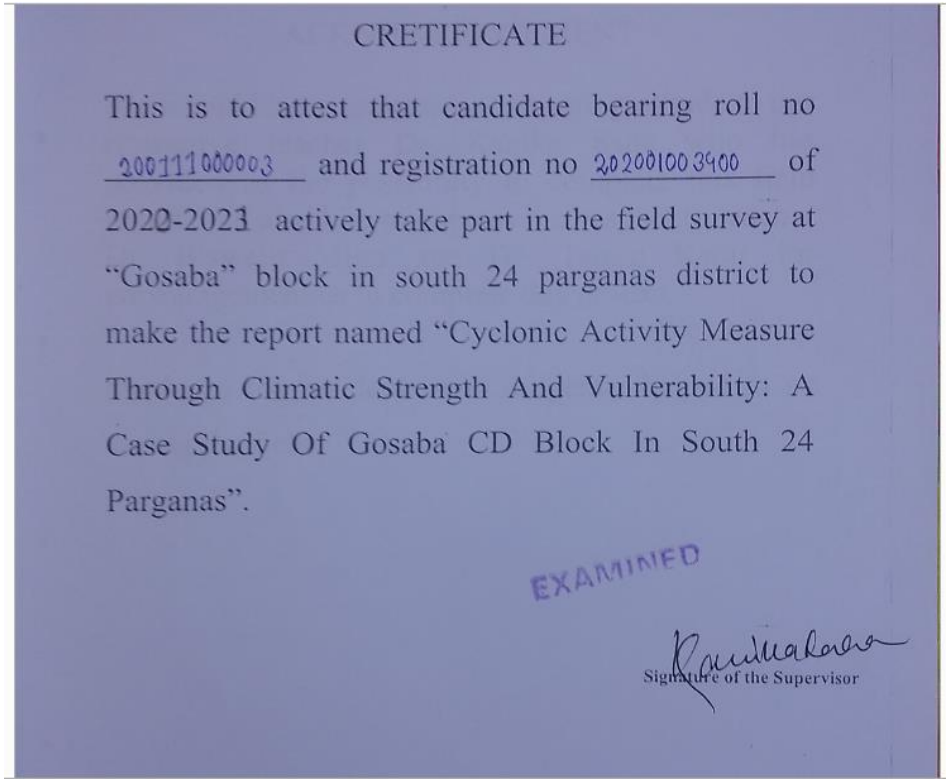
25. AJOY GHOSH
26. AKASH SAHA
27. ASIYA KHATUN
28. IMAN SHIL
29. KAUSHIK MONDAL
30. MIR MD IERUDDIN
31. MOSAMMAT KHALIDA KHATUN
32. NAYAN DHARA
33. PAPRI DEY
34. PRITAM CHAKROBORTY
35. RITAM PAL
36. SK. ABU BAKKAR
37. SRIPARNA MONDAL
38. SUBHADIP SUE
39. SUFIA KHATUN
40. SUSMITA DAS

TITLE OF THE PROJECT : **1. "CYCLONIC ACTIVITY MEASURE THROUGH CLIMATIC STRENGTH AND VULNERABILITY: A CASE STUDY OF GOSABA CD BLOCK IN SOUTH 24 PARGANAS"**
2. FIELD REPORT ON DARJEELING TOUR

DURATION WITH DATE : 1. 17.04.2023 TO 19.04.2023

2. 19.11.2022-26.11.2023

PROJECT WORK COMPLETION CERTIFICATE



CRETIFICATE

This is to attest that candidate bearing roll no 20011100003 and registration no 202001003900 of 2020-2023 actively take part in the field survey at "Gosaba" block in south 24 parganas district to make the report named "Cyclonic Activity Measure Through Climatic Strength And Vulnerability: A Case Study Of Gosaba CD Block In South 24 Parganas".

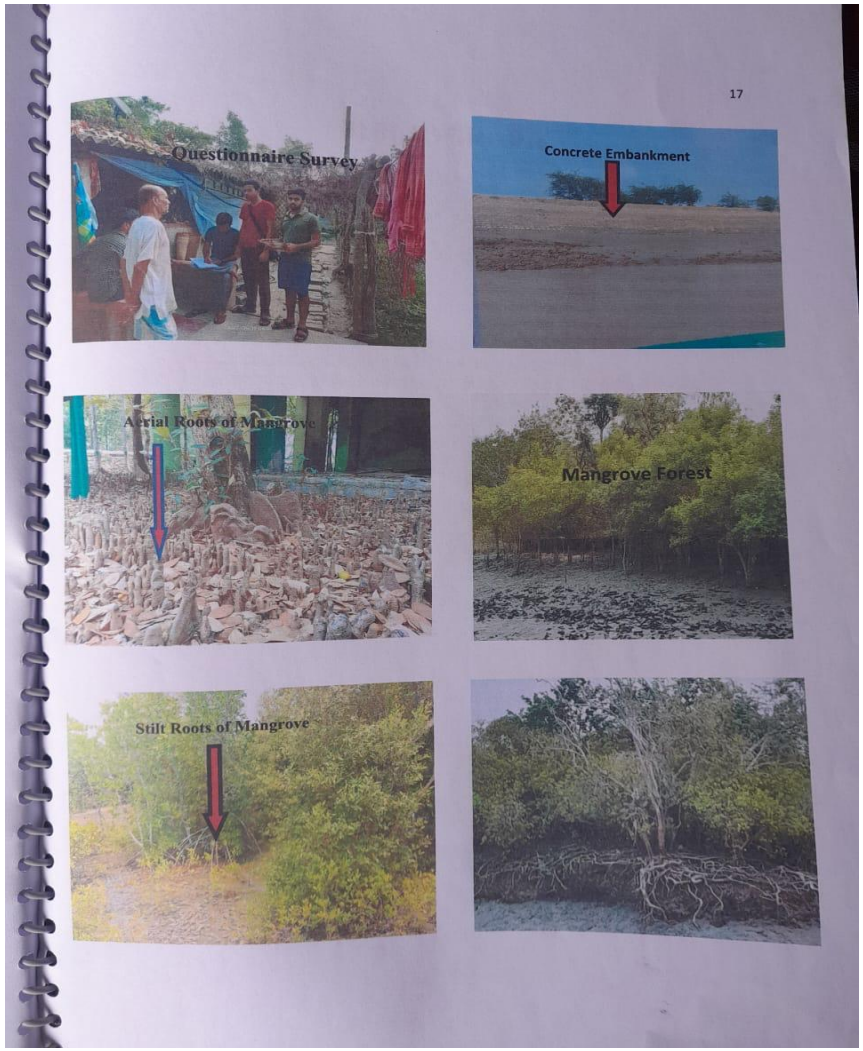
EXAMINED

Signature of the Supervisor

LINK THE REPORT OF THE FIELD WORK : (PDF OF THE REPORT OF THE STUDENT)

1. **PDF OF ADARSH THAKUR**
2. **GENERAL PDF FOR ALL STUDENTS**

SAMPLE PHOTOGRAPH OF THE FIELD WORK :



DATE – 23/11/2

" HOUSEHOLD SURVEY AT LAVA"

Time-7.00a.m

Time – 11.00a.m

"RISHAP"

"RISHAP is a Lepcha village primarily. It's just 9km from lava and 32 km away from KALIMPONG."

Time – 11.50a.m

"PINE FOREST"

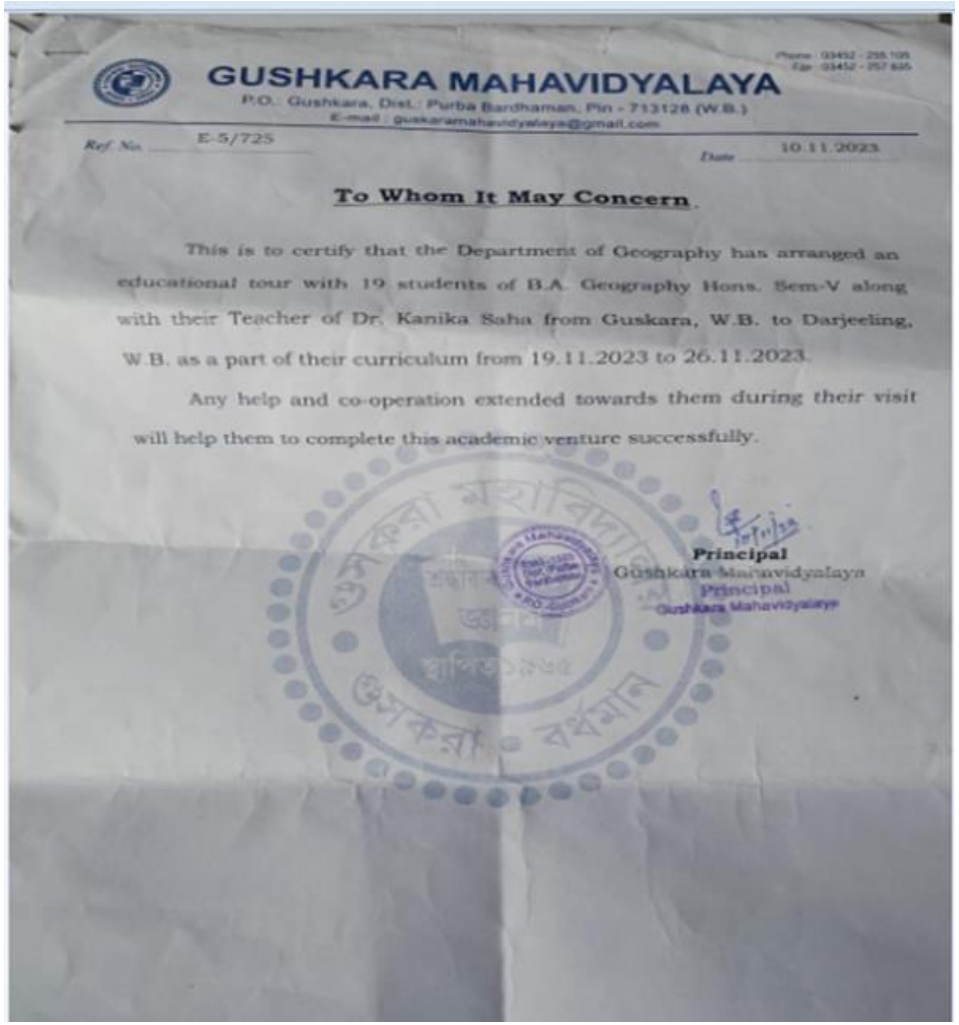
"Amazing view of road the forest covered With pine. It is on the way to LAVA."

