

# GREEN AUDIT REPORT

Session: 2023-2024



Prepared By:

**INTERNAL QUALITY ASSURANCE CELL**

**KHAGARIJAN COLLEGE, NAGAON, ASSAM**

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## ACKNOWLEDGEMENTS

The Internal Audit Evaluation Committee offers due gratitude to the Principal of Khagarijan College for assigning this important task of Green Audit upon the selected group of individuals.

Special thanks are due to:

- ✿ Khagarijan College Management Committee
- ✿ Principal of the Khagarijan College – Dr. Ramesh Nath
- ✿ Vice-Principal of the Khagarijan College – Dr. Jonaram Nath
- ✿ IQAC Co-ordinator of Khagarijan College – Dr. Rameswar Kurmi
- ✿ External Green Audit Evaluator- Dr. Kumud Das & Dr. Afifa Kausar
- ✿ Faculty members, Khagarijan College
- ✿ Office Staff, Khagarijan College
- ✿ Students, Khagarijan College

We also offer due credit and heartfelt gratitude to all who helped us carry out this vital exercise and gave all necessary inputs. We are also thankful to all the members who were actively involved while collecting the data, conducting field measurements, tabulating the data, and analysing the same.

## BACKDROP

As per the directive of the National Assessment and Accreditation Council, New Delhi (NAAC), it has been given mandatory that an annual Green Audit has to be done in all Higher Education Institutes and a report of the same has to be submitted as a part of NAAC appraisal. This also seeks to fulfill the motive of the country's Higher Educational Institutions, engaging the young minds and faculty to deliberate and contribute towards the reduction of global warming.

Thereby, as a part of the preparation for the NAAC assessment, following the NAAC Circular on Green Audit; the College Authorities have ventured to conduct the same with an external inspection by **Dr. Kumud Das, Dept of Botany, Nagaon University, Nagaon, Assam** and **Dr. Afifa Kausar, Assistant Professor, Dept of Zoology, ADP College, Nagaon, Assam.**

This audit focuses on the entire campus premise, waste management, energy management, and water management; deliberating on strategies and initiatives taken up by the College Authorities. The structure and details of the appraisal are explained below.

## CONCEPT

The growth of technology as well as various scientific practices also brings to the forefront environmental concerns which take an important place in the juncture between advancement and environment-friendly stakes. Environmental audits or Green audits are often understood as a type of survey, assessment, or review of the environment, as well as health, safety, and other aspects related to it. With the growing green washing, it becomes important for a thorough survey to be done to

understand the intricate linkage of an institute with its surrounding green campus as well as the impact it has on the environment. Since there is no universal definition of Green Audit, the approach by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989) is taken as a standard to be adhered to.

## INTRODUCTION

Educational institutions serve as the cornerstone of a nation's success, yet their sustainability depends on maintaining a balanced ecological system. Consequently, environmental considerations have become integral to their functioning, leading to initiatives like greenwashing. To foster a sustainable campus ecosystem, institutions are urged to prioritize environmental preservation through measures such as rainwater harvesting, waste recycling, and energy conservation, often in collaboration with students.

Green auditing emerges as a vital tool for assessing an institution's environmental commitment and policies. It involves an official examination of the institution's impact on the environment, offering insights into its efforts regarding biodiversity, water and energy management, and overall environmental consciousness. This process also promotes health awareness, environmental ethics, and values among stakeholders.

Moreover, green auditing contributes to financial savings by reducing resource consumption and instills responsibility and leadership qualities in students who actively participate in creating a green campus. It serves as a platform for student, teacher, and staff engagement beyond academic or administrative activities. Additionally, institutions can use the audit findings to set examples for the community, fostering further community development and interaction for the betterment of the surrounding ecosystem. Thus, green auditing is crucial for the holistic growth of impactful institutions with sustainable goals.

## OVERVIEW OF KHAGARIJAN COLLEGE

Khagarijan College is one of the premier institutions of higher education in Nagaon district, Assam; a splendid temple of learning in sylvan surroundings. The College was established in September 1972. The word "Khagarijan" prestigiously displays the original name of Nagaon. The '*Putakollongjan*' flows behind the college, branching off from the river *Kollong*. '*Jan*' is a type of rivulet. '*Khagari*' refers to a type of long reed that grows along the banks of rivers. The two words '*Jan*' and '*Khagari*' joined together give the ancient name of Nagaon, '*Khagarijan*', which has been kept alive by this institution. By adopting the name, Khagarijan, the college has succeeded in rejuvenating the ancient

roots and heritage of Nagaon town. The college is affiliated with Gauhati University and registered under 2(F) and 12(B) of the University Grants Commission Act, 1956.

