GREEN AUDIT REPORT 2025-26

अप्रमत्तेन वेद्धव्यम्



Prepared for :

Cotton University
Guwahati

Prepared by :

Assam Science Technology & Environment Council

Bigyan Bhawan, G.S. Road, Guwahati-05

অসম বিজ্ঞান প্রযুক্তিবিদ্যা আৰু পৰিৱেশ পৰিষদ
(বিজ্ঞান আৰু প্ৰযুক্তি বিভাগ, অসম চৰকাৰ)
ASSAM SCIENCE TECHNOLOGY AND ENVIRONMENT COUNCIL
(Science and Technology Department, Govt. of Assam)
BIGYAN BHAWAN
G. S. Road, Christian Basti
Guwahati - 781005
Assam, India
Telephone : +91-361-3518292
E-mail : directorastec@gmail.com
astec@rediffmail.com
Website: astec.assam.gov.in

No. ASTEC/ENV/2161/2023/1808 **Date:** 22/11/2026

DECLARATION

This is to declare that the Green Audit of Cotton University, Guwahati Assam has been conducted to assess the environmental performance and sustainability practices of the institution. The audit was conducted in accordance with the applicable standards, guidelines and environmental norms prescribed by the Central Pollution Control Board (CPCB), New Delhi, and the Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India.

The audit covered key aspects including green campus and biodiversity, water management, and waste management. Based on the assessment, suitable recommendations have been provided for strengthening environmental management, improving resource efficiency, enhancing waste segregation and treatment, conserving water, and promoting biodiversity and sustainable practices on the campus.

The University is encouraged to implement the recommendations progressively and continue its efforts towards developing a more sustainable and environmentally responsible campus.

Date: 22/11/2026

Place: Guwahati

Dr. Jaideep Baruah
Director
ASTE Council

Director
Assam Science Technology
and Environment Council
Guwahati

ACKNOWLEDGEMENT

The Green Audit Team of the Assam Science Technology and Environment Council (ASTEC) places on record its sincere gratitude to the authorities of Cotton University for entrusting ASTEC with the responsibility of conducting the Green Audit of the University. The opportunity to undertake this assessment is gratefully acknowledged as a valuable contribution towards the University's continued efforts to promote environmental awareness, responsible resource utilisation and sustainable campus management.

The team expresses its special appreciation to Prof. Sudipta Nandy, Director (i/c), Internal Quality Assurance Cell (IQAC), Cotton University, for his guidance, coordination and support in facilitating the audit exercise. The cooperation extended by the faculty members, officers and non-teaching staff of the University is also sincerely acknowledged. Their assistance in furnishing the requisite information, institutional records and supporting documents, as well as their valuable interactions and inputs, greatly facilitated the assessment of various environmental parameters of the campus.

The team is particularly grateful to Dr. Mayuri Chabukdhara and Dr. Narayan Sharma, Department of Environmental Biology and Wildlife Sciences, and Dr. Reetooparna Patowary Kakati, Department of Botany, for their active assistance and cooperation during the field visit. Their support in facilitating the campus walkthrough, familiarising the audit team with the various academic and infrastructural facilities, and providing relevant departmental insights contributed significantly to the smooth conduct of the on-site assessment.

The Green Audit Team also acknowledges the cooperation of all other university personnel and stakeholders who, directly or indirectly, contributed to the exercise. Their collective support and willingness to share information and facilitate the assessment are deeply appreciated.

ASTEC sincerely appreciates the cooperation extended by Cotton University and hopes that the findings and recommendations of this Green Audit will serve as a useful reference in further strengthening the University's commitment to environmental sustainability and the development of a greener, resource-efficient campus.

Green Audit Team

ASTE Council



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Assam, India
Telephone : +91-361-3518292
E-mail : directorastec@gmail.com
astec@rediffmail.com
Website: astec.assam.gov.in

EXTERNAL GREEN AUDIT TEAM
(Assam Science Technology and Environment Council)

Sl. No.	Name	Designation	Audit Role	Signature
1	Dr. Rituparna Das	Junior Scientific Officer Environment Division, ASTEC	Green Campus (Waste, Water) Audit Officer	
3	Mr. Hijam Malem Nganba Singha	Program Officer, Environment Division, ASTEC	Green Campus (Biodiversity) Audit Officer	22/11/26

Assam Science Technology & Environment Council
Bigyan Bhawan
G.S. Road
Guwahati-5

Authorised Seal

ASTE Council

Dr. Jaideep Baruah
Director
ASTE Council

Director
Assam Science Technology and Environment Council
Guwahati

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EXECUTIVE SUMMARY

Environmental sustainability is an essential component of educational institutions, which play a fundamental role in the development of society and the nation. With growing awareness of environmental challenges, educational institutions are increasingly adopting eco-friendly practices to create sustainable and environmentally responsible campuses. Since these institutions nurture young minds, providing a healthy, green and sustainable learning environment is particularly important. In this context, conducting a Green Audit serves as an important step towards assessing existing environmental practices and identifying opportunities for improvement.

A Green Audit is a systematic process of assessing and analysing an institution's practices, resource utilisation and environmental performance to determine their sustainability and environmental compatibility. The primary objective of conducting the Green Audit at Cotton University, Hem Baruah Rd, Pan Bazaar, Guwahati, Assam 781001 was to assess its existing environmental practices and prepare an audit report highlighting the institution's current status, strengths and areas requiring further improvement. The College's initiative to undertake a Green Audit reflects its commitment towards sustainable campus development and environmental responsibility.

The audit focused on the key areas of Green Campus and Biodiversity, Water and Waste Management. The process included pre-audit consultations, preparation of questionnaires, on-site physical assessment, questionnaire-based surveys, analysis of findings, and formulation of recommendations and an action plan. The assessment tools and questionnaires were developed with reference to relevant guidelines, regulations, Acts and formats issued by the Government of India, Ministry of Environment, Forest and Climate Change (MoEFCC) and the Central Pollution Control Board (CPCB).

The findings of the Green Audit are intended to serve as indicators of the institution's existing environmental performance and to identify areas where further interventions and improvements may be required. The audit is therefore not intended as a criticism or endorsement of the institution, but as a constructive tool to support its continued journey towards a greener, more sustainable and environmentally responsible campus.

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CHAPTER 1:

CONCEPT OF GREEN AUDIT

1.1. Introduction

Educational institutions play a vital role in national development, and environmental sustainability is an essential part of this process. With growing environmental concerns, Institutions are increasingly adopting eco-friendly practices such as energy and water conservation, rainwater harvesting, waste segregation and recycling, wastewater management, biodiversity conservation and carbon reduction.

A Green Audit is a systematic assessment of an institution's resource utilisation, environmental practices and management systems to evaluate its environmental performance and identify areas for improvement. Such audits support the objectives of NAAC's sustainability framework, particularly the earlier Criterion VII – Institutional Values and Best Practices and the revised 10-Attribute framework introduced in 2025, including Attribute 10 – Sustainability Outcomes and Green Initiatives.

Beginning with the academic year 2016-17, the National Assessment and Accreditation Council (NAAC) in New Delhi requires all higher education institutions to submit an annual Environmental or Green Audit Report. Higher education institutions' corporate social responsibility requires them to help reduce global warming through carbon footprint reduction methods. Environmental auditing, sometimes known as "green" auditing, compares an organization's environmental performance to its environmental objectives and standards. A "green audit" is a formal investigation into an organization's environmental impact. As part of this activity, a green audit is carried out to assess the current situation on campus.

The terms "environmental audit" and "green audit" may have varied meanings depending on who you ask. Terms like "assessment," "survey," and "review" are commonly used to describe similar procedures. Furthermore, while some organizations/institutions feel that an "environmental audit" only looks at environmental concerns, others use the phrase to describe an assessment of health, safety, and environmental issues. Although there is no universally accepted definition of Green Audit, many notable organisations and institutions follow the main principle and approach summed up in the broad description provided by the International Chambers of Commerce (ICC) in its publication Environmental Auditing (1989).

1.2. Need for green audit in Educational Institutions

The ICC defines Environmental Auditing as:

"*A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects.*"

The term "environmental audit" or "green audit" refers to an array of evaluations aimed at identifying implementation faults, environmental management system compliance issues, and related corrective activities. It attempts to investigate environmental activities on and off the subject areas that have an impact on the eco-friendly atmosphere. According to the World Bank, it is a systematic analysis of environmental data about an organisation, facility, or location to determine whether or not it meets predetermined environmental standards. Environmental rules might be based on regional, national, or global norms. In fact, it is a methodical procedure of collecting and interpreting environmental data.

Increased urbanisation and economic advancement have caused a slew of ecological and environmental issues at the local, regional, and global levels. The usage of resources such as water, electricity, and others has historically resulted in environmental degradation. It is vital that our lifestyle and resource management do not have a negative impact on the environment. Educational institutions regularly utilise large amounts of water, power, and other resources, resulting in the production of CO2, waste, and energy and water loss, all of which can contribute to the worsening of local environmental sustainability. As environmental sustainability becomes a more pressing concern for the country, the role of educational institutions in addressing it grows in importance. As a result, educational institutions must establish a "Green Campus" strategy that encourages long-term expansion while effectively lowering atmospheric carbon dioxide levels.

Furthermore, the National Assessment and Accreditation Council (NAAC), New Delhi has mandated that all Higher Educational Institutions submit an annual Green Audit Report. Moreover, it is part of the Higher Educational Institutions' Corporate Social Responsibility to ensure that they contribute to the fight against global warming by reducing their carbon footprint. As a result, green auditing has become a mandatory requirement for all educational institutions.