Time – 1.00p.m

"LAVA MONASTERY"

"LAVA MONASTERY is also known as KAGYU THEKCHEN LING MONASTERY. It is Buddhist Monastery situated in Lava, WB, INDIA."

PERMISSION LETTER FOR FIELD WORK FROM COMPETENT AUTHORITY



GUSHKARA MAHAVIDYALAYA

P.O.: Gushkara, Dist.: Purba Bardhaman, Pin - 713128 (W.B.)

E-mail : guskaramahavidyalaya@gmail.com

Ref. No. E-5/725 Date 10.11.2023

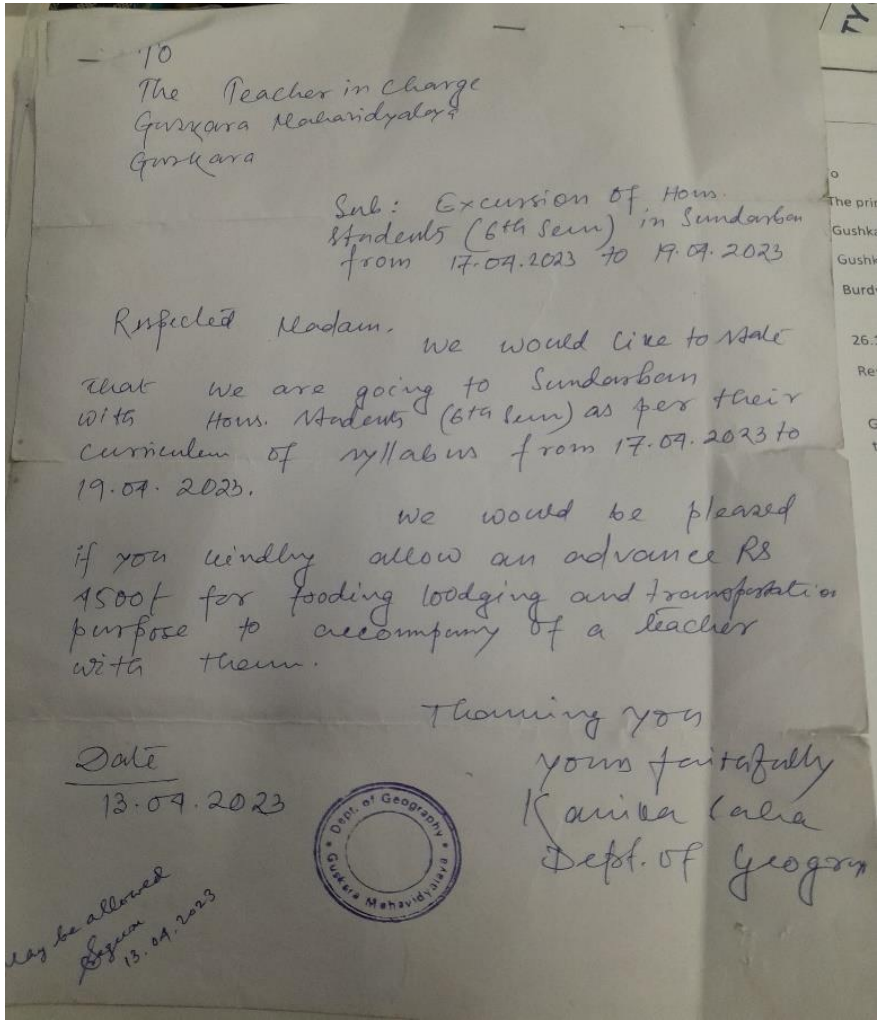
To Whom It May Concern

This is to certify that the Department of Geography has arranged an educational tour with 19 students of B.A. Geography Hons. Sem-V along with their Teacher of Dr. Kanika Saha from Guskara, W.B. to Darjeeling, W.B. as a part of their curriculum from 19.11.2023 to 26.11.2023.

Any help and co-operation extended towards them during their visit will help them to complete this academic venture successfully.

Principal
Gushkara Mahavidyalaya

Principal
Gushkara Mahavidyalaya



To
The Teacher in Charge
Guskara Mahavidyalaya
Guskara

Sub: Excursion of Hons. Students (6th Sem) in Sundarban from 17.09.2023 to 19.09.2023

Respected Madam,

We would like to state that we are going to Sundarban with Hons. Students (6th Sem) as per their curriculum of syllabus from 17.09.2023 to 19.09.2023.

We would be pleased if you kindly allow an advance Rs 1500/- for feeding lodging and transportation purpose to accompany of a teacher with them.

Thanking you

Yours faithfully
Kanika Saha
Dept. of Geography

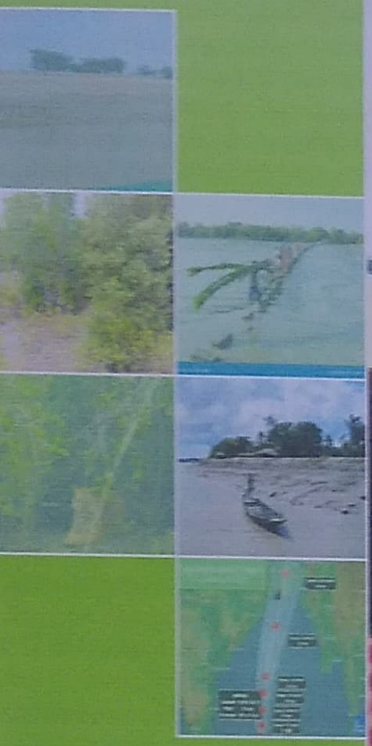
Date
13.09.2023

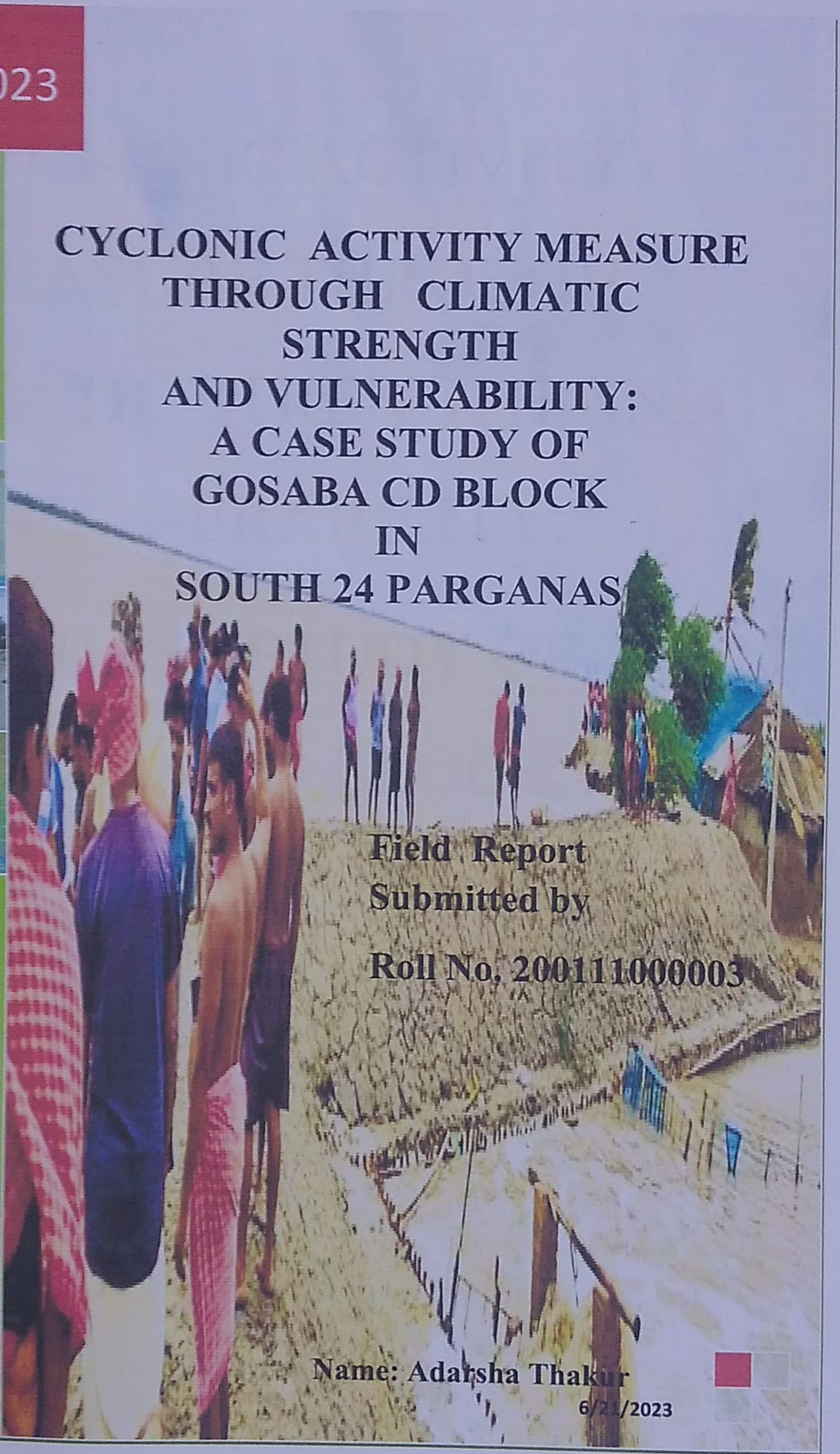
Dept. of Geography
Guskara Mahavidyalaya

