GREEN AUDIT REPORT

(2022-23)

NABAJYOTI COLLEGE, KALGACHIA

Coordinator
IQAC
Nabajyoti College, Kalgachia

Principal
Nabajyoti College, Kalgachia
Date : 04/01/24

Certificate

This is to certify that Nabajyoti College, Kalgachia, Assam has conducted a detailed "Green Audit" for its campus during the academic year 2022-2023 to assess the green initiatives adopted and implemented in the college campus. Assessment of water, air, noise quality, assessment of environmental quality, solid waste management, etc was conducted during the Audit. The Green Audit also aimed to assess the impact of green initiatives on the maintenance of an eco-friendly campus. In my opinion and to the best of my knowledge said green audit gives a true and fair view in conformity with environmental auditing principles accepted in India.

Date: 30th December 2023

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The Audit Team, 2022-23

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1	Dr. Shahjahan Ali Ahmed Principal	Chairman
2	Samsul Haque HoD, Department of Economic	IQAC Coordinator
3	Sayed Quayum Kabir Ahmed Associate Professor, Department of Chemistry	Convenor
4	Subrat Kakati HoD, Department of Botany	Joint Convenor
5	Pritam Dey Sarkar Assistant Professor, Department of Zoology	Member
6	Nafisa Younis Assistant Professor, Department of History	Member
7	Abu Sayad Rofi Assistant Professor, Department of English	Member
8	Chandasmita Deka Assistant Professor, Department of Economics	Member

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Preface

The analysis of the environmental status and performance of a specific area at a particular time is known as Green Auditing. Green audit proves to be a great help in the field of improving the condition of the environment by confirming whether the tasks are performed following relevant rules and regulations. To preserve and improve the environment of the campus, the educational institution adopts various methods and means to solve the issues regarding the environment. By saving energy, recycling waste, and preserving water; the institution is looking forward to make the campus eco-friendly. This work is an official examination of the effects that Nabajyoti College, Kalgachia has on its environment by auditing different objectives and policies to evaluate the actual scenario of the campus.

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Acknowledgement

Nabajyoti College, Kalgachia has conducted a green audit that aims to look after a healthy environment on the campus. It also focuses on the growth of environmental sustainability of the college premises. We would like to express our gratitude to the principal and all the members of the audit team for their regular guidance, suggestions, recommendations and work. We would also like to thank the co-ordinator and all the members of the IQAC for providing the necessary details about the campus and also for their help during the preparation of the report.

With regards
Green Audit Team

1. Syed Quayum Kabir Ahmed
2. Subrat Kakati
3. Pritam Dey Sarkar
4. Nafisa Yasmin
5. Abu Sayad Rofi
6. Chandasmita Deka

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CHAPTER: 1

1.1 INTRODUCTION:

Professor Peter Wood used the term environmental accounting for the first time in the year 1980. The new branch of environmental accounting or green accounting aims to deliver a systematic assessment of the environment and its well-being. Environmental accounting clearly denotes the modification of the System of National Accounts to include the use and depilation of natural resources over some time.

The systematic identification, quantification, recording, reporting, and analysis of components of environmental diversity is known as Green Audit. Green audit primarily aims to assess the environmental exercises of the college premises along with the adjoining areas of the college that impact the environment and atmosphere of the college.

Development in scientific and technological advancement, increase in industry, urbanization, growth in agricultural technologies, and deforestation at regional and global levels led the way for several ecological and environmental degradations. To prevent this degradation of the environment it has become important to adopt green campuses for the educational institutions with the greater purpose of sustainable development and to reduce the amount of atmospheric CO_2(Carbon dioxide) from the environment. Therefore, a Green Audit is assigned to Criteria 7 of NAAC, New Delhi (National Assessment and Accreditation Council) and all the Higher Educational Institutions must submit an annual Green Audit Report. At the same time, it has become a part of Corporate Social Responsibility for the Higher Educational Institutions to ensure their contribution towards minimizing global warming.

1.2 OBJECTIVES:

The primary objective of green audit is to elevate the college campus through environmental management, preservation, and conservation of the related natural resources. The audit aims to apply environmental regulations, policies, and standards to identify, quantify, describe, and prioritize the frameworks of environmental sustainability.

The notable objectives of Green Audit are:

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- To introduce the students about the importance of nature and make them aware of real concerns of the environment and its sustainability.
- To examine the ongoing sustainability practices regarding the use of water, energy, waste recycle etc.
- To ensure the security of environment and to minimize the threats to environment by analyzing the patterns and policies of the campus.

