

GREEN AUDIT REPORT

YEAR: 2021-22

KAMARBANDHA COLLEGE

P. O. KAMARBANDHA ALI

DISTRICT: GOLAGHAT, ASSAM

PIN: 785625



Prepared By-

Internal Quality Assurance Cell (IQAC)

Editor in- Chief: Mr. Atul Saikia, Principal

Kamarbandha College

Editors: Dr. Jadumoni Borkakoty


Mr. Horen Bora

Atul Saikia
Principal
Kamarbandha College
P. O. B. Ali, Golaghat

Dr. Jadumoni Borkakoty
Coordinator, IQAC
Kamarbandha College

Contents

Sl. No.	Title	Page No.
1	Introduction	1
2	Geographical Location with Campus Map in Scale	2
3	Objectives of the Green Audit	3
4	Methodology	3
5	Observation: (i) Land Use Analysis ,Kamarbandha College, Golaghat Assam	3-5
	(ii) Campus Diversity of Kamarbandha College, Golaghat (Assam)	5-16
6	A Summary of Faunal Diversity of Kamarbandha College.	17-20
7	Water use and conservation in college	21
	Drinking Water analysis Report of Kamarbandha College	22
8	Noise Level in the campus of Kamarbandha College	23
9	Waste Management System of Kamarbandha College	24
10	Campus cleanliness	24-25
11	Best practices	25
12	Green Audit Team of Kamarbandha College	26


Principal
Kamarbandha College
P.O. K.B. Ali, Golaghat


Coordinator, IQAC
Kamarbandha College

Introduction:

Green Audit is a systematic identification, quantification, recording and analysis of components of environmental diversity. The 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will help to make our College premise eco- friendly. Green Audit has been initiated for inspecting the various activities that sometimes creates health problems of inhabitants and degrade the environment of the institution. So through green audit, we can protect the natural environment.

About the College:

The college was established in the year 1986. Kamarbandha College is the only centre of higher education in the rural area of Golaghat District. It is situated at Dulakhoria, in the East of Golaghat District and the West of Jorhat District of Assam. It is an institute of higher education in the faculties of Social Science, Humanities and Computer Skill, and it is affiliated to Dibrugarh University. It has received its recognition under Section 2(f) and 12(B) of UGC Act 1956. At present the College possesses a campus of 31 bighas of land, spacious auditorium, playground, library along with some other facilities. It's like dreams come true, when with the efforts of the founders, patrons, donors, faculties, students, guardians and managements, the College was accorded Provincialisation under the Assam Venture Educational Institutions (Provincialisation of Service)Act 2011. It stands amidst the greenery of tea gardens and a natural environment conducive for education, sports and interactions among people of various fields. It is compulsory that the newcomers of the College plant a sapling in our college premise during the time of admission, and have to look after its growth.

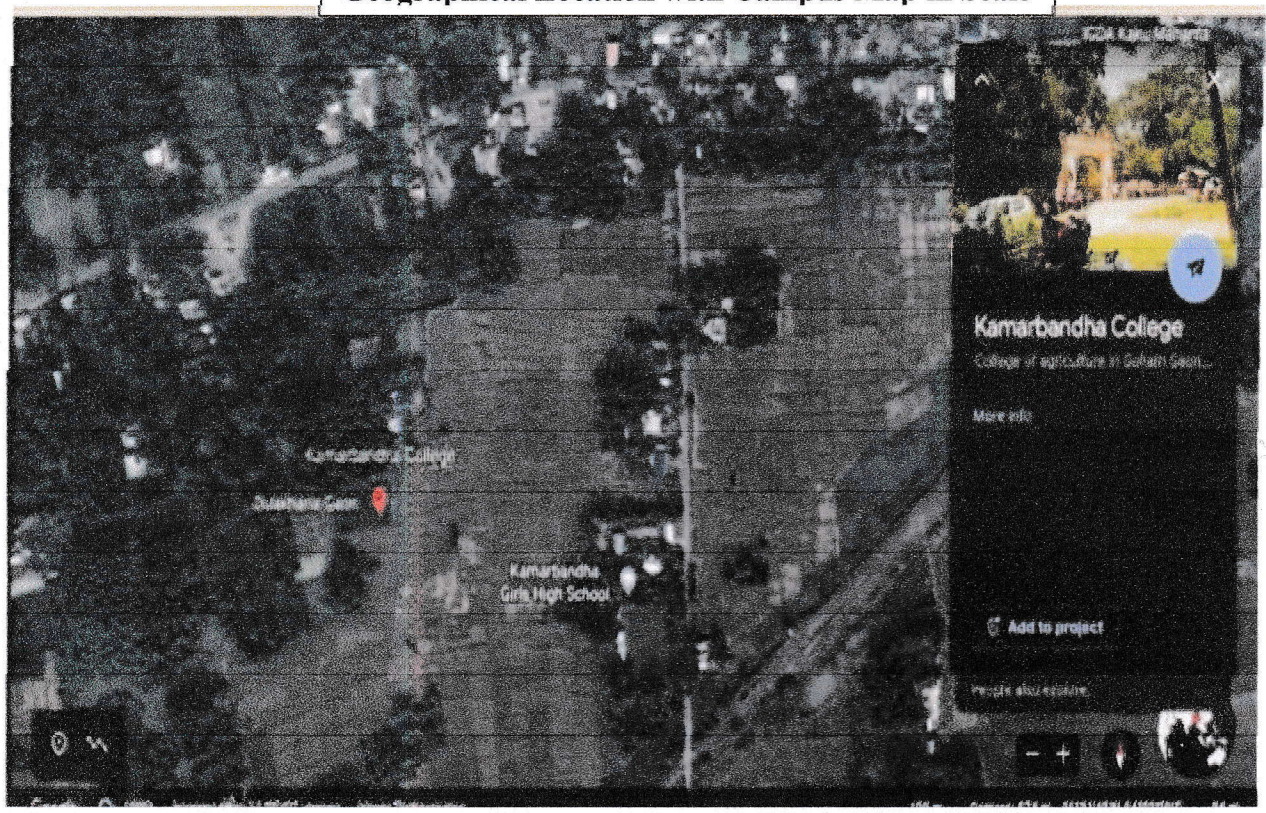
The Mission of the College:

The mission of the College is to provide safe, innovative educational environment, opportunities and experiences that can foster all round development of students and equip them with skills to compete in the challenging world.