may be allowed
13.09.2023

2023

CYCLONIC ACTIVITY MEASURE THROUGH CLIMATIC STRENGTH AND VULNERABILITY: A CASE STUDY OF GOSABA CD BLOCK IN SOUTH 24 PARGANAS





Field Report
Submitted by

Roll No, 200111000003

Name: Adarsha Thakur

6/21/2023

CRETIFICATE

This is to attest that candidate bearing roll no 200111000003 and registration no 202001003400 of 2020-2023 actively take part in the field survey at "Gosaba" block in south 24 parganas district to make the report named "Cyclonic Activity Measure Through Climatic Strength And Vulnerability: A Case Study Of Gosaba CD Block In South 24 Parganas".

EXAMINED

Signature of the Supervisor

ACKNOWLEDGEMENT

We would like to express our sincere gratitude to our respective teacher Dr. Kanika Saha who has provided us the possibility to complete this field report. We also like to express our respect to teacher Dr. Biswajit Mitra and Dr. Tapasi Karar for encouragement us to complete this project.

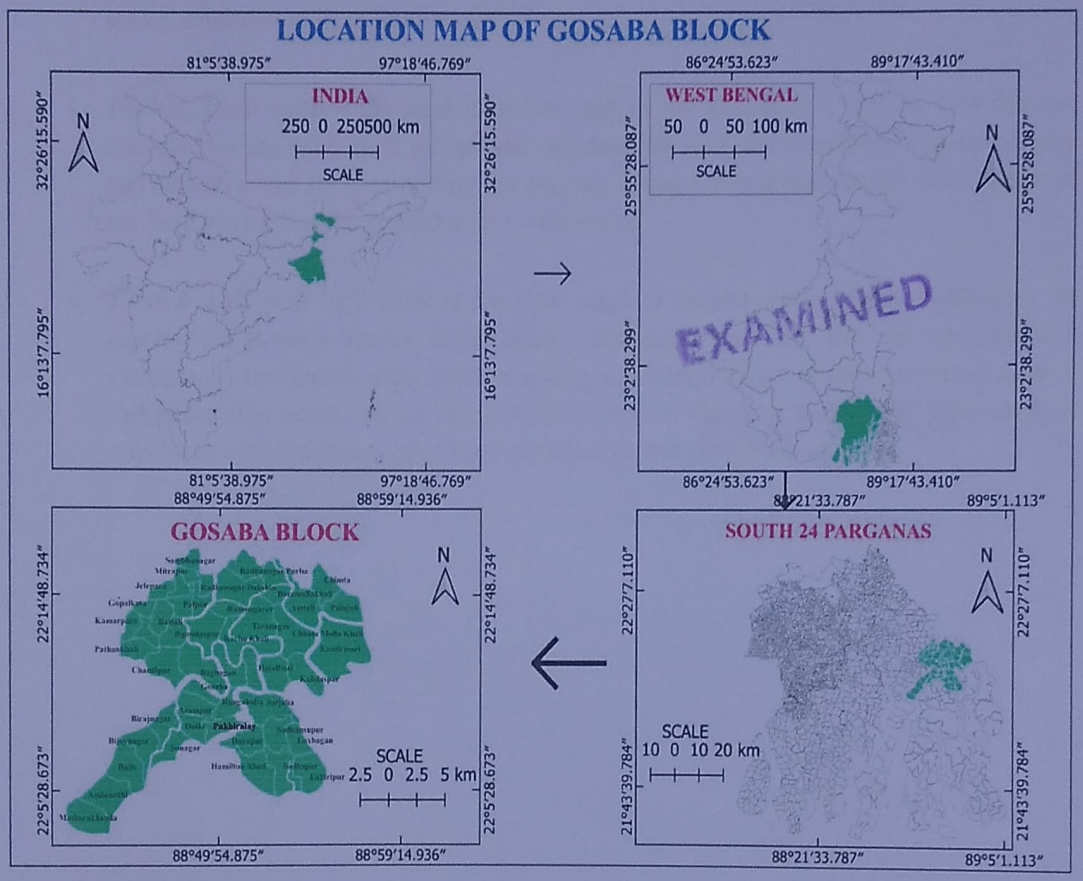
We are also thanks to the residents who diligently helped to us during the field.

CONTENT

PART – A

LOCATION

West Bengal is a one of the most cyclone prone area in India. Our selected cyclone prone study area is Gosaba Block in Canning subdivision of South 24 Parganas district of West Bengal. Gosaba CD Block is located at 22°09'55"N, 88°48'28"E. It is bounded by Sandeshkhali-II CD block in the north, Basanti CD block in the west and Sundarbans forests in the east and south.



AIMS AND OBJECTIVES

This report aims to provide a extensive analysis of the cyclonic problem faced by the Gosaba CD block. The objective of the field survey are to study how to taken the prepare, mitigate and management of the cyclone prone study area. It will examine the impact of cyclones on the socio-economic composition of the region, the vulnerability of the local communities, and the existing measures in place to mitigate the cyclonic risks. Additionally, the report will propose strategies and recommendations to improve the resilience of the Gosaba CD block to future cyclonic events.