Since its inception, the college has been a beacon by guarding the cause of education and moral upliftment of the students. The pursuit of knowledge has all along been the avowed objective of the institution and it has justified its existence despite a lot of obstacles standing in its way. Apart from the dissemination of knowledge, the college aims to generate new values; relevant to the new generation of society.

The College, with a dedicated teaching and administrative staff, makes an assiduous effort to prepare the students for a good career; to face the stark realities of life, and help them build up character and personality to become responsible citizens of the country. It is a matter of pride that innumerable students have come to the college and left the campus after receiving their desired degrees, and they have made their marks in different levels of social, political, and academic life.

#### **VISION**

The vision of Khagarijan College is to spread and promote higher education for the sustainable development of the nation.

#### **MISSION**

To set a high standard of excellence in the preservation and creation of knowledge through Teaching-Learning and experiment and to serve as an effective instrument of development in the path of education, progress, and total awakening. Besides, we shall go always a little with a "BETTER EVERY DAY" spirit.

#### **The Khagarijan College endeavour to achieve its vision by:**

- High standard of excellence in the preservation and creation of knowledge through teaching-learning and experiment and to serve as an effective instrument of development in the path of educational, progress and total awakening.
- The college tries to impart education of the higher-standard through value based and holistic approach and integrity of traditional and innovative practices.
- To create a platform for exploring creative potential and nurturing the spirit of entrepreneurship and critical thinking.
- Try to inculcate a strong belief in hard work and motivating for gender equality, human rights and ecology in order to make the student's socially responsible citizens.
- To achieve the potentiality for integration of multidisciplinary and trans-disciplinary approach for fulfilment of Mission Statement.

## **AUDIT OBJECTIVES**

The objective of this Audit is to assess the institution with respect to its surrounding backdrop. This audit is initiated to figure out the environment-friendly initiatives by the institution, to mark the eco-friendly steps taken to maintain a suitable green campus; focusing on sustainable development in the environmental concern.

## **METHODOLOGY**

A team of two external experts visited the College on as per the appointment given by the Principal, Dr. Ramesh Nath, Khagarijan College, Nagaon. The expert team inspected all the geographical statuses and document the land use pattern, diversities of flora and fauna of the campus, the waste management system of the campus, the drinking water supply of the campus, and the environment-friendly activities of the college.

We, **Dr. Kumud Das, Assistant Professor, Dept of Botany, Nagaon University** and **Dr. Afifa Kausar, Assistant Professor, Dept of Botany, ADP College** evaluated the geographical statuses and suggested remedies based on the findings. On this basis, we, Dr. Kumud Das and Dr. Afifa Kausar have made the following observations: -

## **EXTERNAL EVALUATOR**

1. Dr. Kumud Das, Assistant Professor, Dept of Botany, Nagaon University
2. Dr. Afifa Kausar, Assistant Professor, Dept of Botany, ADP College

## **INSTITUTIONAL GREEN AUDIT COMMITTEE**

1. Principal: Dr. Ramesh Nath
2. Joint Convenor: Bichitra Pegu.
3. Joint Convenor: Dr. Gitirekha Bhuyan.
4. Member: Arman Khan, Secretary, Green Club, Khagarijan College

**Executive Summary:** The executive summary emphasizes the importance of conducting regular green audits to assess an organization's environmental compliance and serve as a benchmark for future development. Khagarijan College prioritizes environmental consciousness among students and staff, conducting a green audit to evaluate its current status and contribute to environmental protection. Assessment criteria include flora and fauna diversity, biodiversity conservation, water and waste management, legislative compliance, and environmental initiatives. The audit report is based on personal observation and data analysis from surveys.

## GREEN AUDIT REPORT

The *Biota* of campus is extremely crucial for an environmentally friendly development of an organization. The *biota* not only makes the surroundings healthier but also adds to the aesthetic natural beauty of the vicinity. The Khagarijan College campus plays a host to many numbers of plants and animal species, mainly birds and insects in the latter group.

Total open area = 3.245 Acre Land

Total built-upon area = 3032.073 Sq. Meter

Total plant species - 45

Total animal species - 9

The total Garden area inside the college = 1200.31 sq. meter

### Plantation Drives

The college has taken up the initiative to frequently organize plantation programs several times a year. Various units of the college like the NSS Unit, Village Adoption Committee, Women Forum, Students' Association, and other cells make it a mandatory slot in the itinerary of activities within an academic session. Plantation drives are carried out both within the campus and outside, often extending to remote areas too. From plants yielding fruits to medicinal species, a variety is planted with proper planning and assured prompt mandatory care for them to grow at a proper pace. These initiatives aid in the growth of the green surroundings as well as add to the diversity in the biota of the college campus.