1.3 ABOUT THE COLLEGE:

Nabajyoti College has been playing the pivotal role in disseminating knowledge and imparting higher education among the poor students of greater Kalgachia area since its inception (1971). The foundation stone was laid by Late Fakaruddin Ali Ahmed, the then Honourable President of India. The authority of the College has always been patronizing to enhance the quality of education with an objective to build skill and capacity among the students for ensuring their employment in the fast-changing scenario of the country. The College is also providing training to the students for building good health and morality through NSS, NCC, BS & G regularly. The NAAC of India has adjudged the quality of the College and accredited **Grade B** (Score: 2.73) the year 2016. The college is expanded over an area of 17.19 Acre amidst green agricultural lands. Starting with 35 students in 1971, the College has enrolled about 2000 students at present. The College has also been conducting "Distance Education" through study Centres at Undergraduate and postgraduate level under Krishna Kanta Handique State Open University and IDOL, GU along with Computer Education and emerging as the premier institution of higher education in the area. The faculty strength has increased manifold, thereby producing more and more graduates in Arts over the past years. In 1984, The Government of Assam introduced the Science stream in the College, thereby increasing the faculty strength to 13 departments.

1.4 VISION AND MISSION:

Our vision says, the college is trying to introduce skill-based, job-oriented and ethical education to optimise the use of human resources along with e-learning, distance learning, research works, collaborating works etc in order to increase the quality of higher education among agro-based rural people.

As gateway to achieve the visionary goals, our mission targets

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- To produce outstanding scholars
- To develop profession of teaching through research and training and use of technology
- To analyse issues and problems
- To adopt appropriate plan and policies
- To sustain the quality

1.5 NEED OF GREEN AUDIT:

A green audit in college serves as a comprehensive evaluation of the institution's environmental impact. It involves scrutinizing energy consumption, waste management systems, water usage, and overall eco-friendly practices. By conducting such audits, colleges can pinpoint areas of inefficiency and implement strategies to reduce their carbon footprint. These audits often lead to the development of sustainable policies and practices, such as incorporating renewable energy sources, enhancing recycling programs, and encouraging environmentally conscious behaviours among students and staff. In addition to the ecological benefits, green audits can also result in cost savings through improved resource efficiency and conservation measures. Furthermore, colleges that prioritize sustainability through green audits set an example for students, fostering a culture of environmental responsibility and instilling lifelong habits that extend beyond campus life. Ultimately, a green audit in a college environment contributes to the broader global effort to address environmental challenges and promote a more sustainable way of living.

1.6 LAND FORM CHARACTERISTICS OF THE CAMPUS:

Nabajyoti College (26˚35'N – 90˚86'E) is located in the Kalgachia area of Barpeta District, Assam, India. The college is surrounded by agricultural lands. The elevated campus's walkway keeps the monsoon water away and drains excess water into the college pond, keeping the campus clean and dry.

1.7 CLIMATIC CHARACTERISTICS:

The area enjoys tropical monsoon climate with a hot and wet summer and cool and dry winter. The average temperature ranges from 24˚-35˚C in summer and 12˚-24˚C in the winter.

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The average amount of annual rainfall in the area is 82.05 mm. The region received the highest rainfall during the months of May, June, and July.

CHAPTER: 2

2.1 METHOLOGY:

Methodology comprises of a system of principles and procedures for carrying out a particular study or research. It involves theoretical analysis of the concerned discipline and carefully designing the methods, rules and postulates to be employed for achieving the desired goal. The methodology outlines the path in which the study is to be undertaken. The following methodologies were adopted for the current investigation.

2.2 Survey by Questionnaires:

Data for Green Audit was collected by Survey method by preparing questionnaires. Questionnaires for Green Audit are based on the guidelines, rules, acts and formats prepared by the Ministry of Environment and Forest (MoEF), New Delhi, Central Pollution Control Board (CPCB), Government of India.

2.3 Site inspection and monitoring:

The college campus is comprised of various sections like the Administrative Building, Boys & Girls Hostels, Gardens, Library, Canteen, Auditorium, Playground, pond, etc. All these amenities have different infrastructure as per their requirement and all these parts of the Campus were checked and verified in their present condition by the members of Green Audit.