The Vision of the College:

The vision of the College is to develop a knowledge centre to achieve diversity and excellence in higher education.

Geographical Location with Campus Map in Scale



Objectives of the Green Audit:

The main objective of the Green audit is to promote the management and conservation of the environment in the college campus. The purpose of the audit is to identify, quantify, describe framework of sustainability in comparison with the applicable regulations and policies. The Green Audit of an institution is a self assessment process which reflects the role of the College in mitigating the environmental problems. The College has taken various efforts for making the environment clean and green through plantation of tree from the beginning but the auditing is not well documented before. Therefore, the aim of the present Green audit is to identify, describe and prioritize framework of environment sustainability in compliance with the regulations, policies and standards.

The main objectives of carrying out Green Audit are:

- To introduce and make aware the students about the environment and its sustainability.
- To secure the environment of the College campus and reduce the chance of threats by analyzing the resources which are used in College premise.
- Prepare data base policy for future sustainability by avoiding the interruption in environment.
- To document the waste disposal system.
- To document the surrounding environmental condition including water and noise.
- To document the flora and fauna diversity of the college.
- To map the Geographical location of the college.

Methodology:

The aim of the Green Audit Kamarbandha College is to ensure that the practices followed in the College premise are in accordance with the Green policy adopted by the institution. The Audit report is prepared on the basis of physical inspections of the campus, observation and review of the document, interviewing key persons, questionnaire and data analysis.

Observation:

Land use analysis of Kamarbandha College:

Kamarbandha College has a total land holding of 26 bighas of which approximately more than 3 bighas are under green cover. A brief note on the built up area (Table No 1) and open space of the College campus is provided below.

Total built up area is approximately 0.80 bigha. Both Assam type and multi storied RCC buildings are found within the campus. Another important feature of the College campus is the aquaculture and orchid plantation. The water bodies inside the campus covering an area of about one Katha land provide support in maintaining a good ecological habitat for a wide of varieties of flora and fauna which are listed in table 2, 3 & 4.

Table 1: Summary of land use:

Land use category	Type	Area	% of total land area
Built-up Area	1.Assam type administrative building including Principal and Vice-Principal's office	Length 70ft,Breadth28ft 1960.0 sq. ft.(0.073 bigha)	0.24%
	2.Assam type Classroom building	Length120ft,Breadth 49ft 5880.0 sq. ft.(0.218 bigha)	0.71%
	3.RCC Teachers common room	Length 58ft,Breadth25ft 1450.00 sq. ft.(0.054 bigha)	0.18%
	4.Students Union, NCC &NCC Unit office	Length 21ft,Breadth 14ft 294.00 sq. ft.(0.011 bigha)	0.04%
	5. Two Storied RCC Building with Digital Classroom Library, Computer Lab, Museum , IQAC Office and toilets.	Length100ft,Breadth 46ft 4600.00 sq. ft. (0.170 bigha)	0.55%
	6.Toilets(Girls/ Boys)	Length 18ft,Breadth 7ft 126.00 sq. ft.(0.005 bigha)	0.02%
	7.NRL Toilets(Gens/Female)	Length 16ft,Breadth 14ft 224.00 sq. ft.(0.008 bigha)	0.03%
	8.Cycle Stand	Length 80ft, Breadth 7ft 560.00 sq. ft.(0.021 bigha)	0.07%
	9.Kuchha Building	Length 80ft,Braedth 16ft 1280.00 sq. ft.(0.047 bigha)	0.15%
	10.Canteen	Length 30ft,Braedth 16ft 480.00 sq. ft. (0.018 bigha)	0.06%
	11.Auditorium	Length70ft,Braedth46ft 3220.00 sq. ft.(0.119 bigha)	0.38%
	12. Girls' Common Room	490.0 sq. ft.(0.018 bigha)	0.06%
	Total 0.762 bigha		
Green Cover	13.Playground	Length,394ft.Breadth,361ft. 142,234 sq. ft.(5.268 bigha)	17.00%
	14.Tea garden area	3 bighas (43200 sq. ft.)	9.68%
	15.Open Space	1 bigha (14400 sq. ft.)	3.23%
	16.Flower Garden	750 sq. ft (0.028 bigha)	0.10%
Water Bodies	17. Ponds and Wetland	600 sq. ft.(0.022 bigha)	0.07%
Utilized Area		272160 sq. ft.(10.08 bigha)	32.52%
Unutilized Area		564840.00 sq. ft. (20.92 bighas)	67.48%

Total area= 31 bigha

N. B. (1 bigha = 27,000 sq. ft. in Golaghat)

Campus Diversity of Kamarbandha College, Golaghat (Assam)

Kamarbandha College is situated at Dulakhoria, in the East of and the West of Jorhat District of Assam. The area of the College Golaghat District is immensely diverse with variety of trees species. Most of the trees are planted in different periods and various plantation programmers' or activities are carried out by the College authority also. The trees of the College make the campus green and beautiful and provide fresh oxygen not only for the College fraternity but also the people around of the college. The trees of the college increased the quality of life in terms of improving air quality, conservation of water and soil, moderating the effects of sunlight and keep things cool during Summer. Many animals are dependent on these trees for their food and shelter. Different kind of fruit trees and some kind of medicinal plants are also available in the campus and fruits are eaten by the monkeys and birds. Different kind of insect and flies squirrels and birds are also seen in the College premise. From the recent study it was found that there are about 51 types of trees within the College campus and at least 6 species of mammals and 7 species of birds are found within the College campus. Apart from these 6 species of butterfly and 8 species of fishes distributed in the pond of the College. Also, there are many invertebrates' species belonging to various orders which needs detailed survey.