### Biota diversity of College Campus

The college campus is adjacent to the Kolong River. As such there is an intensive growth of a variety of plant species. A total of 43 plant species can be found within the campus, growing prolifically, and multiplying in quantities. 9 avian species are a common sight for the people within the campus which adds to the beauty of the green cover.

Sl. No	Scientific Name of the Plant	Local Name	Family	Uses
1	<i>Ageratum conyzoides</i>	Gondhoa-bon	Asteraceae	As a medicinal plant
2	<i>Aloe barbadensis</i> Mill	Sal Kuwori	Xanthorrhoeaceae	As a medicinal plant/Cosmetic use
3	<i>Alternanthera sessilis</i> R.Br. ex DC.	Mati-kanduri	Amaranthaceae	herbal medicines, and as an ornamental plan
4	<i>Amaranthus spinosus</i>	Hatikhutura	Amaranthaceae	Food Plant

5	<i>Amaranthus viridis</i>	Khuturakhak	Amaranthaceae	vegetable
6	<i>Bryophyllum pinnatum</i>	Dupar Bon	Crassulaceae	Popular houseplant
7	<i>Cassia sophera</i>	Medelua	Fabaceae	weed
8	<i>Cynodactylon Pers</i>	Dubori Bon	Poaceae	Medicinal use
9	<i>Cyperus pilosus Vahl.</i>	Murphula	Cyperaceae	Weeds
10	<i>Cyperus rotundus</i>	Keyabon	Cyperaceae	Weeds
11	<i>Dioscorea alata</i>	Kath-aloo	Dioscoreaceae	Edible tubers
12	<i>Eclipta prostrata</i>	Bhringaraj	Asteraceae	Medicinal
13	<i>Euphorbia hirta</i>	Gakhiroti bon	Euphorbiaceae	Weeds
19	<i>Fimbristylis aestivalis (Retz.) Vahl.</i>	Keyabon	Cyperaceae	Weeds
20	<i>Heliotropium indicum</i>	Bioni	Boraginaceae	Medicinal
21	<i>Ocimum sanctum</i>	Tulshi	Lamiaceae	Medicinal
22	<i>Imperata cylindrica Raeuschel.</i>	Ulu-kher	Poaceae	Thatch grass
23	<i>Leucus plukenetii (Roth) Spreng.</i>	Doron	Lamiaceae	Medicinal
24	<i>Mikania micrantha Kunth.</i>	Japani lota	Asteraceae	Medicinal
25	<i>Ocimum basilicum</i>	Ram-tulasi	Lamiaceae	Medicinal
26	<i>Oxalis corniculata</i>	Changoi-tenga	Oxalidaceae	Medicinal
27	<i>Paederia foetida</i>	Bhebeli-lata	Rubiaceae	Medicinal
28	<i>Panicum auritum Presl ex Nees.</i>	Balansa	Poaceae	Grass
29	<i>Polygonum hydropiper</i>	bihalagani	Polygonaceae	Medicinal
30	<i>Scoparia dulcis</i>	Modhu-mehari	Plantaginaceae	Medicinal
31	<i>Solanum nigrum</i>	Pokmou	Solanaceae	Medicinal
32	<i>Spilanthes paniculata Wall. ex DC.</i>	Bhringaraj	Asteraceae	Medicinal
33	<i>Tabasco pepper</i>	Bhüt jolokia	Solanaceae	Food and a spice
34	<i>Tephrosia purpurea Pers.</i>	Bon Neel	Fabaceae	Folk medicine
35	<i>Tridax procumbens</i>	Putoli bon	Asteraceae	Use in traditional

				medicine
36	<i>Spilanthes paniculata</i> Wall. ex DC.	Parbati Bon	Asteraceae	Use in traditional medicine
37	<i>Polygonum microcephalum</i>	Modhu- Xuleng	Polygonaceae	Edible Plant
38	<i>Asparagus racemosus</i>	Satomul	Asparagaceae	Medicinal Plant
39	<i>Withaniasomnifera</i>	Aswagandha	Solanaceae	Medicinal Plant
40	<i>Cheilocostusspeciosus</i>	JomLakhuti	Costaceae	Medicinal Plant
41	<i>Glycyrrhiza glabra</i>	Jesthamadhu	Fabaceae	Medicinal Plant
42	<i>Saracaasoca</i>	Ashoka	Fabaceae	Medicinal Plant
43	<i>Catharanthus roseus</i>	Nayantara	Apocynaceae	Ornamental Plant
44	<i>Cocos nu- cifera</i>	Narikol	Arecaceae	Food plant, fuel, coir
45	<i>Saccharum Officinarum</i>	Kuhiar	Poaceae	Medicinal Plant