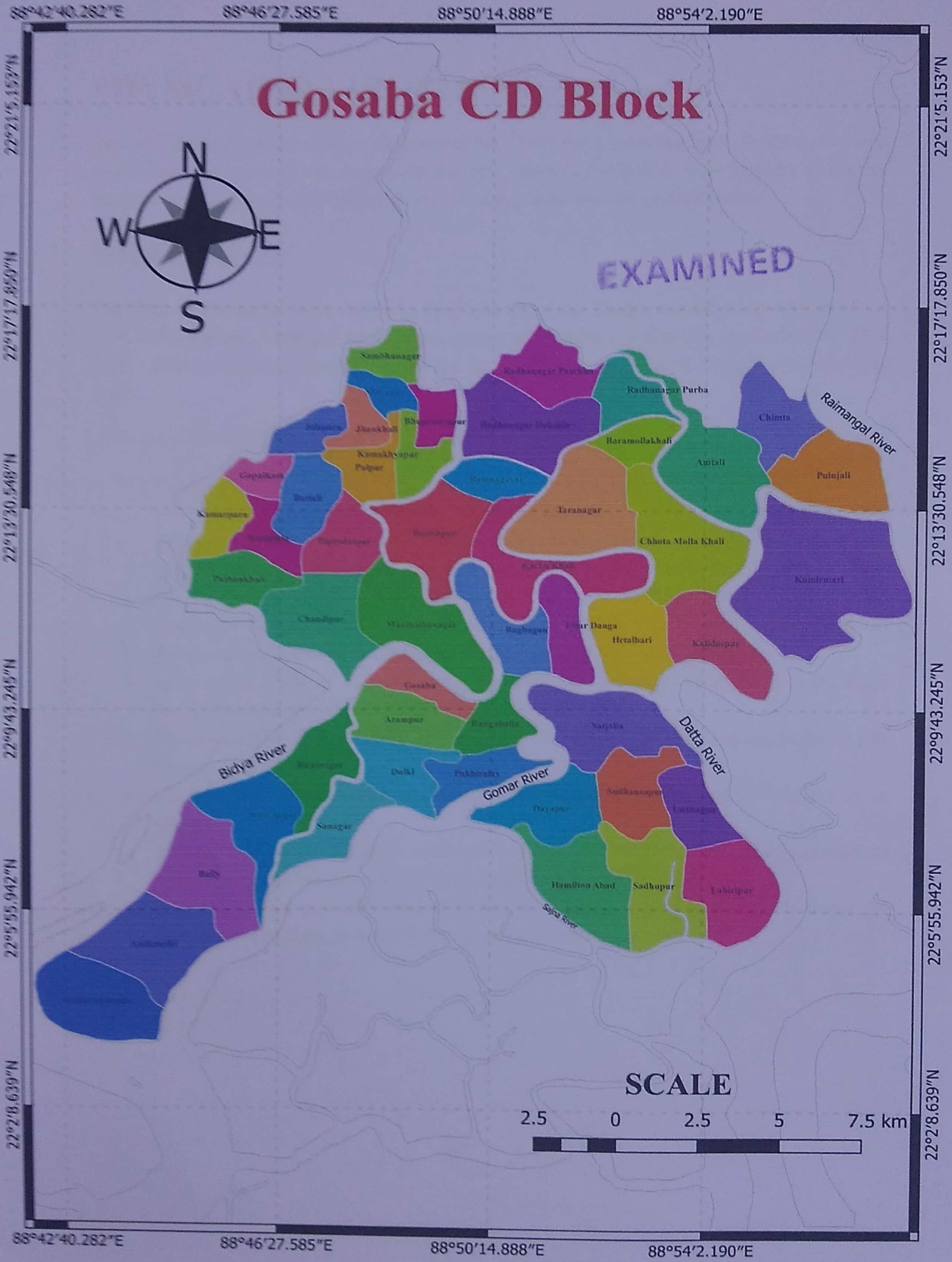
METHODOLOGY

The methodology adopted in the present study and divided into pre-field, field and post-field stages.

- ***Pre-Field:*** Before visiting the field various data and information are collected from different sources. Known the detail characteristics of the study area, different journals, books, information from internet are also used.

- ***Field:*** Field work is the most important part of the total study. Various field data are collected on the spot, such as the land use data, the soil characteristics, vegetation type and also observed for determining the existing landuse. Some meaningful photographs of the field were taken for ground truth verification.

- ***Post-Field:*** post field work is the final stage of project work. In this phase data are represented through proper table, charts, diagrams, map etc. use the statistics and cartography techniques, tabulation, mapping and interpretation of data also have done in this phase after getting all the necessary information. The map, cartograms, interpretation have been completed through proper quantitative and qualitative method.



Gosaba CD Block
N
W
E
S
EXAMINED
88°42′40.282″E
88°46′27.585″E
88°50′14.888″E
88°54′2.190″E
22°21′5.153″N
22°17′17.850″N
22°13′30.548″N
22°9′43.245″N
22°5′55.942″N
22°2′8.639″N
Sambhunagar
Jhaukhali
Kamakhyapur
Palpur
Gopalkati
Kumarpara
Pathankhali
Chandipur
Radhanagar Paschim
Radhanagar Purba
Radhanagar Dakshin
Baramollakhali
Amtali
Chimta
Puinjali
Raimangal River
Taranagar
Chhota Molla Khali
Kumirmari
Bagbagan
Hetalbari
Kalidaspur
Gosaba
Arampur
Rangabelia
Satjelia
Datta River
Bidya River
Dulki
Gomar River
Dayapur
Sudhansupur
Hamilton Abad
Sadhupur
Lahiripur
Sonagar
Bally
SCALE
2.5 0 2.5 5 7.5 km

PHYSICAL ENVIRONMENT

Gosaba CD block has an average elevation of 6m (20ft) from mean sea level. Sundarbans forest in the east and south of the mouza. In the east, there is the border with Satkhira district of Bangladesh. Raimangal and Kalindi rivars run along India and Bangladesh border.

DRAINAGE

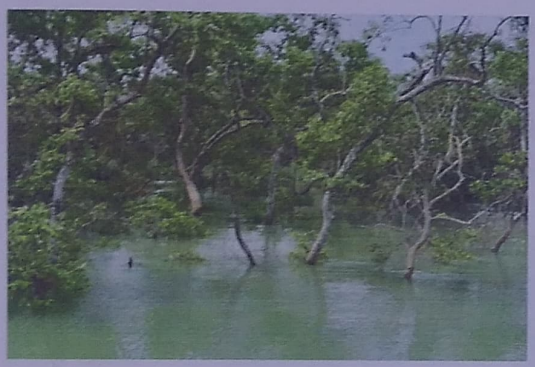
The river of Sundarban were formerly distributaries of the Ganga, but the main current of the river deflected east ward and hence these ceased to be effective drainage channels; through a large volume water is conveyed through the Hugli. Hence most river of the area are essentially tidal.

The main river of the area, most of which are estuaries are:

- The Hugli forms the western boundaries of the district, by which the water of the Ganges enter the Bay of Bengal. Entering the district from the N-E, it flows almost due south, receiving the Damodar opposite the falta point and Rupnarayan opposite the Hugli point.
- The Bidyadhari flows a very continous course and in the northern portion of the district has nearly been silted up. Bidyadhari river is also known as Bidya river.
- The Muri-Ganga before joining the Bay of Bengal bifurcates with another easterlli channel passing east of the Sagar island, the largest of the Sundarban land.
- Saptamukhi is also an estuarine river originating near Sultanpur flows between the Kulpi and Mathurapur blocks.
- Matla joined by the Bidyadhari and ends up in an estuary in a wide opening to the Bay of Bengal.
- Gosaba formed by the confluence of the Raimangal and Matala river, a broad estuary to the sea.
- Harinbhanga flows among the International Boundary of the district and is connected with the river of Bangladesh Jamuna through river Kalindi in the east.
- Raimangal river is a tidal estuarine river in South 24 Parganas district. It forms the internation boundary between India and Bangladesh for few distance.

VEGETATION

Mangroves are main woody plants that in habit the upper intertidal zones of salt water area, primarily in tropical and sub-tropical coastal regions with in 30 degree of the equator and form low diversity forests. Mangroves from a characteristics saline wood land or shrub land habitat, called mangrove swamp, mangrove forest, mangrove or mangal, in coastal depositional environments where fine sediments often with high organic content collect in areas protected from high energy wave action. They occur both in estuary and along open coastlines.



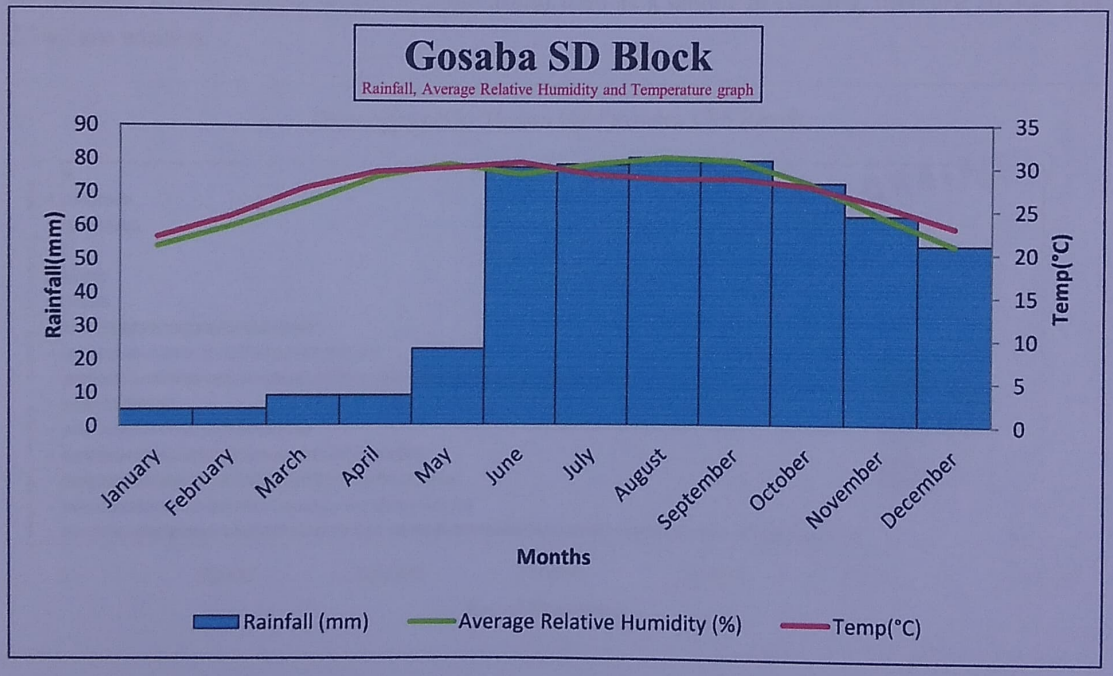
Large grasses and Ipomoea colonisation indicates that the dune became stabilized. Casurina trees and cactus shrubs colonized in the palaeodune field.

SOIL

The soil of this region can be generally classified into five groups depending on the texture of the soil: (a) clay soil (b) heavy soil (c) sandy loam (d) sandy and (e) silty soil. The salinity of the soil is determined by the amount of rainfall occurred and fresh water received from the upper catchment area and the salinity of the tidal water channels from the south. On an average , the entire area may be divided into low salinity up to 8 PPT- northern part, and high salinity from 8 PPT to 20 PPT-southern part of Sundarban. The soils are fertile owing to continuous silt deposits. Salinity of surface soils is high during dry season but is reduced to tolerable limits because of dilution by the leaching effects of rain water.