More importantly, there is a tea garden within the College campus and it is planted in an area of 3 bighas of land. It not only makes the campus beautiful but it is considered as an income source for College also. Thus the *natural landscape of the Kamarbandha College provides a unique environmental setting conducive for a wide range of flora and fauna diversity has been playing an important role in maintaining the environment of the entire area of the College as well as its surroundings.*

The College campus covers the area of 6 acres land and it boasts of having around 100 species of plants. Among these there are several medicinal and edible fruit plants. A list of plant species is given below---

Table 2: A summary of floral diversity in Kamarbandha College

Sl. No.	Local Name	Common Name of Tree / Plant	Scientific Name	Total No
1	Bel	Wood Apple	Aegle Marmlos	2
2	Bhat Kerela	Teasel Gourd	Momordica dioica	01
3	Aam	Mango Tree	Magnifera Indica	3
4	Satiyana	Devils Tree	Alstonia Scholaris	4
5	Neem	Neem	Azadirachata Indica	01
6	Aamlakhi	Amla	Phyllanthus Emblica	3
7	Arjun	Arjun	Terminalia Arjuna	01

8	Bakul	Maulsari	Mimusops Elengi	01
9	Bagari	Ber	Ziziphus Mauritiana	4
10	Madhuri	Guava	Pridium Guajva	3
11	Jamu	Berry	Syzyyium Cumini	2
12	Outenga	Elephant Apple	Deelenia India	01
13	Jaffai	Indian Olive	Elacocarpus Serratus	01
14	Debodaru	Mast Tree	Polyalthia Longifolia	2
15	Gamari	Gamari	Gmelina Arborea	03
16	Pani amara	Garuga	Garuga Pinnta	02
17	Krishnasura	Gulmohur	Delonix Rigia	04
18	Poma	Indian Mahgany	Tona Ciliata	01
19	Segun	Teak	Tectona Grandis	01
20	Sewali phul	Night Flower Jasmine	Nyctanthes Arbor tristis	01
21	Himofu	Red silk Cotton	Bombax Ceiba	01
22	ChahGas	Tea plant	Camellia Sinensis	
23	Gul nemu	Rough Lemon	Citrus Jambhiri	01
24	Dalcheni	Cinnamon	Cinnmomum Zelanicum	01
25	Dimoru	Indian Fig Tree	Ficus Glomerata	05
26	Ponial	Indian Palm Tree	Flacourtia Jangomas	04
27	Bogi Jamu	Rose Apple Jambos	Syzygium Jambos	06
28	Borgas	Banyan Tree	Ficus Benghalensis	28
29	Tee Coma	Albizia proeera		29
30	Bamboo Palm	Chrysalidocarpus		01
31	Bhafuka Bah	Balacooa bamboo	Bambusa balcooa	01
32	Lechu	Litchi, lychee Tree	Litchi Chinensis	02
33	Sirish	Rain Tree	Samanea Saman	27
34	Hunaru	Golden Shower Tree	Cassia Fistula	03
37	Hualu	Hualu	Litsea Monopetala	05
38	Thekera	Bar Thekera	Garcinia Pedunculata	01
39	Karpur	Camphoor Tree	Cinnamomum Camphora	01
40	Aparajita	Butterfly-Pea	Clitoria Ternatea	01
41	Amara	Hog plum Tree	Spondias Mombin	01

42	Pura Aamlakhi	Star Gooseberry Tree	Phyllanthus Acidus	01
43	Sachi	Agar Wood	Aguilaria Malaccensis	2710
44	Jati Bah		Bambusa tudda	01
45	Jetuka gas	Indian Heena plant	Lawsonia inermis	01
46	Nahor	Ceylon ironwood		02
47	Narashingo Gas	Curry tree	Murraya koenigil	
48	Dhopat tita		Clerodendrum kaempferi	
49	Hilikha	Myrobalan	TERminalia chebula	
50	Hiju Gas	Llai kalli	Euphorbia ligularia	
51	Tejpat	Indian Bay Leaf	Laurus Nobilis	
52	Yastimadhu			
53	Maikokai	-----	-----	
54	Tamul Gaas	Betelnut Plant	Areca Cathecu	
55	Kal Gass	Plantain Tree	-----	
56	Akon Gaas	Crown flower	-----	
57	Keturi Gaas	-----	Curcuma Aromatica	
58	Futokola	Malabar melastome	Malastoma Malabathricum	
59	Ajar Gaas	Queen's Crape-Myrtle	Lagerstroemia Reginae Roxb	02
60	Bilongani	-----	Hristella Parasitica	30
61	Haladhi	Turmeric	Urcuma Domestica	04
62	Dhekia	Vegetable Fern	Diplazium Esculentum	

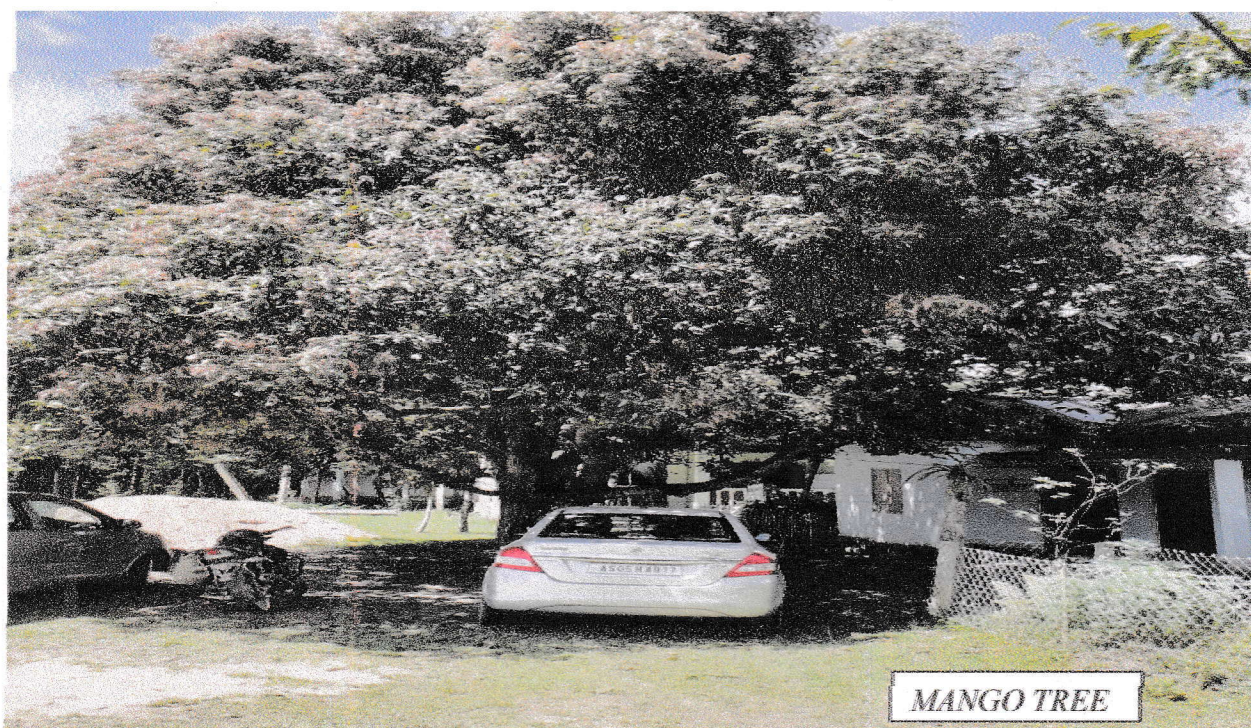
Table 3: Summary of flowers in Kamarbandha College.