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CHAPTER: 3

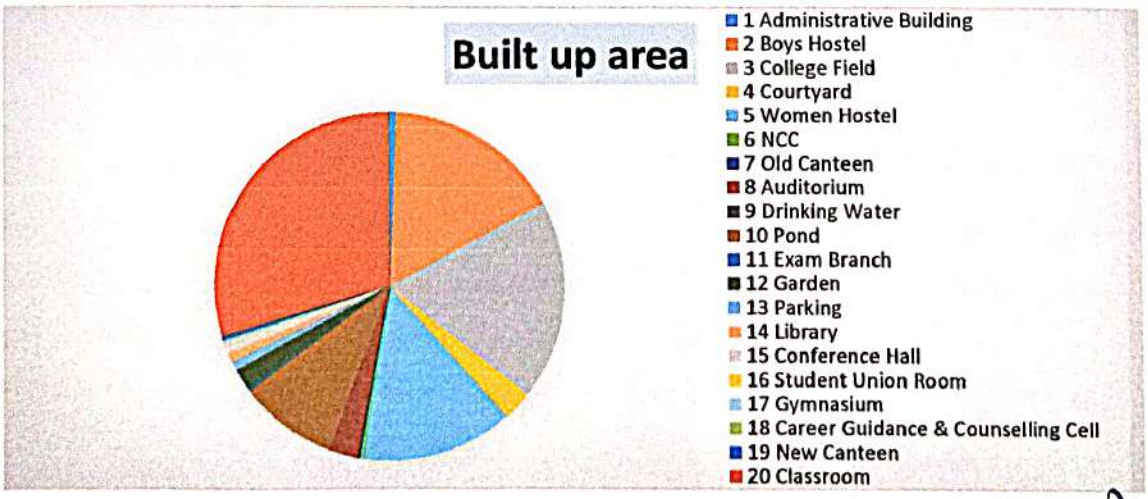
GREEN AUDIT ANALYSIS:

3.1 Land use data analysis:

Analyzing the land use pattern, it was found that 221700 sq. feet area is under built up category out of a total area of 748797 sq. feet. Land cover of the different parts of the college is analyzed and the data is given below.

Table -1: Shows the category wise land use data of Nabajyoti College Campus

Sl. No.	Category of land use (build up area)	Area in Square Feet
1	Administrative Building	1645
2	Boys Hostel	36305.6
3	College Field	41140
4	Courtyard	6048
5	Women Hostel	31237.5
6	NCC	649.25
7	Old Canteen	570
8	Auditorium	5723
9	Drinking Water	135.3
10	Pond	20000
11	Exam Branch	744
12	Garden	4268
13	Parking	1885
14	Library	2052
15	Conference Hall	1323
16	Student Union Room	270
17	Gymnasium	729
18	Career Guidance & Counselling Cell	270
19	New Canteen	918.6
20	Classroom	65786.75
21	Open Space	527097
Total		**748797**



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3.2 FLORAL DIVERSITY OF THE CAMPUS:

Plants being cosmopolitan in distribution are critical resources for other organisms and the environment in a range of ways. Primarily, they absorb CO_2, release O_2, in turn, act as producers or primary consumers for wildlife and provide habitat for numerous organisms. They regulate the water cycle and maintain the ratio of CO_2/ O_2. The radiation from the sun sustains the greenhouse mechanisms. However, due to anthropogenic activities, there is a surge in global climate change. Plants by their intrinsic machinery, help in a proper balance of greenhouse gases and amelioration of climate change.

The college campus is situated on the west side of Barpeta City, under the Barpeta District in the state of Assam, India. The coordinates of the College are 26.36^0 N and 90.87^0 E. The campus is highly rich in floral diversity, which adds to the overall aesthetic appeal of the university. The plants are heterogeneous in composition and age and are planted across the whole college campus. The plants are planted over decades and via various plantation programs with the help of students, faculty members, and local people. The campus entrance is followed by many flowering plants that attract many insect pollinators while the other parts are covered by old, large trees with large canopies. In the southern part, a pond is enriched with numerous hydrophytes.

The flora within the campus of Nabajyoti College, Kalgachia affirmed the species richness and diversity of different forms of plants, mainly there are 51 species of trees, 14 species of shrubs, 51 species of herbs, 2 species of climbers and 3 species of aquatic plants. The identification was conducted by the Department of Botany, Nabajyoti College, Kalgachia.

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Table 2: List of plants with the corresponding scientific and local names.

Trees

Serial No.	Scientific Name	English Name	Local Name (Assamese)	Family	No. of Individuals
1.	*Spondias mombin*	Hog Plum	Amora	Anacardiaceae	2
2.	*Elaeocarpus floribundus*	Indian Olive	Jolfai	Elaeocarpaceae	10
3.	*Pyrus communis*	Pear	Naspoti	Rosaceae	1
4.	*Averrhoa carambola*	Star Fruit	Kordoi	Oxalidaceae	10
5.	*Psidium guajava*	Guava	Modhuriaam	Myrtaceae	4
6.	*Baccaurea sapida*	Ramleh	Leteku	Phyllanthaceae	2
7.	*Swietenia mahagoni*	Mahogony	Mahogony	Mcliaccac	33
8.	*Terminalia bellirica*	Bedda Nut Tree	Bhomora	Combretaceae	2
9.	*Millettia pinnata*	Indian Beech	Koros	Fabaceae	11
10.	*Polyalthia longifolia*	Mast Tree	Debodaru	Annonaceae	75
11.	*Azadirachta indica*	Indian Lily	Neem	Meliaceae	9
12.	*Michellia baillonii*	Indian Mart	Titasopa	Magnoliaceae	7
13.	*Albizia procera*	White Siris	Koroi	Fabaceae	2
14.	*Livistona jenkinsiana*	Assam Fan Palm	Tokoi	Arecaceae	1
15.	*Artocarpus heterophyllus*	Jack Fruit	Kothal	Moraceae	3
16.	*Caesalpinia pulcherrima*	Dwarf Gold Mohur	Radhasura	Fabaceae	1