CLIMATE

The climatic conditions of this region are large similar to the climate of the coastal parts of the West Bengal. A tropical monsoon type of climate can be experienced and the main seasons are summer, winter and monsoon. Summers are warm and temperatures can go beyond the 40 degrees Celsius mark. Winters are mild and many tourists travelled to the place during this period. The summer season starts in the month of march and extends till the end of may. Temperatures can reach a maximum of around 41 degrees Celsius during this period in the region. The temperature can be expected to drop to around 20degrees Celsius during the summer season. winter season is from the December to February and temperatures range from a minimum of 10 degrees to maximum of 30 degrees Celsius.



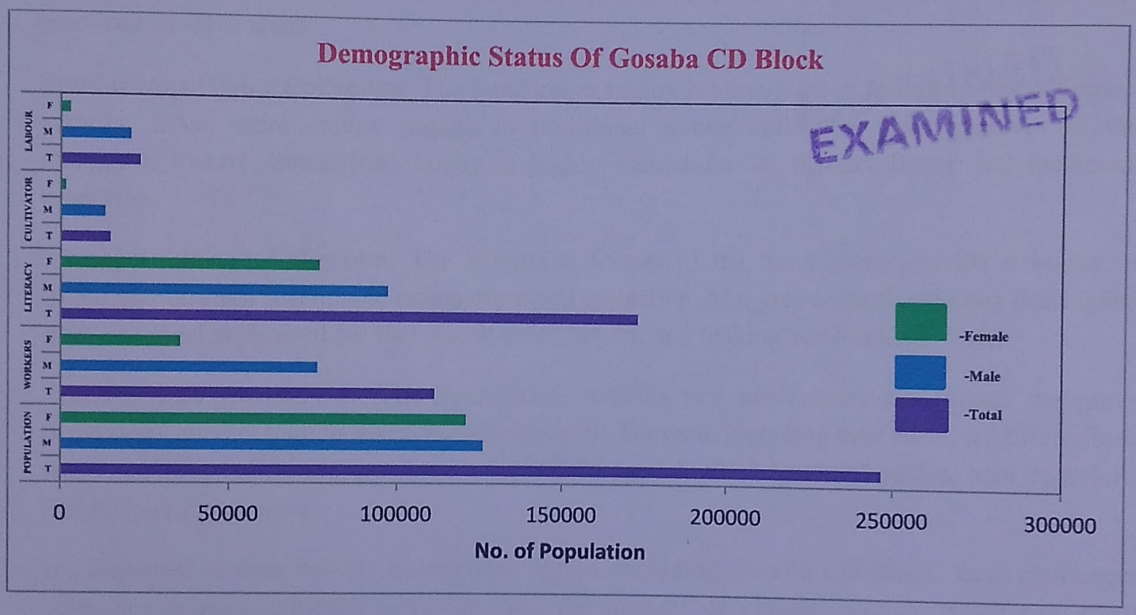
Humidity is also high and this makes it uncomfortable during the day. Relative humidity varies seasonally 80%-85% in April to September and 70% -75% in October-march. Wind velocity varies 16.7-50 km per hour in April to June and 10.7- 11.8 km per hour in October-march.

The monsoon rains start generally in the month of June and end in the month of September. Precipitation varies seasonally which ranges from 750-1950 mm and during June to September

80% of its. The post monsoon months are neither hot not cold and this is the start of the tourist season.

DEMOGRAPHY

Gosaba is Block in West Bengal state, Gosaba CD Block estimated population in 2023 is 325,509. According to 2011 census of India, Total Gosaba population is 246,598 people are living in this Block, of which 125,910 are male and 120,688 are female. Gosaba Block sex ratio is 959 females per 1000 of males. Gosaba population estimated to be 315,645 in 2022. Literate people are 172,781 out of 96,642 are male and 76,139 are female. Total workers are 110,996 depends on multi skills out of which 75,816 are men and 35,180 are women. Total 14,425 Cultivators are depended on agriculture farming out of 12,962 are cultivated by men and 1,463 are women. 23,194 people works in agricultural land as a labour in Gosaba, men are 20,408 and 2,786 are women.



The Gosaba population chart is a graph that shows the distribution of all demographic groups, Literacy percentage is 70.07 percent, out of these 39.19 percent is male literates and 30.88 percent is female literates. Total Workers percentage is 45.01 percent, out of these 30.74 percent is male workers and 14.27 percent is female workers. Total Block Agriculture farmers percentage is 5.85 percent in Gosaba, out of these 5.26 percent is male farmers and 0.59 percent is female farmers. Gosaba Labor percentage is 9.41 percent, out of these 8.28 percent is male labor and 1.13 percent is female labor. Gosaba Block people is divided down between male and

female members of the population. The below graphic shows from Literacy to Households of Gosaba Block.

LIVELIHOOD

The livelihoods in Gosaba CD (Community Development) Block, located in the Sundarbans region of West Bengal, India, are closely tied to the unique ecological characteristics and resources of the area. Here are some of the primary livelihoods in Gosaba CD Block:

Agriculture and Horticulture: Agriculture and horticulture play a significant role in the livelihoods of the local population. Farmers cultivate crops such as paddy rice, vegetables, and fruits in the fertile alluvial soils of the Sundarbans. Horticulture activities include the cultivation of betel leaf, coconut, areca nut, and other cash crops.

Fishing and Aquaculture: Given its coastal location, fishing is an important livelihood activity in Gosaba CD Block. Local fishermen engage in both marine and inland fishing, targeting a variety of fish species, crabs, and prawns. Aquaculture, including shrimp farming, is also practiced in some areas.

Sundarbans Honey Collection: The Sundarbans region is known for its unique honey collection activity. Local communities engage in traditional honey collection from beehives in the mangrove forests. Sundarbans honey is highly valued for its distinct flavor and medicinal properties.

Mangrove Wood Collection: The mangrove forests of the Sundarbans provide a source of livelihood through sustainable mangrove wood collection. Mangrove wood, obtained from fallen trees or branches, is used for fuel wood, construction, and making various handicrafts.

Tourism and Ecotourism: The Sundarbans, with its rich biodiversity and unique mangrove ecosystem, attracts tourists and nature enthusiasts. Tourism, including boat rides, wildlife safaris, and visits to watchtowers, provides employment opportunities for local guides, boat operators, and hospitality services.

It's important to note that the Sundarbans region, including Gosaba CD Block, faces challenges such as cyclones, saltwater intrusion, and the impacts of climate change, which can affect livelihoods and necessitate sustainable adaptation measures. Additionally, various organizations and government initiatives are working to promote sustainable livelihood practices, conservation, and community development in the Sundarbans region.

INTRODUCTION

The cyclonic problem in the Gosaba CD (Community Development) block has been a recurring and pressing issue that demands immediate attention. Gosaba, located in the Sundarbans region of West Bengal, India, is highly susceptible to cyclones due to its proximity to the Bay of Bengal. Over the years, the region has experienced several devastating cyclonic events, resulting in significant loss of life, destruction of infrastructure, and disruption of livelihoods for the local population.

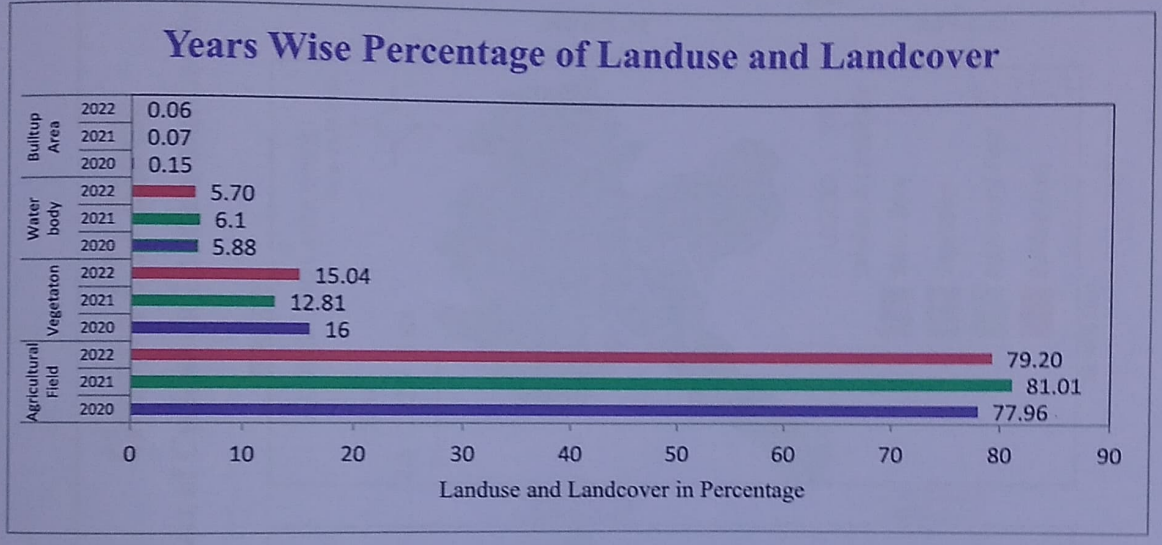
By shedding light on the cyclonic problem in Gosaba, this report seeks to create awareness about the urgent need for proactive measures and policy interventions to address the challenges faced by the local population. Furthermore, it aims to facilitate informed decision-making and resource allocation to ensure the safety and well-being of the community during cyclonic events.