1.3. Benefits of green audit for Educational Institutions

A green audit can help an educational institution understand how and where it uses the most energy, water, or other resources. The institution may then explore ways to improve and conserve. It may also be used to estimate waste quantity as well as type, which is useful for recycling operations and waste minimization plans. Green audits can increase environmental knowledge, morality, and ethical principles, as well as health awareness among students and faculty. It helps staff and students realise the advantages of being green on campus. Green auditing promotes cost savings by making use of fewer resources. It allows students and teachers to develop a sense of personal ownership and social responsibility. Therefore, it is vital that educational institutions assess their own contributions, responsibilities, and commitments to a sustainable future. Some of the advantages of green audits in educational institutions are listed below.

- More efficient resource management
- Provide basis for improved sustainability
- Provide a basis for development of green campus

- Enable waste management through reduction of waste generation, solid waste and water recycling
- Enable to create plastic free campus and evolve health consciousness among the stakeholders
- Enable determining cost saving methods through waste minimizing and managing
- Authenticate conformity with the implemented laws
- Empower the organizations to frame a better environmental performance
- Impart environmental education through systematic environmental management approach and improving environmental standards
- Assists in setting benchmarks for environmental protection initiatives
- Enable financial savings through a reduction in resource use
- Enhances the profiles of educational institutions
- Develops environmental ethic and value systems in students and staff
- Provides a valuable tool in the management and monitoring of environmental and sustainable development programs of educational institutions.

1.4. About criteria 7 and attribute 10 of NAAC

Educational institutions play a vital role in human resource development and in generating knowledge and technological solutions for society. Their campuses also provide opportunities to address environmental challenges through approaches such as Environmental Impact Assessment (EIA), Social Impact Assessment (SIA), Carbon Footprint Mapping and Green Audits.

Under the earlier NAAC accreditation framework, Criterion VII—Institutional Values and Best Practices emphasised environmental consciousness and sustainable campus practices. Green Audit emerged as an important tool for assessing an institution's environmental performance, covering aspects such as waste management, energy conservation, water and wastewater management, air and noise quality, biodiversity and resource utilisation. It helps institutions identify areas for improvement and adopt more sustainable practices.

With the NAAC reforms announced in February 2025, the earlier seven-criterion framework was reorganised into 10 Attributes. Attribute 10: "Sustainability Outcomes and Green Initiatives" places a specific and stronger emphasis on measurable environmental sustainability outcomes. It encompasses areas such as Green/Environment/Energy Audits, waste and water management, energy conservation, net-zero initiatives and community engagement. Thus, Green Audit continues to provide an important mechanism for documenting and demonstrating an institution's environmental performance, while contributing directly to its assessment under Attribute 10 and strengthening its commitment to sustainable and environmentally responsible campus management.

CHAPTER 2:

OBJECTIVES AND GOALS

2.1 Objectives of green audit

- To conduct a baseline survey to know the real status of green practices in the educational institution.
- To identify the problems faced while practising green practices in the educational institution campus.
- To examine current practises that has impact on the environment.
- To spread awareness for environmental consciousness amongst the students, teaching and non-teaching staff members.

  To identify and access environmental risk if any inside the institution campus. GOALS OF GREEN AUDIT
- Establishing a baseline of existing environmental conditions with focus on natural and physical environment.
- Understanding the current practices of sustainability with regard to green campus.
- Awareness generation among students concerning real issues of environment and its sustainability through participatory auditing process.
- Development of strategies and action plans towards improving environmental quality for future.

2.2 Scope of green audit

A clean and healthy environment promotes and facilitates learning. There are various programmes worldwide that address environmental education concerns. A green audit is the most effective and environmentally responsible approach to addressing environmental challenges. This type of professional care is the obligation of every individual involved in an economic, financial, social, or environmental component. Green audits should be performed on educational institution campuses since they help students realise the importance of environmental preservation and develop into responsible citizens. It also stipulates what tasks educational institutions must complete in order to become a green campus. Therefore, green audit is necessary at the institutional level of education.

CHAPTER 3:

ABOUT COTTON UNIVERSITY

3.1 A brief History

Cotton University, located in Panbazar, Guwahati, is one of the oldest and most prestigious institutions of higher education in Northeast India. Its history dates back to the early twentieth century, when the need for a college in Assam became a significant public demand. In 1899, Manik Chandra Barooah, responding to the aspirations of the people, wrote to the British Government requesting the establishment of a college in Guwahati. Subsequently, Sir Henry John Stedman Cotton, the then Chief Commissioner of Assam, announced the establishment of the institution on 3 November 1899. Named in his honour, Cotton College was formally inaugurated on 27 May 1901, with five professors and 37 students, under the affiliation of Calcutta University.

Over the decades, Cotton College emerged as a prominent centre of academic excellence and intellectual discourse in Assam. It played an important role in the freedom movement and became a focal point for the state's literary, cultural and socio-political developments. Following the establishment of Gauhati University in 1948, Cotton College became its constituent college. In recognition of its academic contributions, it was declared a Centre of Excellence on 16 October 1992.

In 2011, Cotton College State University was established through an Act of the Government of Assam, with Cotton College as its constituent unit. Subsequently, under the Cotton University Act, 2017, the two institutions were unified, and Cotton University formally came into existence on 1 June 2017. Today, the university continues its legacy through undergraduate, postgraduate and doctoral programmes, fostering academic excellence, research and intellectual development while preserving its rich historical and cultural heritage.

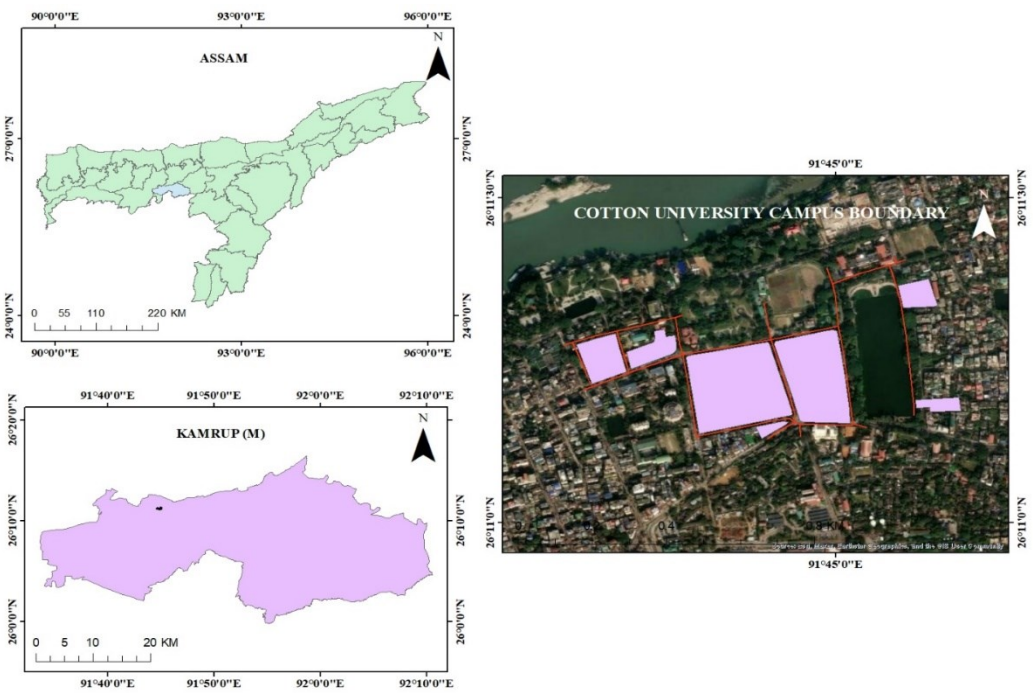


Fig.1: Map of the study area- Cotton University Campus

3.2 GEOGRAPHY

Cotton University is located at H.B. Road, Panbazar, Guwahati–781001, Kamrup Metropolitan district, Assam, India. The main campus covers approximately 24.9 acres (12.04 acres) and is geographically situated at approximately 26.1873° N latitude and 91.75° E longitude. It is located in an urban setting on the southern bank of the River Brahmaputra.

Table 1: Details of Cotton University

Sl. No.	Parameter	Details
1	**Name**	Cotton University (formerly Cotton College)
2	**Campus Area**	12.04 acres
3	**Latitude**	26.1873° N
4	**Longitude**	91.75° E
5	**Full Address**	Cotton University, H.B. Road, Panbazar, Guwahati – 781001, Assam, India
6	**District**	Kamrup Metropolitan
7	**Geographical Setting**	Urban
8	**Nearest River**	River Brahmaputra (southern bank)
9	**Website**	https://cottonuniversity.ac.in/

3.3 Mission

To hone and nurture an egalitarian and inclusive environment for students capable of fostering healthy minds and critical thinking for a strong nation. The University shall strive to meet the demands of the global world with changing paradigms so as to provide only the best education and build solidarities of knowledge and creativity to make our cosmos vibrant and our students' future-ready.

3.4 Vision

To strengthen multi-disciplinary, technology-enabled education; promote research for innovation and excellence; train students as responsible future citizens who will strive towards creating a sustainable society.

3.5 CAMPUS

Cotton University is spread over a campus area of **24.9 acres**, comprising **17 RCC buildings and 6 Assam Type buildings**. The reported built-up area, including roads, is **6400003 square metres or 158.1482 acres**. The University provides residential facilities through a total of **9 hostels, including 5 boys' hostels and 4 girls' hostels**, catering to the accommodation needs of students.