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17.	*Tetrameles nudiflora*	False Nhemp Tree	Bheleu	Tetramelaceae	2
18.	*Tamarindus indica*	Tamarind	Teteli	Fabaceae	2
19.	*Neolamarckia cadamba*	Burflower Tree	Kodom	Rubiaceae	1
20.	*Nyctanthes arbor-tristis*	Night Jasmine	Hewali	Oleaceae	1
21.	*Mesua assamica*	Ceylon Ironwood	Nahor	Calophyllaceae	4
22.	*Terminalia cebula*	Black Myrobalan	Hilikha	Combretaceae	2
23.	*Dillenia indica*	Elephant Apple	Ou tenga	Dilleniaceae	2
24.	*Ficus benghalensis*	Banyan Tree	Botgos	Moraceae	1
25.	*Terminalia arjuna*	Arjuna Tree	Arjun gos	Combretaceae	4
26.	*Nephelium litchi*	Litchi	Lisu gos	Sapindoideae	2
27.	*Tectona grandis*	Teak	Segun	Verbenaceae	6
28.	*Albizzia lebbeck*	Frywood	Siris gos	Fabaceae	8
29	*Carica papaya*	Papaya	Omita	Caricaceae	5
30.	*Ficus religiosa*	Peepal Tree	Ahot gos	Moraceae	1
31.	*Jatropha curcus*	Bhot Era	Bhotora	Euphorbiaceae	1
32.	*Dypsis lutescens*	Erica Palm	Mumaitamul	Arecaceae	13
33.	*Murraya koenigii*	Curry Leaf Tree	Norosingho	Rutaceae	1
34.	*Phyllanthus emblica*	Indian Gooseberry	Amlokhi	Euphorbiaceae	11
35.	*Mangifera indica*	Mango Tree	Aam gos	Anacardiaceae	5
36.	*Moringa oleifera*	Drum Stick Tree	Sojina gos	Moringaceae	3

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37.	*Citrus aurantifolia*	Lemon	Nemu	Rutaceae	11
38.	*Areca catechu*	Betel Nut	Tamul gos	Arecaceae	15
39.	*Mimusops elengi*	Bullet Wood	Bokul	Sapotaceae	9
40.	*Cocos nucifera*	Coconut Tree	Narikol gos	Arecaceae	2
41.	*Gmelina arborea*	Gamhar White Tree	Gomari	Verbanaceae	2
42.	*Phoenix dactylifera*	Dat Palm	Khejur	Arecaceae	1
43.	*Bombax ceiba*	Red Silk Cotton Tree	Himolu gos	Malvaceae	2
45.	*Syzygium cumini*	Black Plum	Jam gos	Myrtaceae	4
46.	*Delonix regia*	Gold Mohur	Krishno chura	Fabaceae	6
47.	*Eucalyptus globulus*	Tasmanium Blue Gum	Eucalyptus	Myrtaceae	3
48.	*Bambusa tulda*	Bamboo	Bah gos	Poaceae	4
49.	*Phoebe hainesiana*	Tree King	Bonshum	Lauraceae	2
50.	*Ficus benjamina*	Weeping Fig	Gular	Moraceae	4
51.	*Citrus sinenis*	Orange	Komola	Rutaceae	3

Shrubs

Serial No.	Scientific Name	English Name	Local Name (Assamese)	Family
1.	*Thevetia peruviana*	Yellow Oleander	Karabi	Apocynaceae
2.	*Gardenia jasminoides*	Gardenia	Togor	Rubiaceae
3.	*Hibiscus rosa-sinensis*	China Rose	Jobaful	Malvaceae
4.	*Jasminum laurifolium*	Angel Wing Jasmine	Gutimali	Oleaceae
5.	*Jasminum multiflorum*	Star Jasmine	Khorikajai	Oleaceae
6.	*Datura stramonium*	Throne Apple	Datura	Solanaceae

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7.	*Rauwolfia serpentina*	Indian Snake Root	Sorpogondha	Apocynaceae
8.	*Clerodendrum glandulosum*	Glorybower	Nefafu	Lamiaceae
9.	*Thuja cupressus*	Eastern White Cedar	Thuja	Cupressaceae
10.	*Tagetes erecta*	Mexican Marigold	Gendhaimaloti	Asteraceae
11.	*Phyllanthus nivosus*	Stunning Snow Bush	-	Phyllanthaceae
12.	*Codiaeum variegatum*	Variegated Laurel	-	Euphorbiaceae
13.	*Syngonium podophyllum*	Arrowhead Vine	Ghorua kosu	Araceae
14.	*Archontophoenix purpurea*	Palm	Horu bet	Arecaceae