Through a detailed analysis of the cyclonic problem in Gosaba CD block, this report endeavors to contribute to the existing body of knowledge on disaster management and provide actionable insights that can guide policymakers, local authorities, and relevant stakeholders in formulating effective strategies to mitigate the impact of cyclones in the region.

Overall, this report serves as a valuable resource for understanding the cyclonic problem in Gosaba CD block and highlights the importance of adopting a multi-faceted approach that combines disaster preparedness, infrastructure development, and community engagement to build a resilient future for the region.

EFFECT OF CYCLONE ON LANDUSE AND LANDCOVER IN GOSABA CD BLOCK

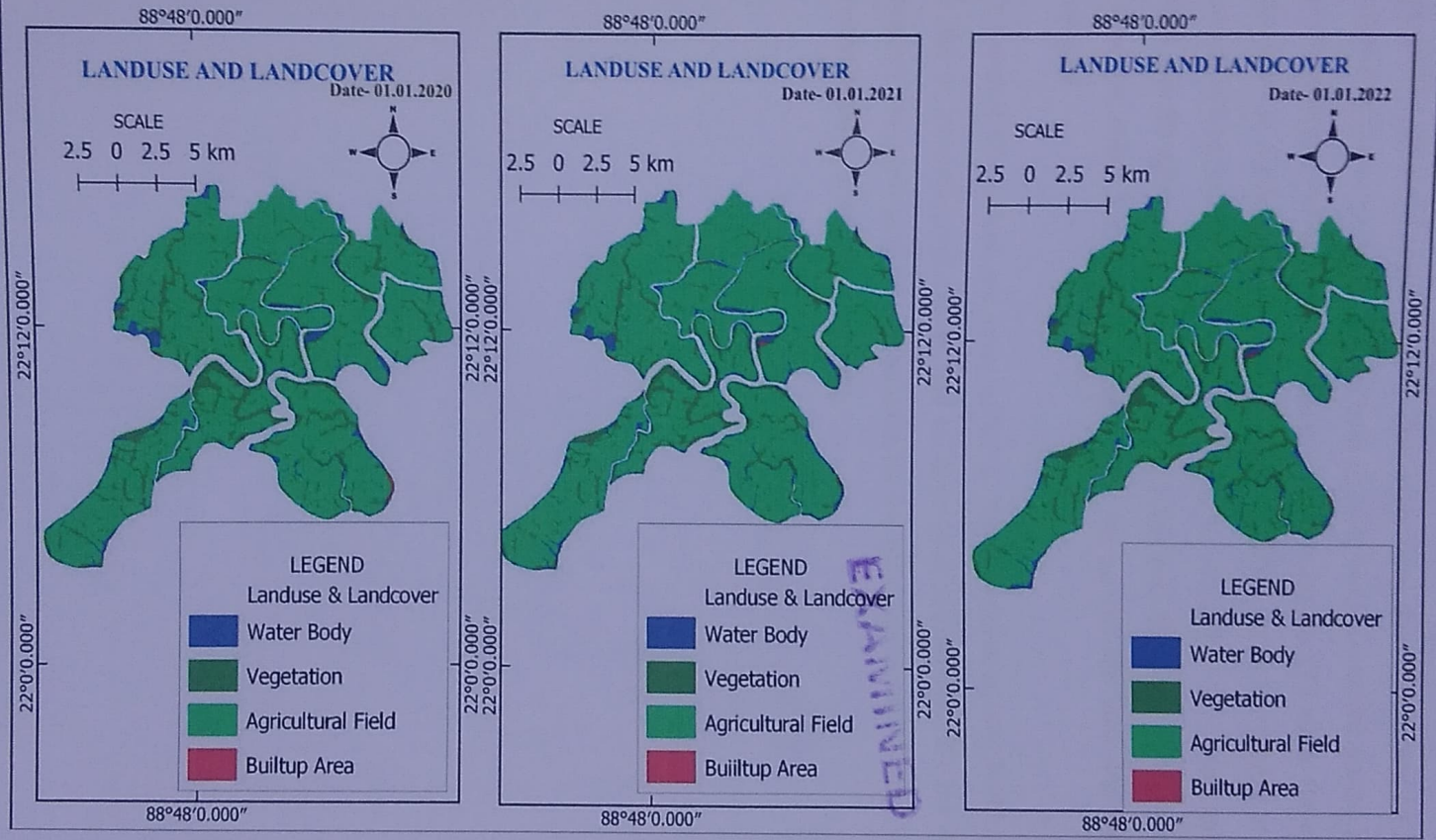
According to land use classification (QGIS- 3.24.3) Gosaba represent a theory with various logic. During field observation, we notice the present condition of water body, vegetation pattern rapid built up area and others natural phenomenon of this region. Our supervisor (**Dr. Kanika Saha**) discuss the past hazard and present seriously very smoothly. Some local people interested to give their valuable suggestion which are directly related our report or education. According to planning we completed questionnaire survey among the cyclonic victim peoples in Gosaba CD block.



After the primary survey we get a proper dimension of the study area but it is not a good enough for better understanding. So that, in use to quantitative verification we used Sentinel -2 10- Meter Land Use/ Land Cover data for land use verification. Download the data in last three year (2020, 2021, 2022) respectively in some time period. We prepare four selective criteria water body, vegetation, agriculture and built up area. According to statistical report water body and agricultural area slightly change according to time. Vegetation rapidly grow in the year of 2022. Basically, the plantation responsible for that after Amphan (cyclone) government implement and grand the fund for rapid plantation of Sundarban and surrounding area to prevent the cyclonic activity. If you focus built up area it gradually decreasing according to the year. May be people

Gosaba CD Block

Effect of Cyclone on Landuse and Landcover



does not interested to life fluvial margin on that particular places. May be they builtup there residentially house inner continental region, mostly 2km away from river either may be some governmental organization (kendriya Awas Yojana) built up there house inside the gosaba block for safety and security purpose during cyclonic activity over the Gosaba CD block frequently formed every year such as Cyclone Fani (2019), Amphan (2020) and Yaas (2021) etc for difficult to agricultural processes, because saline tidal water overflow the river bank and the saline water inundate into the agricultural field and damage it. For this, there is no cultivation can be done on the land for about 3 to 4 years. That's why, the agricultural land degrade the production in this region.

Cyclone itself it's a natural phenomena, we never control it. Rapid cyclonic activity build up on sundarban region due to environmental change and environmental degradation. We are doing any awareness program and planning to rescue the situation. So, we request to all of you, that do not hampered the environment, save if very carefully.

PROBLEMS TO THE LOCAL PEOPLES

Gosaba Community Development (CD) Block, located in the South 24 Parganas district of West Bengal, India, is prone to cyclonic disturbances due to its proximity to the Bay of Bengal. Cyclonic problems faced by the people of Gosaba CD Block can include the following:

1. **Cyclone Vulnerability**: Gosaba CD Block is situated in a low-lying coastal area, making it highly vulnerable to cyclones and storm surges. The region has experienced severe cyclones in the past, such as Cyclone Aila (2009), Fani (2019), Amphan (2020) and Yaas (2021) etc. These cyclones often result in significant damage to infrastructure, agricultural crops, loss of lives, and displacement of communities.

2. **Flooding**: Cyclones in the region often bring heavy rainfall and strong winds, leading to widespread flooding. The low-lying nature of the area exacerbates the situation, as water from rivers and the sea inundates the region, affecting homes, farmlands, and public infrastructure. Flooding disrupts normal life, damages crops, and poses health risks due to waterborne diseases.

3. **Infrastructure Damage**: Cyclonic storms can cause substantial damage to critical infrastructure, including roads, bridges, schools, hospitals, and power supply systems. This damage hampers relief and rescue efforts, delays restoration of essential services, and affects the overall development of the region.

4. **Displacement and Loss of Livelihoods**: Cyclones and subsequent flooding often lead to the displacement of communities residing in vulnerable areas. People are forced to evacuate their homes and seek temporary shelter in relief camps or with relatives. Displacement disrupts livelihoods, particularly for those dependent on agriculture and fishing, which are severely impacted by the cyclonic events.

5. **Environmental Degradation**: Cyclonic disturbances can result in long-term environmental degradation. The saltwater intrusion caused by storm surges can affect agricultural productivity and render freshwater sources contaminated. The destruction of mangrove forests, which act as a natural barrier against cyclones, further worsens the vulnerability of the region.

SUGGESTIONS TO REDUCE THE EFFECT OF CYCLONE

To address these cyclonic problems, various measures can be taken, including:

1. **Early Warning Systems**: Strengthening and expanding early warning systems to provide timely information about cyclones, storm surges, and flood alerts. This helps in minimizing loss of life and property through timely evacuations and preparedness measures.