The campus has two canteens located in separate buildings, namely the Girls' Common Room and CSIT buildings, along with a separate Assam Type (A.T.) House. These facilities provide food and refreshments to students, faculty members and other staff.

The academic infrastructure includes **113 regular classrooms and 38 digital classrooms**, equipped with ICT-enabled teaching facilities and internet connectivity. The University has **42 laboratories**, comprising departmental and computer laboratories that support academic activities and research. Library facilities include one Central Library, with departmental libraries across various departments, and a collection of **1,03,930 books** in the Central Library.

Common rooms with necessary amenities are available for students and teachers. Sports and recreational facilities include **one indoor stadium, a drama practice ground, a basketball court and separate playing grounds within the hostels**. The University also has **16 conference rooms and auditoriums** to facilitate academic meetings, seminars and institutional events.

As part of its green campus initiatives, the University has installed solar photovoltaic panels for electricity generation and solar street lights, along with LED lighting to promote energy efficiency. However, the exact number of solar panels and solar street lights was not specified in the information provided.





Fig.2: Cotton University Campus

3.6 FACILITIES

Building: Cotton University has a combination of traditional Assam-type buildings and modern RCC (Reinforced Cement Concrete) buildings. The campus infrastructure reflects the University's historical architectural character as well as the expansion of its academic, administrative and research facilities.

Table 2. Classification of Buildings Based on Construction Type

Sl. No.	Type of building	Number of buildings
1	Assam-type buildings	6
2	RCC buildings	17
	Total	**23**

Table 3. Inventory of Major Buildings and Infrastructure

Sl. No.	Name of building/block	Major departments/facilities accommodated
1	Old Building	Physics Department and associated laboratories
2	New Building	Physics, Philosophy, Chemistry and Mass Communication facilities
3	BKB Building	English, Geography, Economics, History, EBWS, Women's Studies and Psychology
4	CSIT Building	Computer Science and Information Technology Department
5	AT Campus	Molecular Biology and Biotechnology Department
6	MCB Building	Political Science, Mathematics, Bengali, Arabic, Hindi, Education, Philosophy, Sanskrit and Statistics departments; Accounts and IQAC
7	New Administrative Building	Registrar's Office, Vice-Chancellor's Office, Finance Office, Academic Registrar's Office and Conference Hall
8	New Geology Department Building	Geology Department, laboratories, museum and classrooms
9	New Academic Building	Anthropology, Sociology, Library and Information Science, Bodo and associated academic facilities
10	Old ARB Hostel	Law Department classrooms
11	IQSC Building	Students' Day Home and Girls' Common Room
12	Library Building	Central Library, reading rooms, stack rooms and computer laboratories
13	DSW Office	Office of the Dean of Student Welfare
14	Botany Department Building	Botany Department, laboratories, classrooms and faculty rooms

15	Zoology Department Building	Zoology Department, research laboratories, museum, classrooms and library
16	KBR Building	Commerce Department
17	MCB Building	Additional academic and departmental facilities

Table 4. Architectural Characteristics

Building category	Description
Traditional Assam-type buildings	Buildings reflecting the traditional Assam-type architectural style, forming part of the University's older built infrastructure.
Modern RCC buildings	Reinforced Cement Concrete structures accommodating contemporary academic, administrative, laboratory, library and other institutional facilities.



Fig. 3: Assam type building



Fig. 4: RCC building

Classrooms (Regular and Digital): The university has 113 regular classrooms and 38 digital classrooms. Academic classrooms and laboratory classrooms are available, with ICT-enabled teaching facilities and internet connectivity.



Fig.5: Lecture Hall, Department of Botany



Fig.6: UG V & VI, Department of Botany

Laboratories: The university has 42 laboratories, including departmental laboratories and computer laboratories, which support teaching and research activities.



Fig. 7: Botany Lab



Fig. 8: Physics lab



Fig. 9: Museum Specimen

Library Facilities: The university has one main library, while individual departments also have their own library facilities. The Central Library houses a total of 1,03,930 books.



Fig. 10: Library

Common Rooms (Students and Teachers): Common room facilities with necessary amenities are available for both boys and girls. Common room facilities are also available for teachers.

Games and Sports Facilities (Indoor and Outdoor): Sports facilities include one indoor stadium, a drama practice ground and a basketball court. The hostels also have their own playing grounds.



Fig. 11: Girls common room



Fig. 12: Playground

Conference Rooms and Auditorium: The university has 16 conference room and auditorium facilities, which support academic meetings, seminars and other institutional events.

Solar Street Lights and Panels for Electricity Generation: Solar photovoltaic panels and LED lighting have been reported as sustainability initiatives on the campus. However, the number of solar panels and solar street lights has not been specified.



Fig. 13: Solar Light



Fig. 14: DG system

Canteen Facility: The University has a canteen housed in a separate building within the campus, providing convenient access to refreshments and food for students, faculty members and other staff. The canteen serves as an important support facility, particularly during working hours and academic activities.



Fig. 15: Canteen

3.7 COURSES AND DEPARTMENTS

COURSES: The university offers the following broad categories of programmes:

Table 5: Courses offered by the University

Sl No.	Programme	Courses
1	Higher Secondary (HS)	Science
2	Undergraduate (UG) programmes	BA, BSc, BCA and BA Liberal Arts, along with subject-specific degree programmes
3	Postgraduate (PG) programmes	MA, MSc, MCA and postgraduate diploma courses in various disciplines.
4	Doctoral (Ph.D.) programmes	Ph.D. in eligible research disciplines

DEPARTMENTS: The University has total 33 Departments, namely -

1. Anthropology
2. Arabic, Persian and Urdu
3. Archaeology
4. Assamese
5. Bengali
6. Bodo
7. Botany
8. Chemistry
9. Computer Science and IT
10. Commerce
11. Centre for Physical Education
12. Centre for Women's studies
13. Economics
14. Education
15. English
16. Environmental Biology and Wildlife Sciences
17. Geography
18. Geology
19. Hindi

20. History
21. Law
22. Library and Information Science
23. Mass Communication, Journalism and Media Studies
24. Mathematics
25. Molecular Biology and Biotechnology
26. Philosophy
27. Physics
28. Political Science
29. Psychology
30. Sanskrit
31. Sociology
32. Statistics
33. Zoology

CHAPTER 4:

METHODOLOGY

4.1 PRE AUDIT STAGE

The Green Audit was conducted in three phases: pre-audit, audit and post-audit. During the pre-audit phase, a meeting was held with the concerned University officials to discuss the scope and objectives of the audit, identify key target areas, and finalize the audit protocol and plan. Relevant documents and information were collected from the University prior to the commencement of the audit. Accordingly, the following target areas were identified as per the request of the University authorities:

Green Campus – Biodiversity, Water and Waste

4.2 AUDIT STAGE

The following processes were involved during the audit stage:

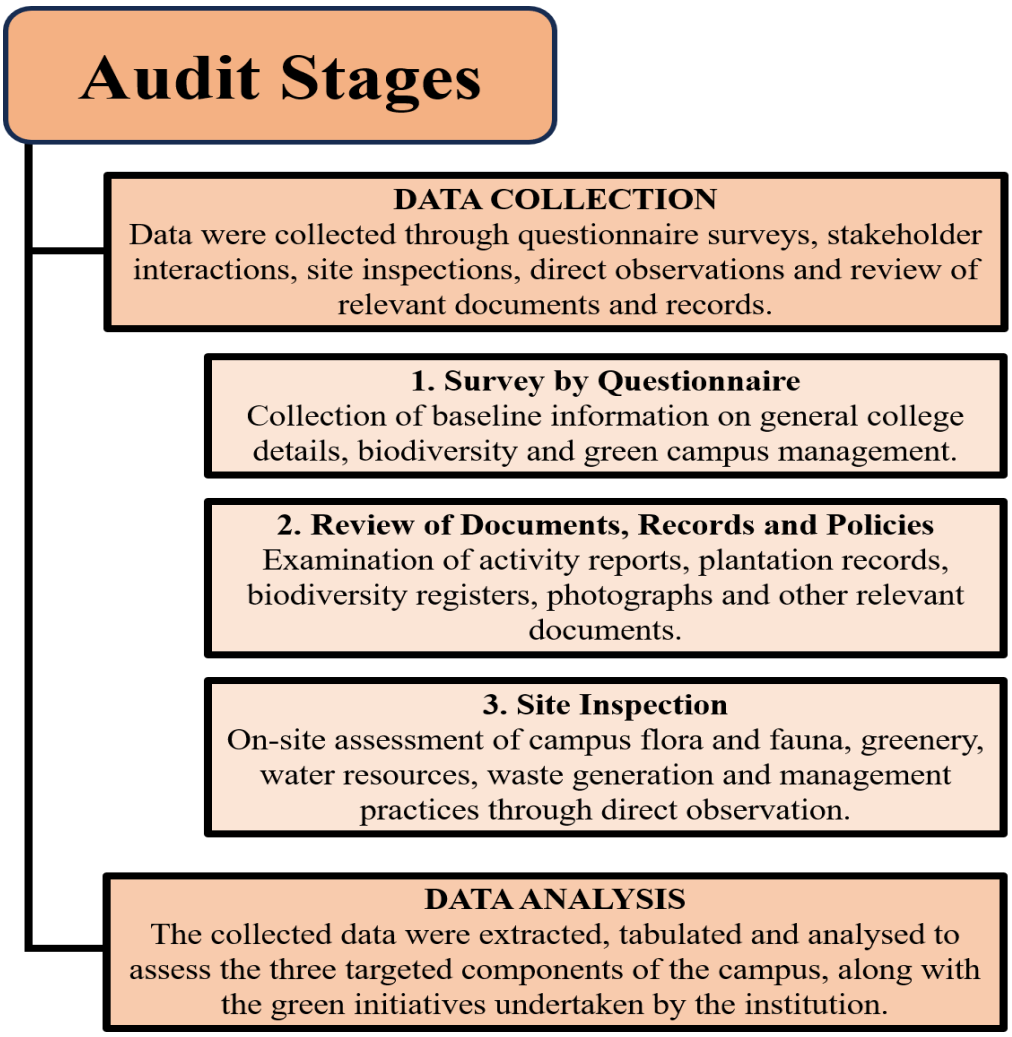


Fig. 16: Steps taken in Audit stages

4.3 POST AUDIT STAGE

The post-audit stage involved the preparation and review of draft findings, obtaining approval from the college authority and finalisation of the Green Audit Report. The key activities included:

1. Documentation of the campus biodiversity (flora and fauna).
2. Assessment of water and waste management practices.
3. Identification of the institution's green initiatives and best practices.
4. Compilation and analysis of the collected data.
5. Submission of the final audit report, along with the declaration/certificate, to the institution.