Herbs

Serial No.	Scientific Name	English Name	Local Name (Assamese)	Family
1.	*Euphorbia hirta*	Asthma Plant	Gakhiroti bon	Euphorbiaceae
2.	*Leucas aspera*	Thumbai	Duron	Lamiaceae
3.	*Phyla nodiflora*	Frog Fruit	Kukuri bon	Verbenaceae
4.	*Oxalis corniculata*	Indian Sorrel	Tengesi	Oxalidaceae
5.	*Centella asiatica*	Indian Pennywort	Manimuni	Apiaceae
6.	*Vernonia amygdalina*	Daisy	Kukshim	Asteraceae
7.	*Vitex negundo*	Five-Leaved Chaste Tree	Posotia	Verbenaceae
8.	*Typhonium trilobatum L.*	Bengal Arum	-	Araceae

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9.	*Oplismenus burmannii* (Retz.) P. Beauv.	Burmann's Basket Grass	-	Poaceae
10.	*Digitaria ciliaris*	Summer Grass	-	Poaceae
11.	*Impatiens balsamina*	Garden Balsam	-	Balsaminaceae
12.	*Colocasia esculenta*	Elephant Ear	Kosu	Araceae
13.	*Bauhinia sp.*	Mountain Ebony	Kanchan	Fabaceae
14.	*Alternanthera philoxeroides*	Aligator Weed	-	Amaranthaceae
15.	*Pouzolzia zeylanica*	Graceful Pouzolzsbush	Borali Bokua	Urticaceae
16.	*Paspalum conjugatum*	Carabao Grass	Lokoshabon	Poaceae
17.	*Paspalum setaceum*	Millet Grass	-	Poaceae
18.	*Cyperus brevifolius*	*Purple Nutsedge*	-	Cyperaceae
19.	*Phyllanthus fraternus*	Gulf Leaf Flower	Bhui amlokhi	Phyllanthaceae
20.	*Eragrostis sp.*	Love Grass	-	Poaceae
21.	*Peperomia pellucida*	Shining Bush Plant	Pononoa	Piperaceae
22.	*Ammania baccifera*	Monarch Redstem	-	Lyrthaceae
23.	*Hydroeotyle javanica*	Java Pennywort	-	Araliaceae
24.	*Ageratum conyzoides*	Billygoat Weed	Gendali bon	Asteraceae
25.	*Typhonium trilobatum*	Bengal Arum	Sam ghas	Araceae
26.	*Oplismenus burmanni*	Burmman's Basket Grass	Bahpotiaban	Poaceae
27.	*Digitaria ciliaris*	Fingergrass	-	Poaceae
28.	*Impatiens balsamina*	Garden Balsam	Keruphul	Balsaminaceae
29.	*Colocasia esculenta*	Cocoyam	Kola kochu	Araceae
30.	*Alternanthera philoxeroides*	Aligator Weed	Pani Khutura	Amaranthaceae

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31.	*Pouzolzia zeylanica*	Pouzolz's Bush	Borali Bokua	Urticaceae
32.	*Paspalum conjugatum*	Carabao Grass	Kunja Ghah	Poaceae
33.	*Paspalum scrobiculatum*	Kodo Millet	Kodoa dhan	Poaceae
34.	*Cyperus brevifolius*	Green Kyllinga	Keyabon	Cyperaceae
35.	*Phyllanthus fraternus*	Gulf Leaf Flower	-	Phyllanthaceae
36.	*Eragrostis pellucida*	Indian Lovegrass	Pononoa	Poaceae
37.	*Peperomia pellucida*	Shiny Bush	Pononoa	Piperaceae
38.	*Ammannia baccifera*	Blistering Ammannia	Banjolokia	Lythraceae
39.	*Hydrocotyle javanica*	Java Pennywort	Horu manimuni	Araliaceae
40.	*Ageratum conyzoides*	White Weed	Gendai Bon	Asteraceae
41.	*Eleusine indica*	Indian Goose Grass	Bobosa bon	Poaceae
42.	*Cynodon dactylon*	Bermuda Grass	Dubari Bon	Poaceae
43.	*Lippia nodiflora*	Turkey Tangle Fogfruit	Kurkuri Bon	Verbenceae
44.	*Desmodium triflorum*	Threeflower Ticktrefoil	Kodalia	Fabaceae
45.	*Nastertium indicum*	Water Cress	-	Tropaeolaceae
46.	*Justicia sp.*	Warer Willow	Boga Bahok	Acanthaceae
47.	*Dentella repens*	Creeping Lickstoop	Bhoomi patful	Rubiaceae
48.	*Oldenlandia corymbosa*	Flat-Top Mille Graines	Bon Jaluk	Rubiaceae
49.	*Lindernia crustacea*	Malaysian False Pimpernel	-	Linderniaceae
50.	*Cyperus iria*	Rice Flat Sedge	-	Cyperaceae
51.	*Houttuynia cordata*	Fishwort	Mosondori	Saururaceae