	English name	Scientific name
List of avian species available in the College campus	1. Barn Owl	<i>Tyto alba</i>
	2. House Crow	<i>Corvus splendens</i>
	3. House Sparrow	<i>Passer domesticus</i>
	4. Koel	<i>Alcedo hercules</i>
	5. Little Cormorant	<i>Phalacrocorax niger</i>
	6. Pigeon	<i>Columba livia</i>
	7. Red-vented Bulbul	<i>Pycnonotuscafer</i>
	8. Rose Ringed Parakeet	<i>Cerylelugubris</i>
	9. Tree Sparrow	<i>Passer montanus</i>
	10. Cattle egret	<i>Bubulus ibis</i>
	11. Spotted Dove	<i>Spilopelia chinensis</i>
	12. Small Indian Kite	<i>Milvus migrans</i>
	13. Indian Pond Heron	<i>Ardeolagravii</i>
	14. House sparrow	<i>Passer domesticus</i>
	15. Koel	<i>Eudynamysscolopaceus</i>
	16. Common Kingfisher	<i>Alcedo atthis</i>
	17. Common Myna	<i>Acridotheres tristis</i>
	18. Indian Woodpucker	<i>Malanerpeessuperciliaris</i>
	19. Red Vented Bulbul	<i>Pycnonotus Cafer</i>

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	English name	Scientific name
List of reptile species available in the College campus	1. King Cobra	<i>Ophiophagus hannah</i>
	2. Checkered Keelback	<i>Xenochrophis piscator</i>
	3. Indian Rat Snake	<i>Ptyas mucosa</i>
	4. Garden Lizard	<i>Calotes versicolor</i>
	5. House Lizard	<i>Hemidactylus frenatus</i>
	6. Water Snake	<i>Enhydrisenhydris</i>
	7. Ornate Flying Snake	<i>Chrysopaleaornata</i>

	English name	Scientific name
List of insect species available in the College campus	1. Dragonfly	<i>Sympetrum flaveolum</i>
	2. Butterfly	<i>Lepidoptrasp</i>
	3. Mosquito	<i>Culicidae sp.</i>
	4. Tree Cricket	<i>Oecanthinae sp.</i>
	5. Winged Ant	<i>Alates sp.</i>
	6. Centipede	<i>Chilopoda sp.</i>
	7. Earthworm	<i>Lumbrincina sp.</i>
	8. Bullet Ant	<i>Paraponeraclavata</i>
	9. Honey bee	<i>Apis indica</i>
	10. Cockroach	<i>Periplanta americana</i>
	11. Wasp	<i>Ropalidia marginata</i>
	12. House fly	<i>Musca domestica</i>
	13. Grasshopper	<i>Poekilocercus pictus</i>
	14. Fruit Fly	<i>Drosophila melanogaster</i>

	English name	Scientific name
List of rodent species available in the College campus	1. Rat	<i>Rattus rattus</i>
	2. Pocket Mouse	<i>Chaetodipus intermedius</i>
	3. Squirrel	<i>Funambulus palmarum</i>

	English name	Scientific name
List of amphibian species available in the College campus	1. Frog	<i>Rana tigrina</i>
	2. Toad	<i>Bufo melanostictus</i>
	3. Indian Bull frog	<i>Haplobatrachustigernius</i>
	4. Leaf Frog	<i>Hylarantylari</i>

## WASTE MANAGEMENT

Waste management is crucial for maintaining environmental balance within any institution, including colleges. The college generates both biodegradable and non-biodegradable waste, which must be disposed of responsibly to prevent pollution of the campus and its surroundings. Non-biodegradable waste is placed in designated bins across the campus and collected by the local municipality.

Biodegradable waste is separated and sent to the Vermicompost Plant on campus, where it is converted into compost to support the campus ecosystem. The resulting compost is used to nourish plants throughout the college grounds.

Additionally, the college has a Drainage Machine to manage excess water, particularly during floods, preventing waterlogging on campus. This water is drained into the nearby Kolong River. The college also maintains effective drainage and plumbing systems in washrooms and the canteen.

## CONCLUSION

This audit has included extensive consultation with residents, students, staff, and the wider community regarding environmental aspects and the achievement of environmental development goals. Approximately 60% of the college campus is dedicated to landscaping to ensure a green environment. The audit has identified areas for potential improvement to enhance the campus's environmental friendliness. The audit team has provided objective recommendations and commended the well-maintained environmentally conscious campus. These recommendations have been forwarded to the appropriate authorities for further action.

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