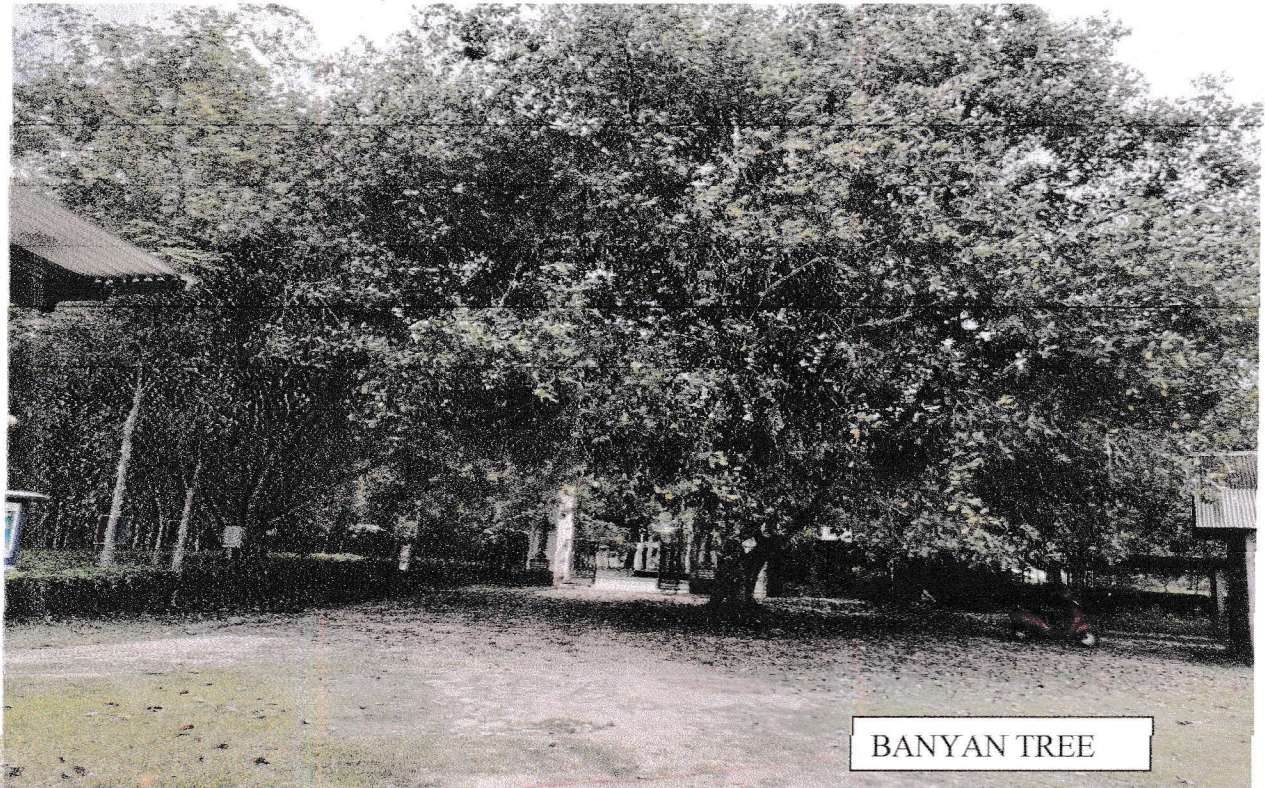
SI No	Local Name	Common Name	Scientific Name	Total No
01	Aparajita	Butterfly pea	Clitoria tematea	01
02	Ashok phul	Ashoka flower	Saraca asoca	01
03	Kapou phul(boga)	Fragrant aerides	Aerides odorata	
04	Gulap Phul	Rose	Rosa spp	01
05	Joba	China rose	Hibiscus rosa sinensis	
06	Togor	Gardenia	Gardenia angusta	
07	Nayantora	Madagascar rosy periwinkle	Catharanthus roseus	
08	Narji phul	Marigold	Tagetes spp	
09	Parijat	Indian shot	Canna indica	
10	Boga gulap	White rose	Rosa jacare	
11	Massenda	Mussaenda	Mussaenda philipiica	

Table 4: A summary of some Medicinal Plant in Kamarbandha College

Sl No.	Local Name	Common name	Scientific Name	Total No
1	Hukloti	Patchouli	Pogostemon cablin	
2	Podina	Peppermint	Mentha piperita	
3	Madhu huleng	Chinese knotweed	Polygonum chinense	
4	Lajabori	Heart leaf drymary	Drymaria cordata	
5	Gheu Kasu	-----	-----	
6	Bikhyalya karani		Justicia gendarussa	
7	Kasu	Taro	Colocasia esculenta	
8	Bilongani		Christella parasitica	
9	Dupar tenga	Bryophyllum	Brophyllum pinnatum	
10	Insulin Gas			

Some Images of the College Greenery:

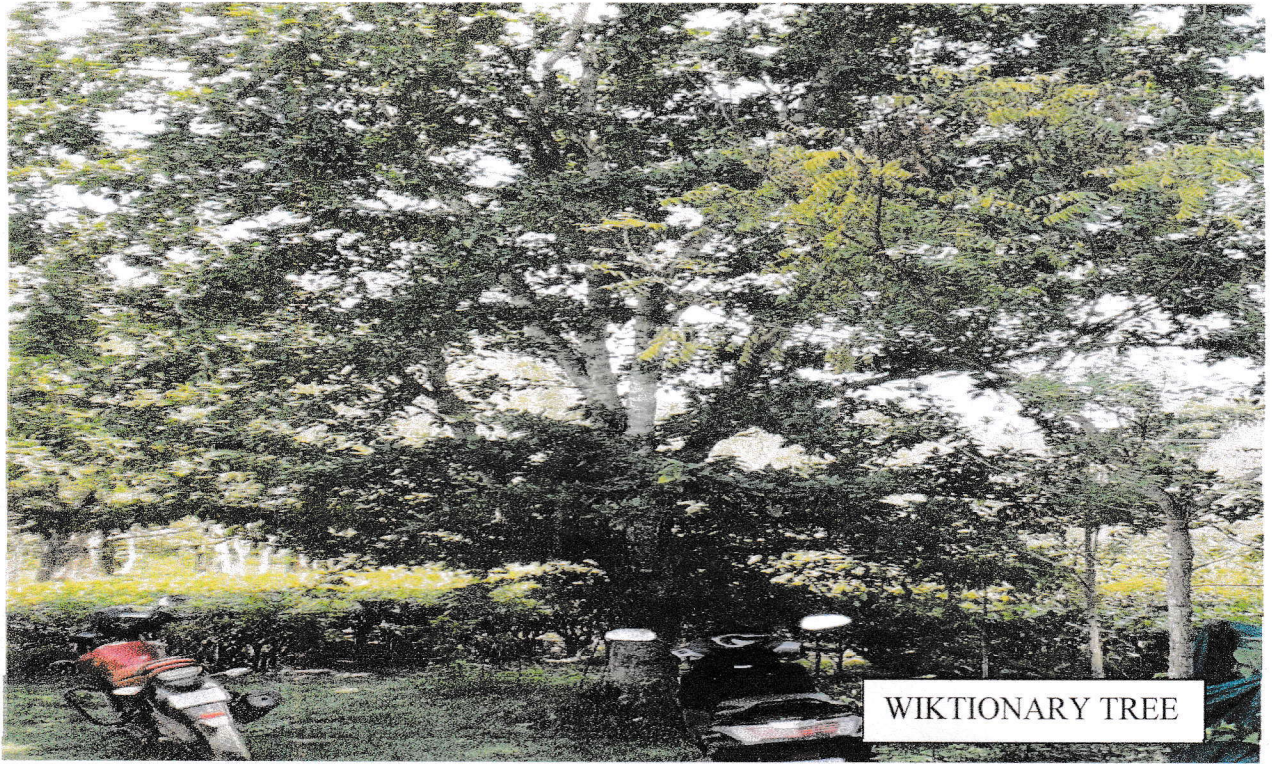




BANYAN TREE



KRISHNA SURA



WIKTIONARY TREE

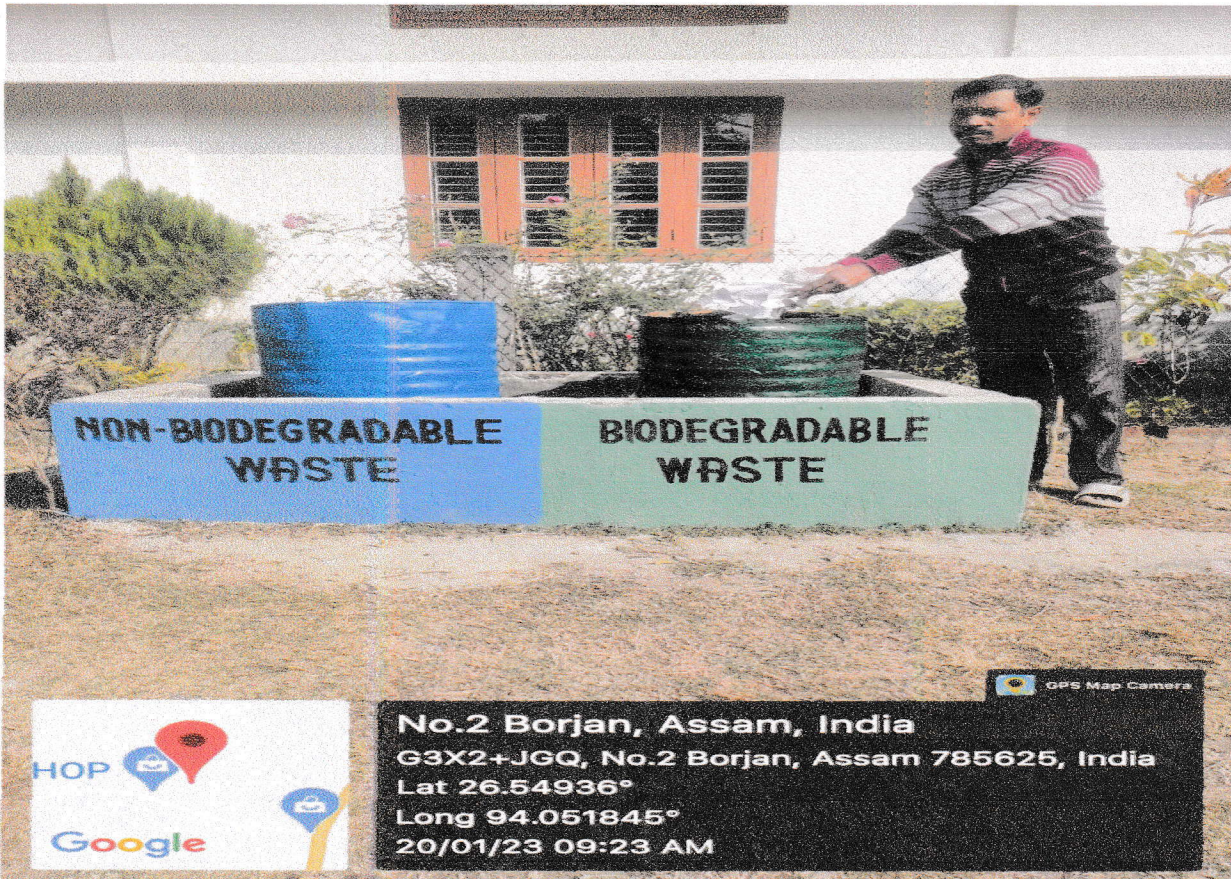


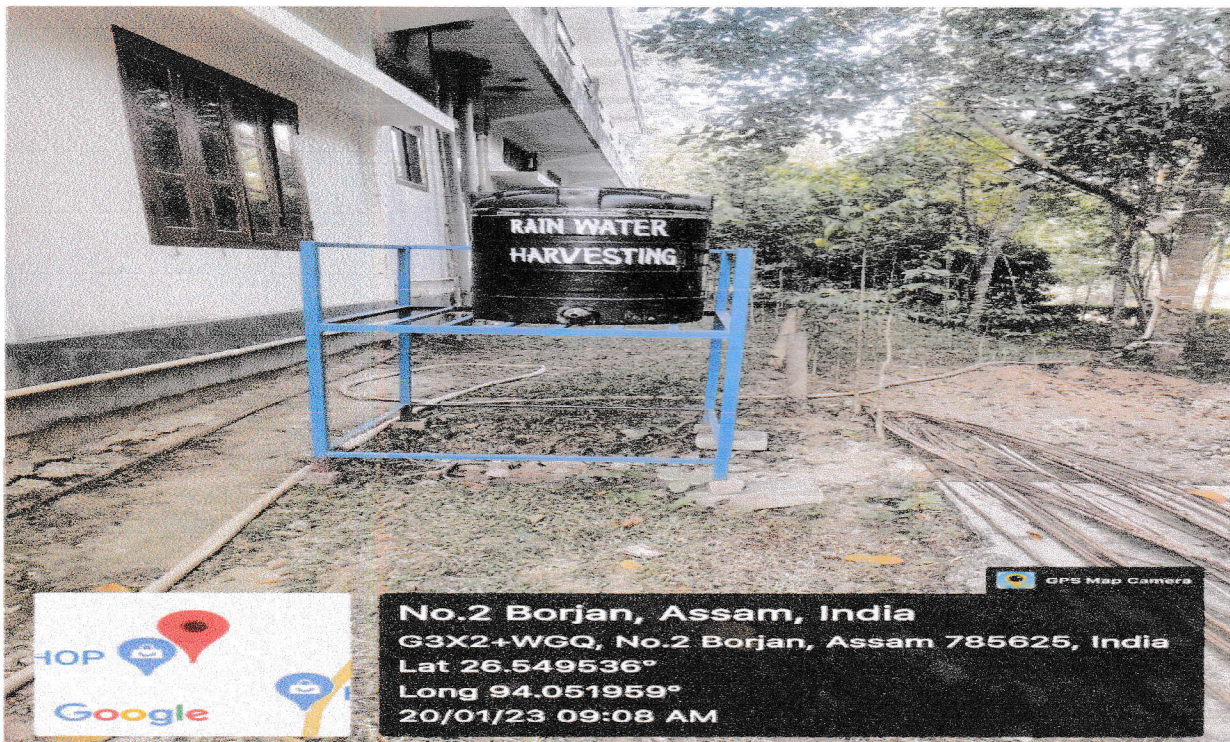
MAI-KOKAI



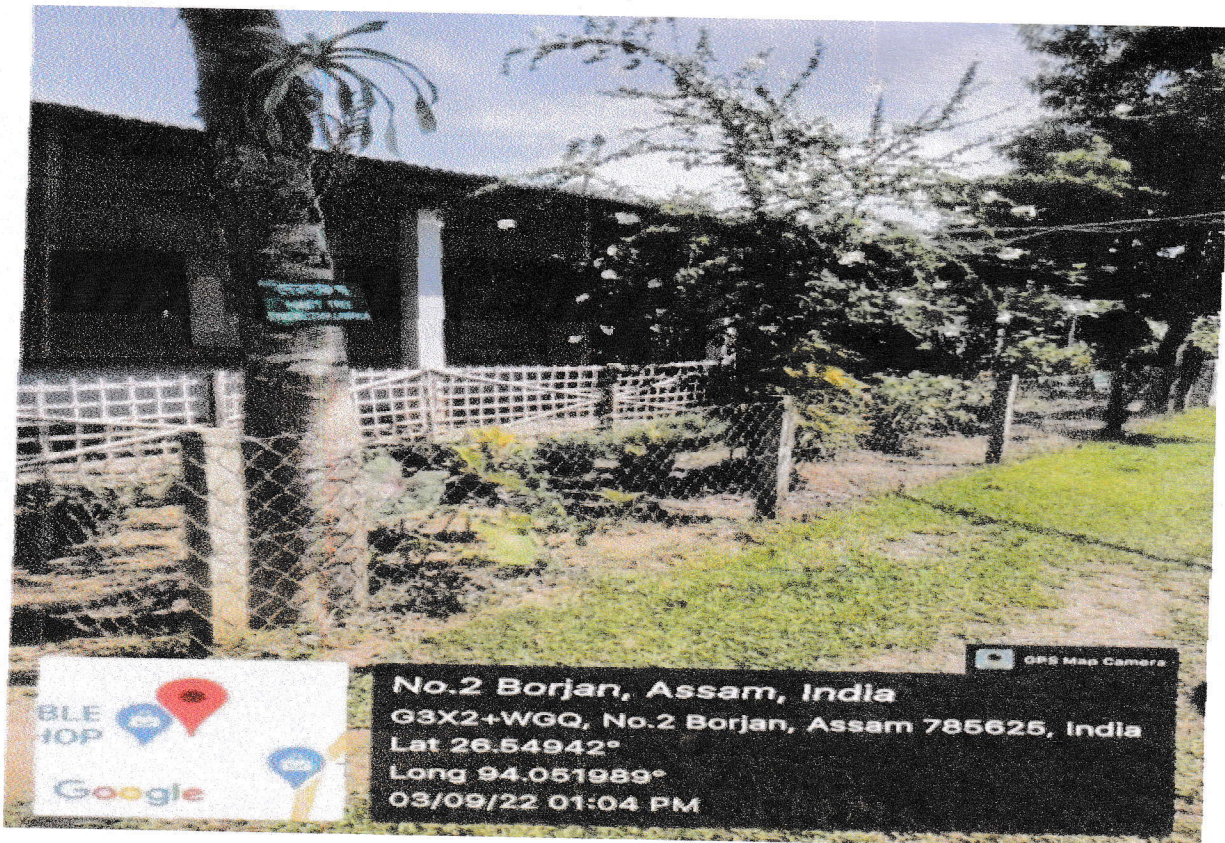


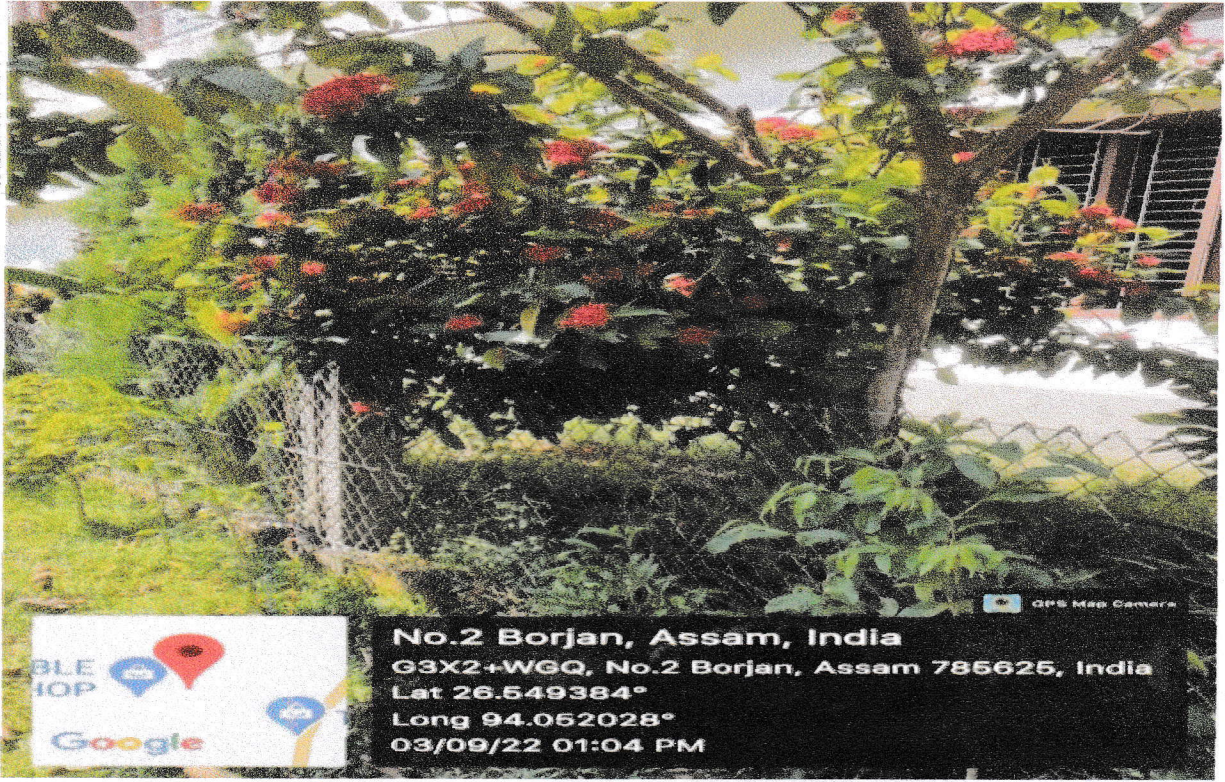
SACHI PLANTATION











(FLOWER GARDENING)





Table 5: A Summary of Faunal Diversity of Kamarbandha College.

The term biodiversity refers to variety of life on Earth at all its levels, from genes to ecosystem. The biodiversity of Assam makes it a biological hotspot with many rare and endemic plant and animal species. Kaziranga National Park, the home to one horned Rhino, is situated in Golaghat district, which makes the district one of the most biodiversity areas of the state. Kamarbandha College is situated approximately 100 km away from Kaziranga. The campus of this College is also full of diversity in terms of flora and fauna.








The faunal diversity of the College campus is represented below:




BIRDS

Sl No.	Name	Scientific name	Picture
1	Common Crow	<i>Corvus corax</i>	
2	Common myna	<i>Acridotheres tristis</i>	
3	House sparrow	<i>Passor domesticus</i>	
4	Parrot	<i>Psittacula krameri</i>	
5	Dove (Kopou)	<i>Spilopelia chinensis</i>	
6	Crimson sunbird (Moupiya Sorai)	<i>Aethopyga siparaja</i>	