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Pteridophytes

Serial No.	Scientific Name	English Name	Local Name (Assamese)	Family
1.	*Pteris* sp.	Chinese Brake Fern	-	Dryopteridaceae
2.	*Christella parasitica*	Parasitic maiden fern	-	Thelypteridaceae
3.	*Diplazium esculentum*	Fiddlehead Fern	-	Athyriaceae
4.	*Adiantum* sp.	Maiden hair fern	-	Pteridaceae
5.	*Selaginella* sp.	Tarry Spikemoss	-	Sellaginellaceae
6.	*Lygodium*	Japanese climbing fern	-	Lygodiaceae

Aquatic plants

Serial No.	Scientific Name	English Name	Local Name (Assamese)	Family
1.	*Eichhornia crassipes*	Water hyacinth	Pani meteka	Pontederiaceae
2.	*Ipomoea aquatica*	Kangkong	Kolmou	Convolvulaceae
3.	*Colocasia affinis*	Elephant ear	Kola kosu	Araceae

Climbers

Serial No.	Scientific Name	English Name	Local Name (Assamese)	Family
1.	*Mikania micrantha*	Bitter vine	Japani lota	Asteraceae
2.	*Momordica foetida*	Wild cucumber	Bhat kerela	Cucurbitaceae

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3.3 FAUNAL DIVERSITY OF THE CAMPUS:

Nabajyoti College is located in the south bank of the Beki River, inclusive of the Indo-Burma biodiversity hotspot region. The area falls under the sub-tropical climatic regions. The monsoon records heavy rainfall from the month of May to August, with the summer temperatures ranging between 25-32° C. This favourable climate supports a wide variety of flora and fauna, thus nourishing a rich biodiversity.

A recent study on faunal variety of the college campus is listed below. The identification of the commonly seen faunal species are conducted by Pritam Dey Sarkar, Assistant Professor, Dept. of Zoology, Nabajyoti College.

Table 3: List of organisms found in the campus

Diversity of Insects

Sl.No.	Family	Common name	Scientific Name
1	Araneidae	Garden cross spider	*Argiope pulchella*
2	Pholcidae	Cellar spiders	*Crossopriza lyoni*
3	Nymphalidae	Common tiger	*Danaus genutia*
4	Papilionidae	Chequered swallowtail	*Papilio demoleus*
5	Pieridae	Cabbage butterfly	*Pieris rapae*
6	Thaumetopoiedae	Processionary moth	*Thaumetopoea processionea*
7	Apidae	Honey bee	*Apis indica*
8	Vespidae	Mud daubers	*Sceliphron caementarium*
9	Vespidae	Paper wasp	*Polistes olivaceus*
10	Vespidae	Hornet	*Vespa affinis*
11	Gryllotalpidae	Mole cricket	*Gryllotalpa brachyptera*
12	Acrididae	Common green grasshopper	*Omocestus viridulus*
13	Coenagrionidae	Yellow waxtail	*Ceriagrion coromandelianum*
14	Libellulidae	Red groundli	*Brachythemis lacustris*

Diversity of Mollusca

Sl.No.	Family	Common name	Scientific Name
1	Helicidae	Garden snail	*Cornu aspersum*
2	Arionidae	Garden slug	*Arion hortensis*

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Diversity of Amphibians

Sl.No.	Family	Common name	Scientific Name
1	Microhylidae	Frog	*Duttaphrynus melanosticrus*
2	Microhylidae	Balloon frog	*Kaloula assamensis*

Diversity of Reptiles

Sl.No.	Family	Common name	Scientific Name
1	Colubridae	Checkered keelback	*Fowlea piscator*
2	Elapidae	Cobra	*Naja kaouthia*

Diversity of Annelida

Sl.No.	Family	Common name	Scientific Name
1	Lumbricidae	Earth worm	*Lumbricus terrestris*
2	Hirudinidae	Leech	*Hirudineria manillensis*

Diversity of Avian Fauna

Sl.No.	Family	Common name	Scientific Name
1.	Corvidae	Common raven	*Corvus corax*
2.	Passeridae	House sparrow	*Passer domesticus*
3.	Psittaculidae	Indian parakeet	*Psittacula krameria*
4.	Muscicapidae	Magpie robin	*Copsychus saularis*
5.	Alcedinidae	Kingfisher	*Alcedo atthis*
6.	Ardeidae	Egret	*Ardea alba*
7.	Columbidae	Common Dove	*Streptopelia orientalis*
8.	Sturnidae	Common myna	*Acridotheres tristis*