CHPATER 5:
WASTE AUDIT REPORT

The waste audit of Cotton University was undertaken to assess the types and sources of waste generated on the campus, existing waste segregation and disposal practices, wastewater treatment facilities, and initiatives adopted for waste reduction and recycling.

5.1 Introduction

Waste generation is an inevitable outcome of the day-to-day functioning of an educational institution, arising from academic, administrative, laboratory, residential, sanitation, catering and other campus activities. Effective waste management requires systematic assessment of the types and quantities of waste generated, segregation practices, collection, storage, recycling, treatment and final disposal mechanisms. The report presents the existing waste generation and management practices as reported by the institution, together with observations and recommendations for strengthening waste management and promoting a cleaner and more sustainable campus environment.

5.2 Objectives and Scope of the Audit

The audit aims to document the major sources and categories of waste generated across the campus; assess reported waste quantities and segregation practices; review the existing systems of waste collection, storage, transportation and disposal; understand the management of biodegradable, non-biodegradable, laboratory, plastic, e-waste and other special waste streams, wherever applicable; document existing recycling, reuse and resource-recovery initiatives; and identify areas where waste minimisation and management practices can be improved.

The assessment is based on the information and estimates furnished by the University through the audit questionnaire. Accordingly, the findings reflect the reported institutional practices and available records, and the waste generation figures, wherever provided.

5.3 Types and Sources of Waste Generation

Cotton University generates different categories of waste through its academic, research, administrative, construction, hostel and canteen activities. The major categories identified include solid waste, biodegradable waste, plastic waste, e-waste, laboratory waste, wastewater, and construction and demolition waste.

Solid waste primarily comprises paper, cardboard, damaged furniture, packaging materials, bottles, metals and other general waste. Biodegradable waste includes food waste, fallen leaves and garden waste. Plastic waste consists of pens, refills, plastic water bottles, packets and other plastic containers. E-waste includes computers, printers, batteries, cables and electrical and electronic components. Laboratory waste comprises chemicals, containers, glassware and solvents, while wastewater is generated from toilets, bathrooms, kitchens, laboratories and cleaning activities. Construction and demolition activities generate concrete, bricks, wood, metal scraps and debris.

Table 7: Quantities of Waste generated

Sl. No.	Type of waste	Category	Per day	Per month	Management/disposal
1	**Solid waste**	Biodegradable	10 kg	300 kg	Taken by GMC
2	**Liquid waste**	Hazardous	500 L	15,000 L	Drainage system
3	**Plastic waste**	Non-biodegradable and hazardous	20 kg	600 kg	Taken by GMC
4	**E-waste**	Non-biodegradable and hazardous	5 kg	150 kg	Auctioned yearly
5	**Dry leaves**	Biodegradable	8 kg	240 kg	Burned
6	**Chemical waste**	Non-biodegradable and hazardous	6 kg	180 kg	Treated inside the campus
7	**Food waste from canteen/hostel**	Biodegradable	30/280 kg	900/8400 kg	Taken by GMC
8	**Glass waste**	Non-biodegradable	4 kg	120 kg	Not specified

Table 8: Types of waste

Sl. No.	Types of Waste	Items
1	**Solid waste**	Damaged furniture, Paper waste, Paper plates, Food wastes
2	**Plastic waste**	Pen, Refill, Plastic water bottles, plastic packets and other plastic containers
3	**Liquid waste**	Washings, Urinals, Bathrooms
4	**E-waste**	Computers, Electrical and Electronics parts
5	**Chemical waste**	Laboratory wastes
6	**Glass waste**	Broken Glassware from Labs



Fig. 17: Dustbins

5.4 Waste Segregation and Collection

The University has implemented a **two-bin waste collection system** across the campus, with separate bins for dry and wet solid waste. Waste is collected daily from different sources and segregated into the respective categories. The collected waste is subsequently transported to the designated solid waste collection zone within the institution, from where it is collected by the Guwahati Municipal Corporation (GMC).

5.5 Waste Generation and Disposal Mechanism

Cotton University generates various categories of waste through its academic, research, administrative, hostel, canteen and construction activities. These include solid waste, biodegradable waste, plastic waste, e-waste, laboratory waste, glass waste and wastewater. The University follows a two-bin system for segregation of dry and wet waste, with daily collection and subsequent transportation to the designated waste collection zone for disposal through Guwahati Municipal Corporation (GMC). Additional measures include reuse of paper and electronic equipment, collection of recyclable materials through an MoU with iNOW, chemical treatment of laboratory effluents through an installed ETP, and composting of organic waste generated in hostels. The University has also established a Sewage Treatment Plant (STP), which was reported to be awaiting full operationalization at the time of the audit. These initiatives reflect the5 University's efforts towards systematic waste management, resource recovery and reduction of it6s environmental footprint.



Fig. 18: Food waste treatment plant for biogas generation

5.6 Paper Waste Management and Recycling Initiatives

Although recycled paper is not generally used in the University, the reuse of one-sided paper is practised and encouraged wherever applicable. Paperless communication through email is also

adopted to minimise paper consumption. The University had an agreement with Maya Enterprise, a proprietorship firm based in Bharalumukh, for the disposal of scrap paper, which requires renewal.

5.7 Laboratory Waste Management

Cotton University has entered into an agreement with the Pollution Control Board of Guwahati and Eastern Echotech Service Private Limited for establishing an Effluent Treatment Plant (ETP) within the campus. The ETP has been successfully installed within the Department of Chemistry premises Previously segregated laboratory effluents are chemically treated before being discharged into the common drain. As reported in the questionnaire, no radioactive waste is generated on the campus.

5.8 Wastewater Management

The University has reported that no underground sewage tank is available within the institution. A Sewage Treatment Plant (STP) has been set up and is expected to become fully operational in a few months. Once operational, the STP is intended to treat wastewater generated on the campus, with the treated water being reused for watering campus gardens. The sludge generated during treatment is proposed to be dried on drying beds and subsequently used as manure for gardening. This approach is intended to promote wastewater treatment and resource recovery within the campus.

5.9 E-Waste Management

The University follows a reuse-oriented approach to managing electronic waste. Electronic items are used to their fullest potential, with minor repairs undertaken by laboratory assistants and teaching staff, while major repairs are managed by the Technical Assistant to facilitate reuse. Under the MoU signed with iNOW on 09/09/2021, damaged computers and other non-repairable electronic waste are collected for appropriate disposal. Through its *Keep It Clean Always (KICA)* initiative, iNOW has committed to sending the collected e-waste to designated recycling facilities operated by Rapidue Technologies Pvt. Ltd. across India. These facilities are reported to comply with the Environment (Protection) Act, 1986, and the Municipal Solid Wastes (Management and Handling) Rules, 2000.

5.10 Organic Waste Management and Composting

The University generates organic waste, particularly food waste from hostels and canteens, along with vegetable waste, fallen leaves and other garden waste. In the hostels, food waste is collected in waste assimilators, where it undergoes decomposition. The liquid byproduct generated during the process is collected and used as liquid manure for gardening within the campus.

5.11 Existing Waste Management Practices

The following waste management practices have been reported by the University:

i. Segregation and collection of waste.
ii. Treatment of laboratory wastewater.
iii. Composting of organic waste.
iv. Biogas.
v. E-waste collection and disposal mechanism.

5.12 Awareness and Community Outreach

The University recognises the importance of creating awareness regarding waste segregation, recycling and responsible waste disposal. Awareness programmes and cleanliness drives are conducted within the campus as well as in schools outside the city. The questionnaire also identifies posters, slogans, social media campaigns and street plays as potential methods for spreading awareness about recycling and responsible waste management among the wider community.