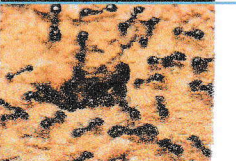
7	White-breasted Waterhen (Dauk)	<i>Amaurornis phoenicurus</i>	
8	Koel (Kuli)	<i>Eudynamis scolopaceus</i>	

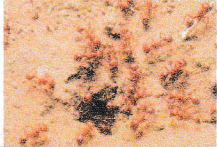









ANIMALS

Sl. No	Name	Scientific name	Picture
1	Cow	<i>Bos indicus</i>	
2	Pig	<i>Sus scrofa cristatus</i>	
3	Dog	<i>Canis lupus familiaris</i>	
4	Goat	<i>Capra aegagrus hircus</i>	
5	Monkey	<i>Macaca mulatta</i>	
6	Squirrel	<i>Sciurus carolinensis</i>	
7	Snake	----	

8	Common garden lizard	<i>Calotes versicolor</i>	
9	House Lizard	<i>Hemidactylus frenatus</i>	
10	Frog	<i>Duttaphrynus melanostictus</i>	
11	Mouse	<i>Mus musculus</i>	
12	Garden snail	<i>Cornu aspersum</i>	
13	Cat	<i>Felia catus</i>	

INSECTS

Sl. No	Name	Scientific name	Picture
1	Dragonfly	<i>Anax spp.</i>	
2	Butterfly		
3	Browntail moth caterpillars (Bisa)	<i>Euproctis chrysorrhea</i>	
4	Black ant	<i>Solenopsis spp.</i>	

5	Red ant (Amroli)	<i>Oecophyla smaragdina</i>	
6	Common house Spider	<i>Paasteatoda tepidariprum</i>	
7	Red spined Millipede	<i>Xenobolus carnifex</i>	
8	Kumjelekua	<i>Limax flavus</i>	
9	Termites	<i>Coptotermes formosanus</i>	
10	Honey bee	<i>Apis indica</i>	
11	Borol	<i>Polistes versicolor</i>	
12	Leech	<i>Hirudinaris granulosa</i>	
13	Earthworm	<i>Lumbricus terrestris</i>	
14	Foring	<i>Heiroglyphus banian</i>	

Water Use and Conservation of Kamarbandha College:

The College has to depend on the ground water for all its needs. The college has one (1) number of water reservoirs which can store a total amount of 10000 liters of water. This storage water is used for drinking purpose, toilets gardening use and agro activities. There is a pond within the college campus and the water of the pond is also a source of water for college ,but this water is only used for the purpose of gardening and other activities of college likewise water used for the vermicompost project. There is two water purifier installed in the college for safe and pure drinking water. One is installed in Girls common Room and another is installed in Library. The waste water from the purifier is used for gardening. Since college has depended on ground water for it all needs hence water conservation measures are essential for efficient use of water. The following measures are taken by college authority for water conservation.



Rain Water Harvesting System of College

The rain water harvesting system is installed in college. The rain water coming from the roof tops are collected in a tank of 500 hundred litres capacity and used for gardening and other activities of the College.