Diversity of Mammals

Sl.No.	Family	Common name	Scientific Name
1	Cercopithecidae	Indian rhesus macaque	*Macaca mulata*
2	Herpestidae	Indian Mongoose	*Herpestes edwardsi*
3	Canidae	Jackal	*Canis aureus*

Diversity of Ichthyofauna

Sl.No.	Family	Common name	Scientific Name
1	Cyprinidae	Common carp	*Cyprinus carpio*
2	Anabantidae	Climbing perch	*Anabas testudineus*
3	Bagridae	Catfish	*Mystus vittatus*
4	Clariidae	Walking catfish	*Clarius batracus*
5	Channidae	Snakehead	*Channa marulius*

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6	Cyprinidae	Barb	*Puntius chola*
7	Osphronemidae	Gourami	*Trichogaster fasciata*

3.4 WATER QUALITY ANALYSIS:

Testing water quality is crucial for ensuring safe drinking water, protecting the environment, complying with regulations, implementing effective treatment processes, raising public awareness, and detecting and addressing potential issues. Essentially, water quality testing ensures that the water is safe and complies with local and international water standards. Technology intervention can aid in the determination of quantity and amounts of contaminants in the water, together with water sampling procedures. To analyse the water quality of our college campus, samples have been collected from the tap. A series of experiments have been carried out by PHE, Barpeta.

Table 4: Water quality report of Nabajyoti College

Sl No	Name of Parameters	Result Sam.1	Unit	Desirable Limit
1	Turbidity	<0.5	NTU	1
2	pH	7.94	pH Unit	No Relaxation
3	Total Dissolve Solid	144	mg/l	2000
4	Chloride	5.67	mg/l	1000
5	Total Alkalinity	118	mg/l	600
6	Total Hardness	102	mg/l	600
7	Total Iron	0.29	mg/l	No Relaxation
8	Arsenic	BDL	mg/l	No Relaxation
9	Fluoride	0.05	mg/l	1.50
10	Bacteriological	Negative		

Sample-1: Collected from the Tap water of the campus
Note: BDL- Below Detection Limit

There are 131 water taps in the campus and water quality is good and safe for drinking.

3.5 NOISE LEVEL STUDY OF THE CAMPUS:

Noise is unwanted or excessive sound that can have pernicious effects on human health as well as environmental quality. According to WHO; 45dB is safe noise level for a city. For international standards a noise level up to 65dB is considered as tolerable. In this audit, we have studied the level of noise pollution in the campus of our college. Generally, the noise

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should be in the range of 40dB to 50 dB in and around an educational institute. To measure the noise levels, we used the noise measuring app **Noise Tube** (version: 2.9.3).

Table 5: Noise level measurement at Nabajyoti College

Sl. No.	Place of Experiment	Duration in seconds	Average (dB)
1	Administrative building	60	39
2	Boys' hostel	60	75
3	Girls' hostel	60	66
4	Canteen	60	64
5	Library	60	32
6	Main Gatc	60	45
7	Examination Branch	60	50
8	Girls' Common Room		60
9	IQAC	60	38

The results of the experiments are tabulated in table 8. From the data, it was found that the noise level in the college campus varies from one part to another part. Maximum noise level as found in the Boys Hostel.

3.6 Air Quality Study

The College campus is surrounded by crop fields and numerous trees. The air quality index of the campus depicts the air to be clean and with fewer pollutants. According to National Ambient Air Quality Standards, the annual permissible standard of SO_2 is 60 $\mu g/m^3$, NO_2 is 60 $\mu g/m^3$, PM_{10} is less than 60 $\mu g/m^3$ and $PM_{2.5}$ is less than 40 $\mu g/m^3$. PM_{10} is the suspended tiny particulate matter less than 10 micrometers in size. These particles significantly drop the visibility in the air, excess particles make the air hazy. SO_2 and NO_2 are ambient air pollutants, that impart various illnesses in humans.

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Table 6: Air quality index

Constituents	Air quality index (AQI), 2023
PM_{10} (µg/m^3)	40
$PM_{2.5}$(µg/m^3)	20
SO_2 (µg/m^3)	4.3
NO_2 (µg/m^3)	13
O_3 (µg/m^3)	14
Humidity	82%
Barometric Pressure	752 hPa
Wind speed	7 km/h

(*Source: Pollution Control Board, Assam and www.accuweather.com*)

After observing the air quality of the campus, the annual mean PM_{10} was found 40 µg/m^3 Micro g/m^3 and $PM_{2.5}$ was 20 µg/m^3 According to Ambient Air Quality Standards of air quality index the concentration of particulate matter is much below the recommendation levels. Thus, we can consider the campus is free from pollution and safe for the contenders.

3.7 SOLID WASTE AND SEWAGE MANAGEMENT OF NABAJYOTI COLLEGE:

According to the 1989 Basel Convention on the Transboundary Movement and Disposal of Hazardous Wastes, Act 2(1) states that "*Wastes are substances or articles intended to be disposed of or required to be disposed of by the state system rules*".