2. **Infrastructure Development**: Investing in robust infrastructure, including strong embankments, cyclone shelters, and evacuation routes, to withstand cyclonic events. Additionally, ensuring the maintenance and repair of existing infrastructure to minimize damage.

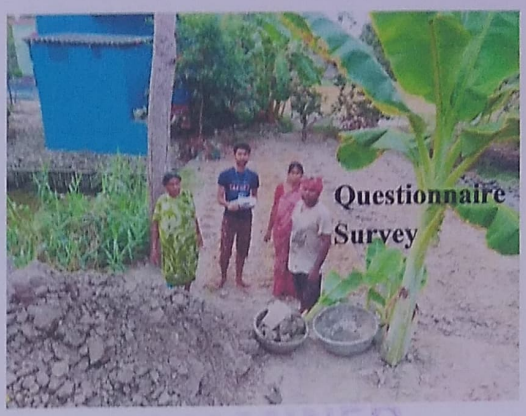
3. **Disaster Preparedness and Response**: Conducting regular drills and training programs for communities and local authorities to enhance disaster preparedness and response capabilities. This includes educating people on evacuation procedures, first aid, and emergency management.

4. **Rehabilitation and Livelihood Support**: Providing assistance and support to communities affected by cyclones, including temporary shelters, food, water, healthcare facilities, and livelihood restoration programs. This helps affected individuals and communities recover and rebuild their lives.

5. **Environmental Conservation**: Promoting the conservation and restoration of mangrove forests and other natural ecosystems to act as buffers against cyclonic events. Encouraging sustainable agriculture practices and reducing vulnerability to environmental degradation.

It is important for the government, local authorities, and community members to work together in implementing these measures to mitigate the cyclonic problems faced by the people of Gosaba Block and ensure their long-term resilience in the face of such natural disasters.

PHOTOGRAPHY



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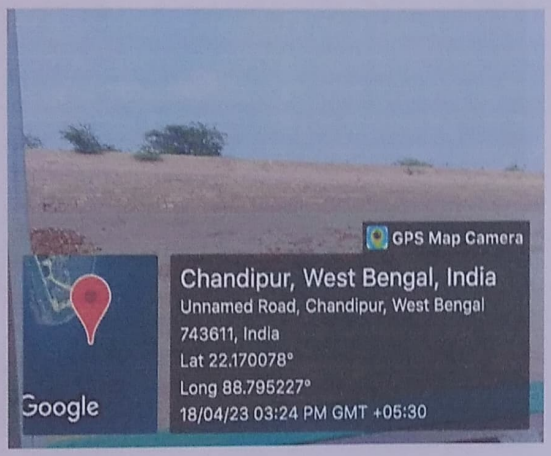
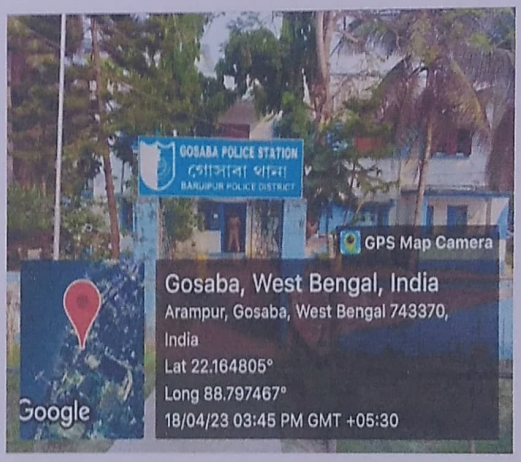
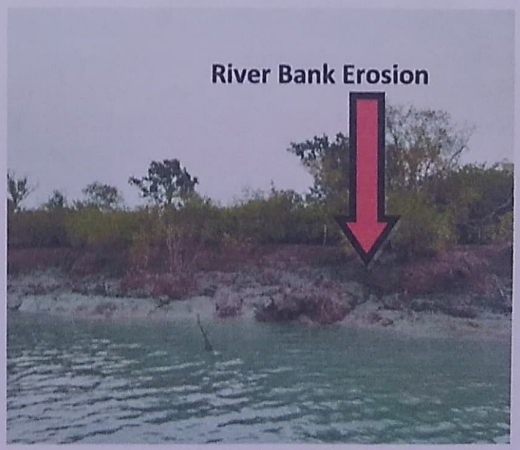
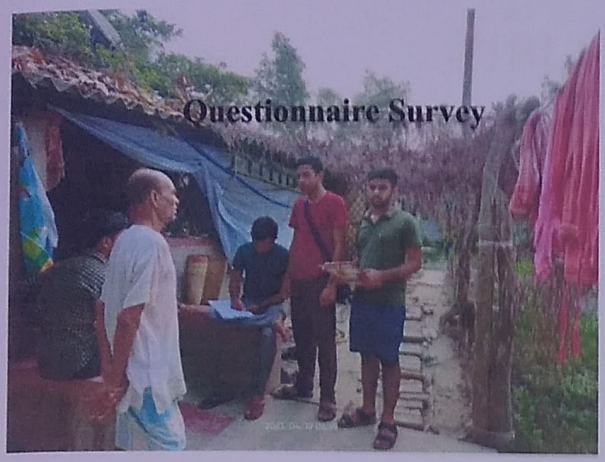
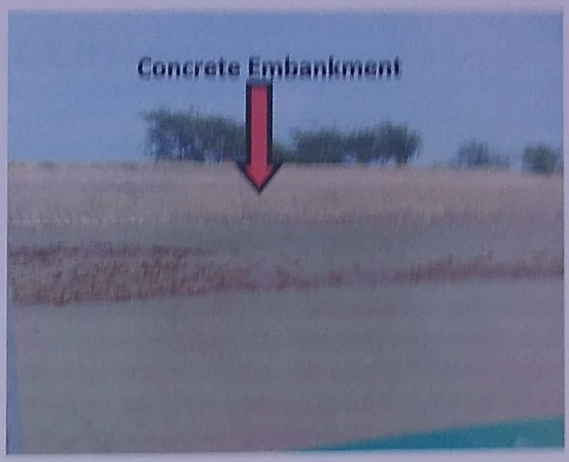


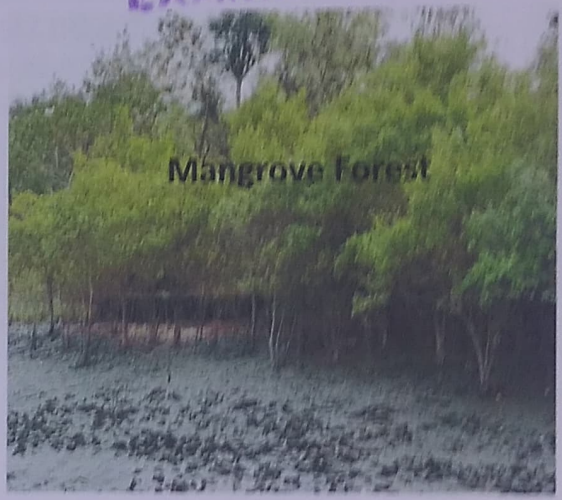




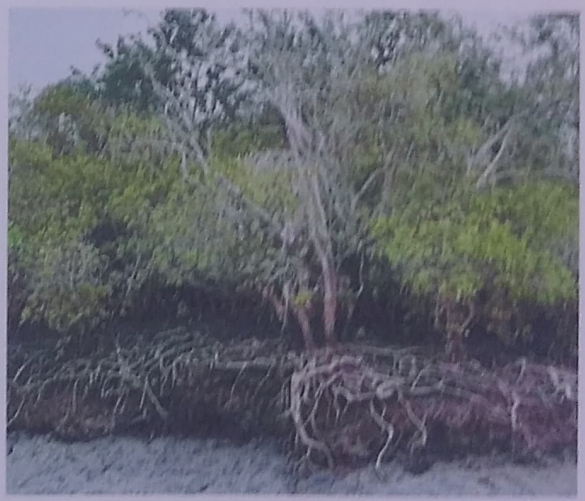

Questionnaire Survey


Concrete Embankment


Aerial Roots of Mangrove


Mangrove Forest


Stilt Roots of Mangrove



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TOUR DIARY

DATE-20/11/2023

Time – 6.30a.m

⇒ **"NEW JALPAIGURI"**

"It is the largest as well as busiest railway junction of northeast India"

Time – 10.30a.m

"MIRIK LAKE" ⇐

"Mirik lake is one of the most attractive and captivating tourist destination followed by DERJEELING in WEST BENGAL. The lake is naturally fed by spring and rainwater and it almost remains full all year round"

Time – 11.45a.m

⇒ ***"GOPALDHARA TEA GARDEN"***

"GOPALDHARA TEA ESTATE is a tea garden in the MIRIK CD Block of DERJEELING district in The Indian State of West Bengal. GOPALDHARA TEA ESTATE 'One of DERJEELING Pride' is one of the highest tea estates in DERJEELING producing DERJEELING TEA."