5.13 Overall Hygiene

In addition to its waste management initiatives, Cotton University has also undertaken a Hygiene Certification initiative, reflecting its commitment to maintaining a clean, hygienic and healthy campus environment. The Office of the Joint Director of Health Services, Kamrup Metropolitan District, Government of Assam, issued a Certificate of Health and Hygiene (No. Esstt/Jt.DHS(M)/Sanitation/2026-27/10561, dated 11 August 2026) to Cotton University, Panbazar, Guwahati, following an inspection on 10 August 2026. The inspection found the campus clean and well maintained, with safe drinking water, sufficient and hygienic toilets, a good drainage system, and good general condition. The student-teacher ratio, fire safety measures and first aid facilities were also found to be maintained. The university was certified as maintaining

good health and hygiene, and the certificate is valid for the year 2026-27. The report is attached here **as Annexure I.**

5.14 Key Audit Observations

- The University has adopted a two-bin system for segregation of waste at source, facilitating the separation of different waste categories.
- Collection of recyclable waste and reuse of paper and electronic equipment contribute to resource conservation and waste minimisation.
- Laboratory effluent treatment facilities have been established to ensure appropriate management of laboratory wastewater.
- Organic waste composting initiatives have been undertaken, providing scope for converting biodegradable waste into useful compost.
- E-waste management is facilitated through an institutional MoU, providing an organised mechanism for its handling and disposal.
- The University undertakes awareness-generation and cleanliness activities to encourage responsible waste management practices among campus stakeholders.
- Regular monitoring and documentation of waste generation, strengthening of source segregation, and reduction of single-use plastics require further attention.
- Consistent implementation of waste minimisation, recycling and resource-recovery measures, supported by institutional monitoring and student participation, would help the University progress towards its stated goal of achieving a zero-garbage campus.

5.15 Conclusion

The Waste Audit of Cotton University provides an overview of the existing waste generation patterns and waste management practices across the campus. The assessment highlights the University's initiatives towards waste segregation, recycling, composting, laboratory effluent treatment and e-waste management. While these initiatives reflect institutional efforts towards responsible waste management, the audit also provides an understanding of the existing practices and areas requiring further attention. Overall, the assessment serves as a baseline for evaluating campus waste management and supporting Cotton University's endeavour to develop a cleaner, more sustainable and zero-garbage campus.

CHAPTER 6:

WATER AUDIT REPORT

The waste audit of Cotton University was undertaken to assess the types and sources of water usage on the campus, facilities, wastewater treatment facilities, and initiatives adopted for recycling.

6.1 Introduction

Water is an essential resource for the day-to-day functioning of an educational institution, supporting academic, laboratory, residential, sanitation, catering and landscape-maintenance activities. A systematic assessment of water sources, storage, distribution, consumption and wastewater management is important for understanding institutional water use and identifying opportunities for conservation.

The present Water Audit Report of Cotton University, Guwahati, has been prepared on the basis of the information furnished in the University's completed Water Audit Questionnaire. The report presents the existing water-use practices and infrastructure as reported by the institution, together with observations and recommendations for strengthening water management.

6.2 Objectives and Scope of the Audit

The audit aims to document the sources and infrastructure of water supply; assess reported water use across major campus activities; review storage, distribution and sanitation facilities; understand laboratory wastewater management; document rainwater harvesting and conservation measures; and identify areas where monitoring and water-use efficiency can be improved.

The assessment is based on questionnaire responses and reported estimates. As the questionnaire indicates that annual water-meter records and the daily quantity of water pumped could not be confirmed, the consumption figures should be treated as estimates rather than independently verified measurements.

6.3 Sources of Water

Cotton University reports two principal sources of water for campus requirements:

Table 9: Sources of Water

Source category	Source reported
Surface / external supply	Municipal water supply through Jalboard
Groundwater	Bore wells

The University has reported a total of 14 bore wells distributed across different campus locations

Table 10: Bore wells of the campus

Location / facility	Number of wells
Physics Department	1
Chemistry Department	2
Main Campus	7
Botany–Zoology Block	1
Girls' Hostel	2
Professor Colony	1
Total	**14**

The questionnaire reports 14 electric motors for pumping water, corresponding to the reported number of wells. The horsepower of the seven motors in the Main Campus is stated as 17.5 HP each, giving a combined capacity of 122.5 HP for these seven motors. Horsepower details for the remaining motors were not furnished.

6.4 Water Storage and Distribution Infrastructure

Water is stored in underground reservoirs and conventional water storage tanks before being distributed for campus requirements. The aggregate storage capacity reported by the University is approximately 4.77 lakh litres.

The University has reported 105 water taps across five campus blocks/facilities. The block-wise details and the corresponding water-use figures entered in the questionnaire are reproduced below.

Table 11: Water taps of the campus

Block / facility	Number of taps	Reported water-use figure (L)
Botany–Zoology Block	20	3,000
Main Campus	30	4,500
Physics–Chemistry Block	25	3,750
Boys' Hostel Block	15	2,250
Girls' Hostel Block	15	2,250
Total	105	15,750

6.5 Water Consumption and Major Uses

Water is used for a range of academic, domestic, sanitation and campus-maintenance activities. The uses identified by the University include drinking, cooking, handwashing, toilet use, bathing, washing clothes and dishes, canteen operations, floor cleaning, laboratory activities, construction, gardening, and cleaning of vehicles and outdoor areas.

Table 12: Water consumption

Sl. No.	Activity	Average use per day (L)	Average use per month (L)
1	Washing hands and face	8,000	2,40,000
2	Toilet use	30,000	9,00,000
3	Bathing	18,000	5,40,000
4	Washing clothes	6,000	1,80,000
5	Cooking	1,500	45,000
6	Washing dishes	2,500	75,000
7	Canteen use	3,000	90,000

8	Cleaning floors	4,000	1,20,000
9	Laboratory use	1,000	30,000
10	Construction work	500	15,000
11	Gardening and watering plants	8,000	2,40,000
12	Drinking water	1,500	45,000
13	Vehicle and outdoor area cleaning	500	1,500 (approximately)
	Total (as reported)	84,500	25,35,000

6.6 Water Use in Toilets and Sanitation Facilities

The University has reported a total of 110 toilets across five blocks/facilities. The questionnaire estimates water use for these facilities as follows:

Table 13: Water Use in Sanitation

Block / facility	Number of toilets	Water use per day (L)	Water use per month (L)
Botany–Zoology Block	15	2,250	67,500
Main Campus	15	2,250	67,500
Physics–Chemistry Block	10	1,500	45,000
Boys' Hostel	40	6,000	1,80,000
Girls' Hostel	30	4,500	1,35,000
Total	110	16,500	4,95,000

6.7 Laboratory Water Use and Wastewater Management

Laboratory activities are among the identified uses of water on the campus. The questionnaire states that wastewater generated during laboratory activities is collected and discharged through a drainage system. It further reports that a chemical wastewater treatment plant is available in the Chemistry Department for the management and treatment of laboratory wastewater containing chemical residues prior to disposal.

The University has stated that laboratory wastewater does not mix with groundwater and that treatment is available for laboratory water after use in the Chemistry Department. The questionnaire does not provide details on treatment capacity, treatment technology, operating frequency, quality testing, or records of treated wastewater. These details may be documented to strengthen the assessment of laboratory wastewater management.



Fig. 19: Chemical waster Water tratment Facility of the campus

6.8 Wastewater Generation and Disposal

Wastewater is generated on the campus through routine activities such as toilet and washroom use, handwashing, washing and cleaning, canteen operations and laboratory activities. The major sources identified in the questionnaire are toilets and washrooms, handwashing and washing areas, canteens, cleaning activities and laboratory operations.

As reported, wastewater generated on the campus is discharged through the drainage system. The Chemistry Department has a chemical wastewater treatment plant for laboratory wastewater. The questionnaire does not specify the final destination of the general campus wastewater after it enters the drainage system, nor does it provide details of any treatment or reuse arrangements for domestic wastewater.

6.9 Rainwater Harvesting

Cotton University has reported the availability of a rainwater harvesting system on the campus, with a stated storage capacity of 8,000 litres. This facility provides an opportunity to supplement the campus water supply and reduce dependence on conventional sources, subject to the intended use and quality requirements of the harvested water.

The questionnaire does not provide details regarding the number and location of rainwater harvesting structures, catchment area, annual volume harvested, maintenance schedule or actual utilisation. Maintaining these records would help assess the contribution of rainwater harvesting to campus water conservation.



Fig. 20: Rain water harvesting tanks of the campus

Rainwater runoff from the campus is channelled through the existing drainage network and discharged through designated drains. The drainage system facilitates the removal of surface runoff, particularly during periods of rainfall, helping to prevent waterlogging within the campus premises. The existing drainage arrangements are shown in the photographs below.



Fig. 21: Rain water drainage system to prevent watre logging

6.10 Water Conservation and Management Practices

No damaged taps were identified at the time of completing the questionnaire and that no water wastage was observed. A water-tank measuring system is also mentioned as a mechanism for monitoring tank levels and helping identify leakage or overflow. These reported practices provide a basis for further strengthening systematic water monitoring across the campus.

6.11 Water Quality

The Department of Environmental Biology and Wildlife Sciences (EBWS), Cotton University, tested the campus's drinking water sources and soil. The drinking water showed a mean pH of 7.53 ± 0.43, total hardness of 128 ± 22.80 mg/L, alkalinity of 40.4 ± 2.97 mg/L, chloride of 13.62 ± 2.38 mg/L, turbidity of 17.01 ± 3.74 NTU, conductivity of 0.16 ± 0.01 and TDS of 96.2 ± 3.42 ppm. The soil analysis recorded a mean pH of 5.86 ± 0.08, soil organic carbon of 0.92 ± 0.25%, nitrate of 18.50 ± 2.69 ppm, phosphate of 17.18 ± 2.43 ppm and available potassium of 70.95 ± 9.95 ppm. The water parameters are mostly within BIS (IS 10500) limits,

except turbidity, which exceeds the permissible limit of 5 NTU and should be confirmed or addressed through remedial measures such as filtration. The conductivity unit also appears to be mislabelled (likely mS/cm rather than µS/cm) and should be verified with the department. The report was attached as **Annexure II** along with this report.