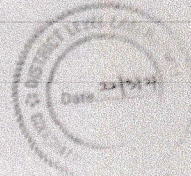
Drinking Water analysis Report of Kamarbandha College

**DISTRICT LEVEL LABORATORY (PHE) GOLAGHAT DIVISION
GOLAGHAT, ASSAM**

Receipt No. I 135

Water Analysis Report Of Kamarbandha College

01. Name of Collector : 22/9/21
 02. Date of Collection : 22/9/21
 03. Date of Despatch :
 04. Date of Testing : 22/9/21
 05. Type of Source : DW C.
 06. Type of Analysis : Physical Chemical Bacteriological



TEST	PERMISSIBLE LIMIT	RESULT
01. Turbidity	1.0 - 5.0	<u>Nil</u>
02. Total Dissolved Solid	500 - 2000	<u>-</u>
03. PH Value	6.5 - 8.5	<u>6.6</u>
04. Iron	0.3 - 1.0	<u>0.35 Ppm</u>
05. Hardness	200 - 600	<u>200</u>
06. Calcium	75 - 200	<u>-</u>
07. Magnesium	30 - 100	<u>-</u>
08. Alkalinity	200 - 600	<u>240</u>
09. Chloride	250 - 1000	<u>-</u>
10. Nitrate	45 (No relaxation)	<u>-</u>
11. Sulphate	200 - 400	<u>-</u>
12. Residual Chlorine	0.2 - 1.0	<u>-</u>
13. Arsenic	0.01 (No relaxation)	<u>-</u>
14. Fluoride	1.0 - 1.5	<u>ND</u>
15. BACTERIOLOGICAL		

RESULT	COLIFORM	ECOLE	RESULT
a) Excellent	No Coliforms/100 ml	Nil	<u>-</u>
b) Satisfactory	1-2 Coliforms/100 ml	Nil	<u>-</u>
c) Suspicious	3-10 Coliforms/100 ml	Nil	<u>-</u>
d) Unsatisfactory	above 10 coliforms/100 ml	Nil	<u>-</u>

ADVIC: Report as per as Sample Received.

[Signature]
Signature
Asst. Chemist

[Signature]
Signature
In-charge, Laboratory

2023/2/6 18:03

Noise level in outside and inside of Kamarbandha College

The noise level measurements were carried out within the college campus as well as outside. The College is surrounded by residential areas and commercial properties with weekly bazaar and shops. The noise level was recorded from the road side classrooms, offices, commercial business centre of the road, located at the front gate areas of Kamarbandha College at different selected sites of the College, noise level had been measured. At each spot measurement were taken for 60 seconds during day time (12 to 4 pm) and note down the measurements.

Methods for Measuring Noise Level

For measuring noise level within and outside of the college campus using noise measuring app, Noise Tube (Version: 2.0, 2).Build date: 17-04-2022.Noise tube is a participatory sensing project started in 2008 at the sony computer science laboratory Paris in collaboration with the Vrije Universities Brussel. Since 2010 the project is maintained by the software languages lab

Results of the experiments in both outside and inside of areas of College:

Table 6: Noise level in different areas of Kamarbandha College campus (as on between 12 pm to 4 pm)

SI No	Area	Measurements (Duration in sec)	Minimum (dBA)	Maximum (dBA)	Average (dBA)
1	Front Gate	60	40	79	64
2	Classroom area	60	39	83	39
3	Administrative Building	60	40	83	62
4	Library	60	39	83	62
5	Canteen	60	39	83	65

Also, the college authority takes initiative for reducing noise and air pollution within the campus like 'No Vehicle Day' in every third Saturday of a month to promote the culture of use of cycles or public vehicles.

Waste Management System of Kamarbandha College:

Waste management is the managing of waste by disposal and recycling of it. Waste management needs proper techniques and system. Proper waste management is very important for maintaining healthy environment within the college campus. Therefore Kamarbandha College has issued some rules, regulations and also arranging dustbins for biodegradable and non- biodegradable waste of the College. E-waste of the college, are well collected and selling it to CABARIWALLA. The college community always encourages the students for using dustbins and asking them to maintain the College campus clean and healthy.



Campus Cleanliness of Kamarbandha College:

Maintaining a clean college environment sets a good example to students. It encourages learners to take pride in their college, which makes them less likely to drop litter and as such they will potentially make a bigger effort to protect their environment.

Students Unions, NSS & NCC Volunteers participate in creating awareness among the students in our College, informing them about the importance of cleanliness. The students take initiatives to clean the college premise at regular intervals. Students are always encouraged by the teaching community, including the principal, to maintain a clean environment which is necessary for their well-being and healthy life.

Grade IV Staff of our college clean the campus regularly. The solid wastes are isolated and deposited in the dustbin and also for land filling and liquid wastes generated in the waste areas (Bathrooms, Toilets), Canteen pass through drains to the tea gardens on the campus. The College regularly organizes awareness programme on cleanliness and Swacha Bharat mission as carried on. Limited and reasonable uses of recyclable plastics are allowed on the campus.



Best Practices of Kamarbandha College:

Kamarbandha College is making efforts to create a green campus and promotes sustainable and eco- friendly practices. Our College campus abounds in different varieties of trees, shrubs and herbs, many with medical values, colorful birds and animals. Growing plants in various occasions in practiced on the campus. We have created herbal garden with medicinal plants for conservation of bio-diversity. We have been observing every third Saturday as - **“No Vehicle Day”** - a measure to keep the air fresh and clean water, for the last three years. We have a waste management system for the disposal of different types of waste. The college provides drinking water facilities to all .We are introducing rain water harvesting on the campus.



Green Audit Team, Kamarbandha College

Mr. Debajyoti Goswami, Asst. Prof. & Co-ordinator, IQAC

Mr. Biren Nath, Asst. Prof., Dept. of Sociology

Mr. Nitu Boruah, Asst. Prof., Dept. of Political Science.

Mrs. Bornali Boruah, Asst. Prof., Dept. of English

Mrs. Malajyoti Gogoi, Asst. Prof., Dept. of English


Mrs. Rimjim Bora Boruah, Asst. Prof., Dept. of Assamese

Mrs. Archana Borah Pathak , Asst. Prof., Dept. of Education

Mrs. Banashree Boruah, Asst. Prof., Dept. of Education

Mrs. Sewali Deka, Asst. Prof., Dept. of Assamese




Principal
Kamarbandha College
PO K.B. Ali, Golaghat


Coordinator, IQAC
Kamarbandha College