Time – 1.15p.m

"NEPAL BORDER" ⇐

"It is located on the way to MIRIK. It is known as PASHUPATI PHATAK NEPAL-INDIA BORDER"

⇨ *Time – 1.30p.m*

"PASHUPATINAGAR MANDIR"

"PASHUPATINAGAR is a small border town on the Indo-Nepal Border. It is located on the way to MIRIK.

"MALL" *Time – 7.00p.m* ⇩

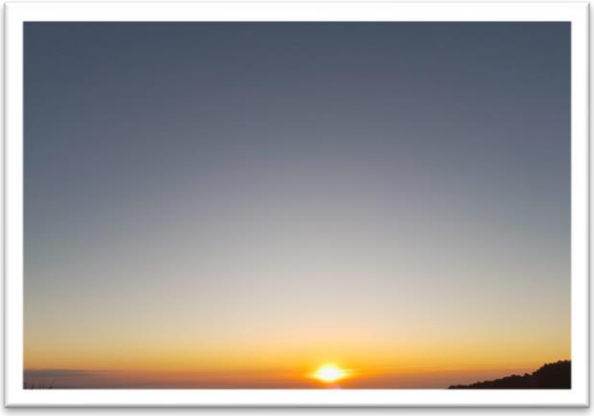
"MALL is the Heart of DERJEELING Town. CHOWRASTA is situated on the ridge of the DEJEELING HILL and is now focal centre of tourist attraction and a popular spot for the residents."

DATE – 21/11/2023

Time – 6.00a.m

"TIGER HIL"

"TIGER HILL is located in DERJEELING in the Indian State of West Bengal. It has a panoramic view of MOUNT KANCHANJUNGA."



⇨ ***Time – 6.30a.m***

"SUNRISE AT TIGER HILL"

"A Sunrise at TIGER HILL is an impressive experience."

Time – 6.30a.m

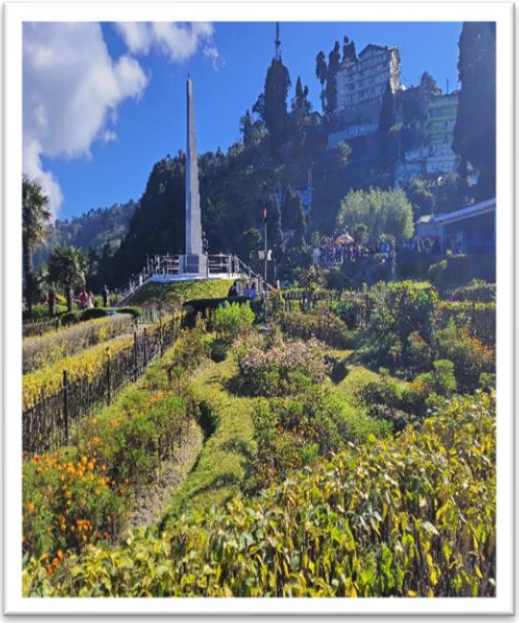
"KANCHENJUNGA VIEW AT TIGER HILL" ⇦

"KANCHENJUNGA, WORLD'S third highest mountain, with an elevation of 8586 metres. It lies in the border region between NEPAL & SIKKIM State of INDIA. The mountain is part of GREAT HIMALAYAS RANGE."

Time – 8.00a.m

⇨ ## ***"GHUM MONASTERY"***

"OLD GHUM MONASTERY is popular name of YIGA CHEOLING. The Monastery is known for its 15 feet high status of the Maitreya Buddha."



Time – 8.30a.m

"BATASIA LOOP"

"The BATASIA LOOP is a SPIRAL Railway created to lower the gradient of ascent of the DERJEELING HIMALAYAN RAILWAY in DERJEELING District of WEST BENGAL, INDIA At this point the track Spiral around over itself through a tunnel over a Hilltop."

Time – 12.15p.m

"HAPPY VALLEY TEA ESTATE"

"It is DERJEELING's second oldest tea garden. Spread over 177 hectares, it is situated at a height of 2100 metres above sea level, 3 kilometres north of DERJEELING."

Time – 2.00p.m

PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK"

Padmaja Naidu (also called DERJEELING ZOO) is 27.3 ha. Zoo in

the town of DERJEELING. The Zoo was opened in 1958 & average elevation of 7000 feet, is the largest High Elevation Zoo in India."

Time – 2.00p.m

Time - 2.50p.m

"HIMALAYAN MOUNTAINEERING INSTITUDE" ⇦

"THE HIMALAYAN MOUNTAINEERING INSTITUDE was established in DERJEELING, INDIA on 4 nov. 1954 to encourage mountaineering as an organised sport in INDIA. And the founder is TENZING NORGAY.

Time – 3.20p.m

"BENGAL NATURAL HISTORY MUSEUM"

"THE BENGAL NATURAL HISTORY MUSEUM is a Museum in ⇦ *DERJEELING, WB, that exhibits a vast range of natural artifacts and fossils. The museum is home to 820 specimens of over 400 species of birds including 110 species of eggs, 35 species of snake ."*

DATE – 22.11.2023

Time – 7.00a.m

⇨ ***"GHUM STATION"***

"GHUM is the INDIA'S highest Railway Station which is altitude 2258 metres."

Time – 1.00p.m

"LOVER'S MEET VIEW POINT"

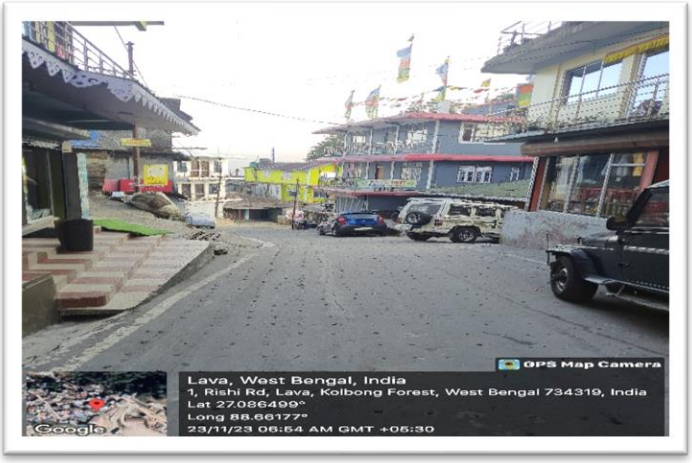
⇦

"Overlooking the confluence of TEESTA &RANGEET River fron lover's point,WB. TEESTA is the major river on the right and RANGEET on the left."

Time – 2.00p.m

"DELO PARK"

"DELO PARK is a flower garden and with spectangular views of KALIMPONG Town, TEESTA River and surrounding. It's altitude is 1704 metres."



Time – 6.00p.m

"LAVA"

"LAVA is a small hamlet situated 30 kilometres east of the town of KALIMPONG through ALGARAH in KALIMPONG District of the State of West Bengal, INDIA."

DATE – 23/11/2

" HOUSEHOLD SURVEY AT LAVA"

Time-7.00a.m

Time – 11.00a.m

"RISHAP"

"RISHAP is a Lepcha village primarily. It's just 9km from lava and 32 km away from KALIMPONG."

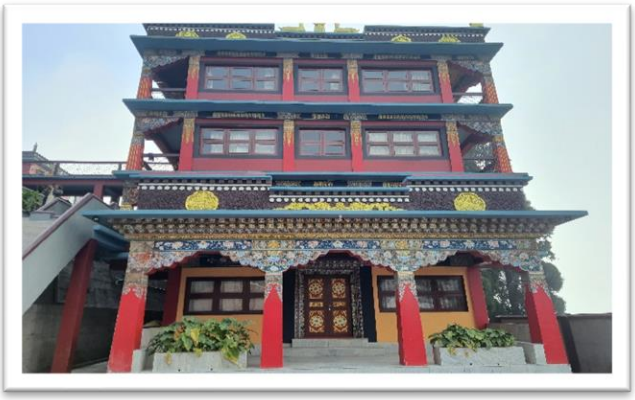
Time – 11.50a.m

"PINE FOREST"

"Amazing view of road the forest covered With pine. It is on the way to LAVA."

Time – 1.00p.m

"LAVA MONASTERY"



"LAVA MONASTERY is also known as KAGYU THEKCHEN LING MONASTERY. It is Buddhist Monastery situated in Lava, WB, INDIA."

DATE – 24/11/2023

Time – 10.30a.m

⇦

"CHELKHOLA RIVER"

"It is situated on the east bank of river NEORA just 50 kilometres road distance from Siliguri."

Time – 11.32a.m

⇨

"AMBEOK TEA GARDEN"

"AMBEOK TEA GARDEN Village is located in GORUBATHAN subdivision of DERJEELING District in WEST BENGAL, INDIA."

DATE – 25/11/2023

Time – 7.36a.m

⇨ *"GORUMARA NATIONAL PARK"*

"Located in the DOOARS region of the HIMALAYAN foothills, it is a medium-sized park with grassland and forest. GORUMARA NATIONAL PARK was established in 1992."

"LAVA HIGH SCHOOL"

" ROCKS OF LAVA"

"LAVA BRANCH OF DERJEELING DISTRICT BANK"

"WATER TANK"

" DRAIN"

"LAVA RURAL MARKET COMPLEX"

" HOUSES OF LAVA"