6.12 Key Audit Observations

- The campus relies on both municipal/Jalboard supply and groundwater from 14 reported bore wells.
- The University reports a total water storage capacity of approximately 4.77 lakh litres, although the number and type of individual tanks have not been confirmed.
- The activity-wise questionnaire estimate indicates total water use of 84,500 litres per day; this is an estimate and is not supported by annual meter records.
- Toilet facilities account for a reported 16,500 litres per day, based on the block-wise figures supplied.
- The Chemistry Department has a chemical wastewater treatment plant for laboratory wastewater.
- A rainwater harvesting system with a reported capacity of 8,000 litres is available on campus.
- There are105 taps and 110 toilets across the listed blocks/facilities.
- The daily pumping quantity and annual metered consumption are unavailable, limiting the verification of the overall water balance.

6.13 Conclusion

The water audit indicates that water is required for a wide range of academic, residential, sanitation and campus-maintenance activities. Multiple sources of water, a network of bore wells and pumping motors, substantial storage capacity, a rainwater harvesting facility, and a chemical wastewater treatment plant in the Chemistry Department was observed during the audit. Measures such as monitoring storage levels, inspecting the distribution network, repairing leakages and promoting awareness have also been identified.

CHAPTER 7:
GREEN CAMPUS (BIODIVERSITY) AUDIT

7.1 Open Area

The open areas of the Cotton University campus feature tree-lined pathways, small gardens, sitting spots, an archaeological park, and playgrounds in hostels. Several departments also have their own gardens, alongside a parking area shaded and enclosed by trees. Tree-lined walkways offer welcome shade while connecting academic blocks, and the gardens and sitting areas give students and staff quiet corners to relax, study, and interact. These green spaces double as a spot for urban birdwatching. Mature trees, dense canopies, and flowering plants provide food, shelter, and safe nesting sites, turning the campus into a breeding ground for birds such as the Red-vented Bulbul, Oriental Magpie-Robin, Common Tailorbird, Common Myna, Asian Koel, Spotted Dove, and House Crow. Fruiting trees also feed squirrels, which nest in tree forks and thick foliage. Taken together, these open spaces help moderate the local microclimate, absorb carbon dioxide, cut down on street noise, and allow rainwater to percolate into the soil. Protecting mature trees, avoiding pruning during the nesting season, and planting more native species will keep these green pockets thriving right in the heart of Guwahati.



Fig. 22: Open spaces of Cotton University

7.2 Campus Flora

The flora of Cotton University, Guwahati, is rich and varied, with 85 plant species belonging to 76 genera and 45 families. Fabaceae (11 species) and Moraceae (7) are the best-represented families, followed by Apocynaceae and Rutaceae. The tree-lined pathways, small gardens, archaeological park and departmental plots are dominated by Rain tree (*Samanea saman*), Mango (*Mangifera indica*), Jackfruit (*Artocarpus heterophyllus*), Banyan (*Ficus benghalensis*) and other figs, Bokul (*Mimusops elengi*), Neem (*Azadirachta indica*), Gulmohar (*Delonix regia*) and Jamun (*Syzygium cumini*). The most numerous tree is Debadaru (*Polyalthia longifolia*), with about 50 plants along the pathways. These trees give shade, food and nesting sites to the campus birds and squirrels. Several threatened species also grow here.

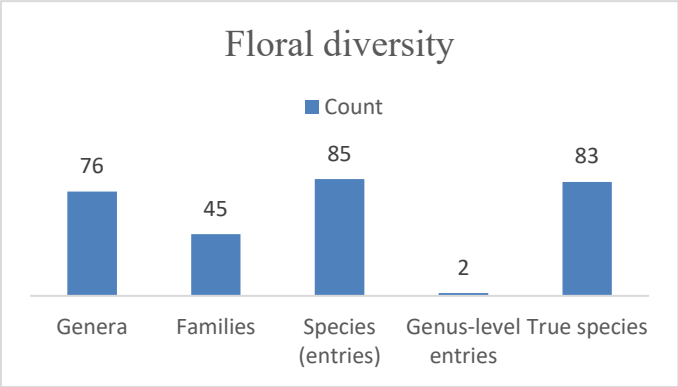


Fig 23: Families of faunal species enumerated

The campus has botanical, medicinal and ornamental gardens, but no herbal, zodiac, kitchen or terrace gardens. The botanical garden is dominated by ornamentals such as China rose (*Hibiscus rosa-sinensis*), Ixora, Bougainvillea, Marigold and Allamanda, along with Mango and Guava. The medicinal garden holds ten species: Neem, Aloe vera, Bael, Curry leaf (*Murraya koenigii*), Silikha (*Terminalia chebula*), Ginger (*Zingiber officinale*), Holy basil (*Ocimum tenuiflorum*), Touch-me-not (*Mimosa pudica*), Bermuda grass (*Cynodon dactylon*) and Lawn marsh pennywort (*Hydrocotyle sibthorpioides*). Their traditional uses include skin care, oral hygiene and digestive health. The campus also has many fruit-yielding plants, including Jackfruit, Outenga (*Dillenia indica*), Guava, Coconut and Litchi, along with vegetable and crop plants such as Papaya, Banana, Bottle gourd and Chilli.

Table 14: Floral species enumerated in the university campus along with their details

Sl.No	Genus	Species	Plant Species	Family	Common Name	IUCN Status
1	*Samanea*	*saman*	*Samanea saman* (Jacq.) Merr.	Fabaceae	Rain tree	LC
2	*Millettia*	*pinnata*	*Millettia pinnata* (L.) Panigrahi	Fabaceae	Karanja / Koras	LC
3	*Pterygota*	*alata*	*Pterygota alata* (Roxb.) R.Br.	Malvaceae	Buddha's Coconut	NE
4	*Saraca*	*asoca*	*Saraca asoca* (Roxb.) W.J.de Wilde	Fabaceae	Sita Ashoka	VU
5	*Terminalia*	*bellirica*	*Terminalia bellirica* (Gaertn.) Roxb.	Combretaceae	Bhomora (Bahera)	LC
6	*Artocarpus*	*heterophyllus*	*Artocarpus heterophyllus* Lam.	Moraceae	Jackfruit (Kothal)	NE
7	*Dillenia*	*indica*	*Dillenia indica* L.	Dilleniaceae	Elephant apple (Outenga)	LC
8	*Mangifera*	*indica*	*Mangifera indica* L.	Anacardiaceae	Mango	DD
9	*Syzygium*	*cumini*	*Syzygium cumini* (L.) Skeels	Myrtaceae	Jamun (Jaam)	LC
10	*Litsea*	*monopetala*	*Litsea monopetala* (Roxb.) Pers.	Lauraceae	Soalu	LC
11	*Ficus*	*racemosa*	*Ficus racemosa* L.	Moraceae	Cluster fig (Dimoru)	LC
12	*Polyalthia*	*longifolia*	*Polyalthia longifolia* (Sonn.) Thwaites	Annonaceae	Debadaru (False Ashoka)	LC
13	*Terminalia*	*chebula*	*Terminalia chebula* Retz.	Combretaceae	Silikha (Myrobalan)	LC
14	*Ficus*	*elastica*	*Ficus elastica* Roxb. ex Hornem.	Moraceae	Rubber plant	LC
15	*Albizia*	*lucidior*	*Albizia lucidior* (Steud.) I.C.Nielsen	Fabaceae	Moj	LC
16	*Ficus*	*benghalensis*	*Ficus benghalensis* L.	Moraceae	Banyan	LC
17	*Ehretia*	*acuminata*	*Ehretia acuminata* R.Br.	Boraginaceae	Bowal (Koda tree)	LC
18	*Persea*	*bombycina*	*Persea bombycina* (King ex Hook.f.) Kosterm.	Lauraceae	Som	NE
19	*Leucaena*	*leucocephala*	*Leucaena leucocephala* (Lam.) de Wit	Fabaceae	Subabul (White leadtree)	LC
20	*Alstonia*	*scholaris*	*Alstonia scholaris* (L.) R.Br.	Apocynaceae	Devil tree (Sotiyana)	LC
21	*Delonix*	*regia*	*Delonix regia* (Hook.) Raf.	Fabaceae	Gulmohar (Krishnasura)	LC