Solid waste refers to any non-liquid, non-gaseous waste material generated by human activities. This includes household waste, commercial waste, construction debris, and industrial waste. Effective solid waste management involves a combination of collection, transportation, disposal, recycling, and proper treatment.

Nabajyoti College is a modest college with around 2000 students enrolled. Every day, a minimal number of trash of various forms is generated on the college campus as a result of the continuous operations of the stakeholders. These wastes are classified as **Biodegradable** and **Non-biodegradable** based on criteria such as structure, texture, weight, composition, etc. Biodegradable waste is primarily made up of dried leaves, grasses, and paper. On the other hand, non-biodegradable waste includes concrete debris, stones, sand, plastics, materials, polythene bags, etc.

Based on a recent study, the average college campus generates 50kg of trash. Waste is collected in dustbins strategically placed throughout the campus. The biodegradable wastes, largely dried leaves and grasses, were eventually placed into the compost bin to make compost,

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which was later used in the botanical garden. Non-biodegradable waste, such as plastic water bottles (one-use), are given away to the local vendors who recycle them. The campus is free of waste-related environmental hazards due to regular waste sweeping.

The solid waste management system of the college campus is in good working order. The vegetative wastes are dumped in the compost plant by the college cleaner to make compost for the botanical garden and vermicompost.

3.8 E-WASTE MANAGEMENT:

There are different kinds of equipment and instruments running in administrative as well as educational departments in academic colleges. Computers, printers, scanners, and Xerox machines are mostly utilized for administrative and academic tasks such as teaching, learning, and evaluation. In college, we deal with electric materials, equipment, measuring instruments, different electric circuits wires, microprocessors, PCBs, electronic components (such as resistors, diodes, transistors, and so on), damaged instruments, hardware and peripherals of computer systems, lighting equipment (such as bulbs, tubes, and fans), and fans can be included as E-wastes. When such instruments or equipment get broken, the increased use of such materials generates E-waste.

Table 7: E-waste handled, treated, and disposed of at different sections of the college

Sl No	Section	E-waste handled (kg)	E-waste treated and disposed (kg)
1	Administrative Building	13.5	13.5
2	Examination Cell	7.2	7.2
3	IQAC	5.5	5.5

From the given data we observed that most of the E-waste was generated in the Administrative Building as different electronic instruments, computers, printers, etc were used frequently. Other departments generate minimal or negligible amounts of E-waste.

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CHAPTER 4: PHOTO EVIDENCE OF SOME GREEN PRACTICES

Pic: World Environment Day Celebration

Pic: Plantation on Environment Day

Pic: Sachha Bharat Abhiyan

Pic: Swachhata hi Sewa Campaign

Pic: Plantation by the new faculties

Pic: Amrit Green Campus

Pic: Awareness Program on Plastic Pollution

Pic: Cleansing drive by NSS Unit

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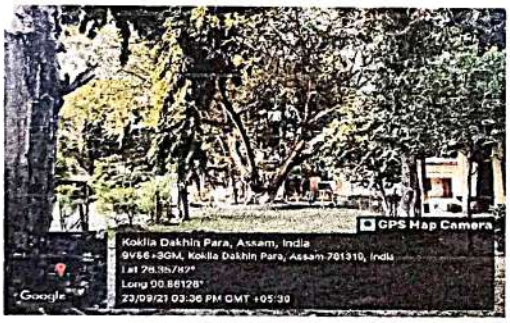
PHOTO EVIDENCE OF SOME GREEN PRACTICES

Pic: Vermicompost Unit

Pic: Botanical Garden

Pic: Disposal of waste material on dustbin

Pic: Medicinal Garden



Pic: Green Campus

Pic: Green Campus

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CHAPTER 5: CONCLUSION

"Green Auditing" is the process that gives a clear picture of the institution about its eco-friendliness and sustainability by determining, identifying, and examining its environment. Nabajyoti College, Kalgachia has taken its first step towards the audit in the session 2022-23 by considering the entire college campus. The total land area of Nabajyoti College, Kalgachia is 17.19 Acre which gives enrollment to 2000 students.

The process of Green Audit enlightened the college about its different spheres which are considered to be necessary for an educational institution like the quality of water, noise, and others. Noise-free environment is considered as one of the most important factors for imparting quality education and the audit came up with the observations that the college is situated at a distance from the market and highways which is considered to be noise noise-free area that is suitable for imparting quality education.

The air quality has been measured from the Pollution Control Board, Assam which gives a clear picture of a pollution-free environment which can be regarded as a basic necessity for a healthy environment. Another natural resource mostly used by the students of all the disciplines is water and the same has been checked by District Level Water Testing Laboratory, Barpeta, and found healthy to use and drink.

According to the observations made by the Audit team, the college campus seems to be healthy and hygienic for departing quality education.

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