22	*Azadirachta*	*indica*	*Azadirachta indica* A.Juss.	Meliaceae	Neem (Mohaneem)	LC
23	*Litsea*	*glutinosa*	*Litsea glutinosa* (Lour.) C.B.Rob.	Lauraceae	Indian laurel (Baghnola)	LC
24	*Spondias*	*pinnata*	*Spondias pinnata* (L.f.) Kurz	Anacardiaceae	Hog plum (Omora)	LC
25	*Neolamarckia*	*cadamba*	*Neolamarckia cadamba* (Roxb.) Bosser	Rubiaceae	Kadam (Kodom)	NE
26	*Ficus*	*religiosa*	*Ficus religiosa* L.	Moraceae	Peepal (Aahot)	LC
27	*Melia*	*azedarach*	*Melia azedarach* L.	Meliaceae	Persian lilac (Ghoraneem)	LC
28	*Aegle*	*marmelos*	*Aegle marmelos* (L.) Corrêa	Rutaceae	Bael	NT
29	*Bauhinia*	*variegata*	*Bauhinia variegata* L.	Fabaceae	Kanchan	LC
30	*Ficus*	*rumphii*	*Ficus rumphii* Blume	Moraceae	Pakhri (Mock peepal)	LC
31	*Mimusops*	*elengi*	*Mimusops elengi* L.	Sapotaceae	Bokul	LC
32	*Ficus*	*tinctoria*	*Ficus tinctoria* G.Forst.	Moraceae	Jori	LC
33	*Psidium*	*guajava*	*Psidium guajava* L.	Myrtaceae	Guava (Modhuriam)	LC
34	*Terminalia*	*arjuna*	*Terminalia arjuna* (Roxb. ex DC.) Wight & Arn.	Combretaceae	Arjun	LC
35	*Murraya*	*paniculata*	*Murraya paniculata* (L.) Jack	Rutaceae	Kamini Kanchan	NE
36	*Hopea*	*odorata*	*Hopea odorata* Roxb.	Dipterocarpaceae	Hopea (Ta-khian)	VU
37	*Moringa*	*oleifera*	*Moringa oleifera* Lam.	Moringaceae	Drumstick (Sojina)	LC
38	*Magnolia*	*champaca*	*Magnolia champaca* (L.) Baill. ex Pierre	Magnoliaceae	Champak (Titachopa)	LC
39	*Nyctanthes*	*arbor-tristis*	*Nyctanthes arbor-tristis* L.	Oleaceae	Night jasmine (Sewali)	LC
40	*Melaleuca*	*citrina*	*Melaleuca citrina* (Curtis) Dum.Cours.	Myrtaceae	Bottle brush	NE
41	*Averrhoa*	*carambola*	*Averrhoa carambola* L.	Oxalidaceae	Star fruit (Kordoi)	DD
42	*Cassia*	*fistula*	*Cassia fistula* L.	Fabaceae	Golden shower (Sonaru)	LC
43	*Livistona*	*jenkinsiana*	*Livistona jenkinsiana* Griff.	Arecaceae	Tokou (Assam fan palm)	NE
44	*Nerium*	*oleander*	*Nerium oleander* L.	Apocynaceae	Oleander (Korobi)	LC
45	*Plumeria*	*rubra*	*Plumeria rubra* L.	Apocynaceae	Frangipani (Champa)	LC
46	*Lagerstroemia*	*speciosa*	*Lagerstroemia speciosa* (L.) Pers.	Lythraceae	Queen's crape myrtle (Ejar)	LC
47	*Putranjiva*	*roxburghii*	*Putranjiva roxburghii* Wall.	Putranjivaceae	Putranjiva	LC
48	*Toona*	*ciliata*	*Toona ciliata* M.Roem.	Meliaceae	Red cedar (Poma)	LC

49	*Euphorbia*	*neriifolia*	*Euphorbia neriifolia* L.	Euphorbiaceae	Siju	LC
50	*Senna*	*siamea*	*Senna siamea* (Lam.) H.S.Irwin & Barneby	Fabaceae	Minjiri (Kassod tree)	LC
51	*Tectona*	*grandis*	*Tectona grandis* L.f.	Lamiaceae	Teak (Segun)	EN
52	*Cocos*	*nucifera*	*Cocos nucifera* L.	Arecaceae	Coconut (Narikol)	NE
53	*Santalum*	*album*	*Santalum album* L.	Santalaceae	Sandalwood (Chandan)	VU
54	*Ziziphus*	*mauritiana*	*Ziziphus mauritiana* Lam.	Rhamnaceae	Indian jujube (Bogori)	LC
55	*Pterocarpus*	*dalbergioides*	*Pterocarpus dalbergioides* Roxb. ex DC.	Fabaceae	Andaman Padauk	VU
56	*Bombax*	*ceiba*	*Bombax ceiba* L.	Malvaceae	Silk cotton (Simalu)	LC
57	*Phyllanthus*	*emblica*	*Phyllanthus emblica* L.	Phyllanthaceae	Amla (Aamlokkhi)	LC
58	*Zingiber*	*officinale*	*Zingiber officinale* Roscoe	Zingiberaceae	Ginger	NE
59	*Ocimum*	*tenuiflorum*	*Ocimum tenuiflorum* L.	Lamiaceae	Holy basil (Tulsi)	NE
60	*Mimosa*	*pudica*	*Mimosa pudica* L.	Fabaceae	Touch-me-not (Lajuki lota)	LC
61	*Cynodon*	*dactylon*	*Cynodon dactylon* (L.) Pers.	Poaceae	Bermuda grass (Dubori)	LC
62	*Hydrocotyle*	*sibthorpioides*	*Hydrocotyle sibthorpioides* Lam.	Araliaceae	Lawn marsh pennywort	NE
63	*Litchi*	*chinensis*	*Litchi chinensis* Sonn.	Sapindaceae	Litchi (Lychee)	NE
64	*Monochoria*	*hastata*	*Monochoria hastata* (L.) Solms	Pontederiaceae	Hastate-leaved pondweed	LC
65	*Cymbopogon*	*citratus*	*Cymbopogon citratus* (DC.) Stapf	Poaceae	Lemongrass	NE
66	*Zamia*	*pygmaea*	*Zamia pygmaea* Sims	Zamiaceae	Pygmy zamia (dwarf cycad)	CR
67	*Araucaria*	*araucana*	*Araucaria araucana* (Molina) K.Koch	Araucariaceae	Monkey puzzle tree	EN
68	*Hibiscus*	*rosa-sinensis*	*Hibiscus rosa-sinensis* L.	Malvaceae	China rose	NE
69	*Ixora*	*coccinea*	*Ixora coccinea* L.	Rubiaceae	Ixora	NE
70	*Bougainvillea*	*spectabilis*	*Bougainvillea spectabilis* Willd.	Nyctaginaceae	Bougainvillea	NE
71	*Tagetes*	*erecta*	*Tagetes erecta* L.	Asteraceae	Marigold	NE
72	*Rosa*	*spp.*	*Rosa spp.*	Rosaceae	Rose	NE
73	*Codiaeum*	*variegatum*	*Codiaeum variegatum* (L.) Rumph. ex A.Juss.	Euphorbiaceae	Garden croton	NE

74	*Duranta*	*erecta*	*Duranta erecta* L.	Verbenaceae	Golden dewdrop	NE
75	*Allamanda*	*cathartica*	*Allamanda cathartica* L.	Apocynaceae	Allamanda	NE
76	*Catharanthus*	*roseus*	*Catharanthus roseus* (L.) G.Don	Apocynaceae	Periwinkle	EN
77	*Aloe*	*vera*	*Aloe vera* (L.) Burm.f.	Asphodelaceae	Aloe vera	NE
78	*Carica*	*papaya*	*Carica papaya* L.	Caricaceae	Papaya	NE
79	*Musa*	*spp.*	*Musa spp.*	Musaceae	Banana (Kol)	NE
80	*Murraya*	*koenigii*	*Murraya koenigii* (L.) Spreng.	Rutaceae	Curry leaf	NE
81	*Lagenaria*	*siceraria*	*Lagenaria siceraria* (Molina) Standl.	Cucurbitaceae	Bottle gourd	NE
82	*Capsicum*	*annuum*	*Capsicum annuum* L.	Solanaceae	Chilli	NE
83	*Mesua*	*ferrea*	*Mesua ferrea* L.	Calophyllaceae	Ceylon ironwood (Nahor)	VU
84	*Citrus*	*limon*	*Citrus limon* (L.) Osbeck	Rutaceae	Lemon (Nemu)	NE
85	*Punica*	*granatum*	*Punica granatum* L.	Lythraceae	Pomegranate (Dalim)	LC

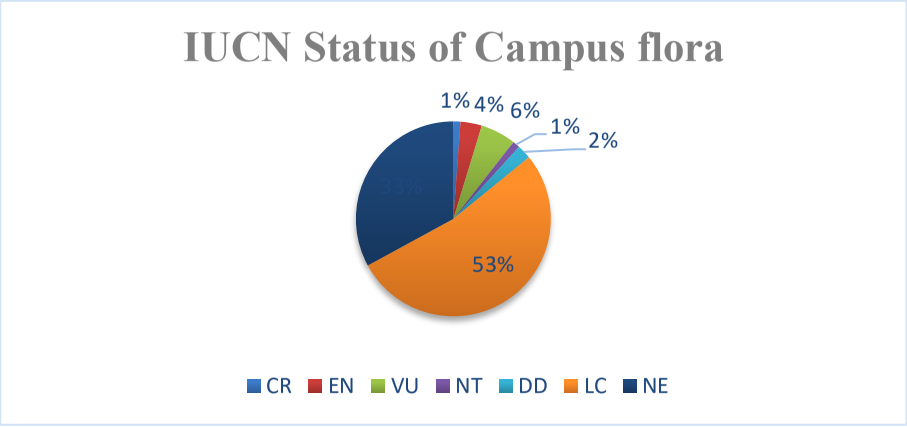


Fig 24: IUCN status of the floral species enumerated in the campus

Medicinal Plants:

Cotton University has a useful collection of medicinal plants, with ten species recorded in its medicinal garden. Neem (*Azadirachta indica*), Aloe vera (*Aloe vera*), Bael (*Aegle marmelos*) and Curry leaf (*Murraya koenigii*) are the garden's core species. Neem is used for skin care and oral hygiene, and Aloe vera soothes minor skin irritation and burns. Bael is used for digestive problems and is a Near Threatened species, which gives its presence on campus extra conservation value. Curry leaf is used traditionally for digestive health and is also a common food plant. Silikha (*Terminalia chebula*), a well-known ingredient of Ayurvedic preparations such as Triphala, is used traditionally for digestive health.

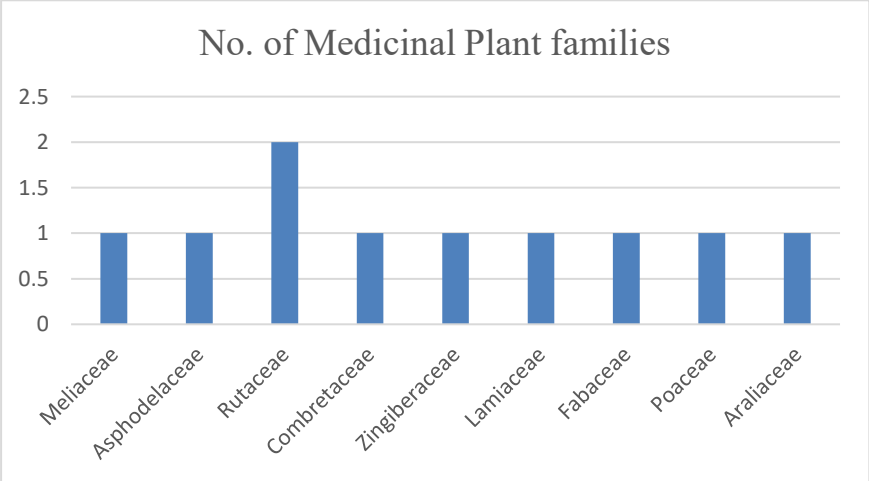


Fig 25: Families of Medicinal Plants

The garden also holds several herbs used in traditional and folk medicine. Ginger (*Zingiber officinale*) is used for cold, cough, nausea and digestive complaints. Holy basil (*Ocimum tenuiflorum*) is used for cough, cold and respiratory problems. Touch-me-not (*Mimosa pudica*) and Bermuda grass (*Cynodon dactylon*) are used in folk medicine for wounds and skin problems. Lawn marsh pennywort (*Hydrocotyle sibthorpioides*) is used for fever, cough and minor wounds. Lemongrass (*Cymbopogon citratus*) is another useful aromatic herb that grows on campus. Together these plants form a living reference for students and staff, and they support teaching and awareness of local medicinal plants.

Table 2: Details of medicinal plants available in the campus along with their medicinal values

Sl. No.	Genus	Species	Scientific Name	Family	Common Name	Primary Medicinal Value	IUCN Status
1	*Azadirachta*	*indica*	*Azadirachta indica A.Juss.*	Meliaceae	Neem	Skin care and oral hygiene	NE
2	*Aloe*	*vera*	*Aloe vera*	Asphodelaceae	Aloe vera	Soothe minor skin irritation and burns	NE
3	*Aegle*	*marmelos*	*Aegle marmelos (L.) Corrêa*	Rutaceae	Bael	Used for digestive problems	NT
4	*Murraya*	*koenigii*	*Murraya koenigii (L.) Spreng.*	Rutaceae	Curry leaf	Used traditionally for digestive health; also used as food	NE
5	*Terminalia*	*chebula*	*Terminalia chebula Retz.*	Combretaceae	Silikha / Haritaki	Traditional digestive, laxative, and antioxidant uses	LC
6	*Zingiber*	*officinale*	*Zingiber officinale Roscoe*	Zingiberaceae	Ginger	Digestive relief, anti-inflammatory, and cold/nausea remedy	NE
7	*Ocimum*	*tenuiflorum*	*Ocimum tenuiflorum L.*	Lamiaceae	Tulsi / Holy Basil	Respiratory health, immunity, stress relief, and herbal remedy	NE
8	*Mimosa*	*pudica*	*Mimosa pudica L.*	Fabaceae	Touch-me-not / Sensitive plant	Traditional wound dressing, anti-inflammatory, and herbal uses	LC
9	*Cynodon*	*dactylon*	*Cynodon dactylon (L.) Pers.*	Poaceae	Bermuda grass / Dubori	Traditional wound healing, cooling, and diuretic uses	NE
10	*Hydrocotyle*	*sibthorpioides*	*Hydrocotyle sibthorpioides Lam.*	Araliaceae	Lawn marshpennywort	Traditional herbal remedy for inflammation, liver, and skin care	NE

Fig 5: No. of species in each medicinal plant family

Vegetable, Crops and Fruit Yielding Plants:

The campus vegetable and crop inventory comprises four genera distributed evenly across four distinct plant families, totalling 70 individual plants. These include *Musa* in Musaceae (25 plants), *Capsicum* in Solanaceae (20 plants), *Lagenaria* in Cucurbitaceae (15 plants), and *Carica* in Caricaceae (10 plants). Each family in this section is represented by a single genus, reflecting a focused selection of commonly cultivated food and garden crops maintained on the campus.

In contrast, the fruit-yielding plant collection spans sixteen genera across fourteen plant families, totalling 171 individual plants. Two families—Moraceae and Myrtaceae—are represented by two genera each, namely *Artocarpus* (20 plants) and *Ficus* (25 plants across six entries) in Moraceae, and *Syzygium* (15 plants) and *Psidium* (10 plants) in Myrtaceae, while Anacardiaceae also includes two genera, *Mangifera* (15 plants) and *Spondias* (8 plants). The remaining eleven families are each represented by a single genus: *Dillenia* in Dilleniaceae (25 plants), *Averrhoa* in Oxalidaceae (10 plants), *Mimusops* in Sapotaceae (9 plants), *Cocos* in Arecaceae (8 plants), *Samanea* in Fabaceae (6 plants), *Terminalia* in Combretaceae (5 plants), *Ziziphus* in Rhamnaceae (5 plants), *Aegle* in Rutaceae (5 plants), *Bombax* in Malvaceae (3 plants), and *Putranjiva* in Putranjivaceae (2 plants).

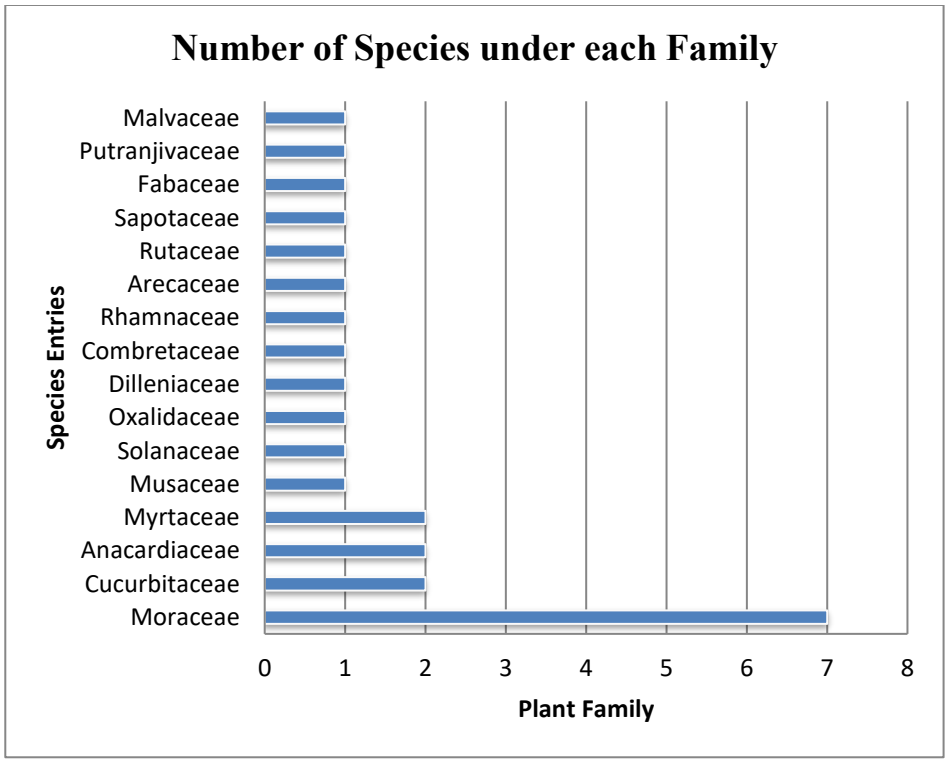


Fig 26: Vegetable, Crops and Fruit Yielding Plants Summary

Table 15: Details of ornamental plants available in the campus					
Vegetable and Crop Plants					
Sl. No.	**Genus**	**Species**	**Scientific Name**	**Family**	**Common Name**
1	*Carica*	*papaya*	*Carica papaya L.*	Caricaceae	Papaya
2	*Musa*	*spp.*	*Musa L.*	Musaceae	Kol
3	*Lagenaria*	*siceraria*	*Lagenaria siceraria (Molina) Standl.*	Cucurbitaceae	Bottle gourd
4	*Capsicum*	*annuum*	*Capsicum annuum L.*	Solanaceae	Chilli
Fruit Yielding Plants					
Sl. No.	**Genus**	**Species**	**Scientific Name**	**Family**	**Common Name**
1	*Averrhoa*	*carambola*	*Averrhoa carambola L.*	Oxalidaceae	Kordoi
2	*Artocarpus*	*heterophyllus*	*Artocarpus heterophyllus Lam.*	Moraceae	Kathal
3	*Dillenia*	*indica*	*Dillenia indica L.*	Dilleniaceae	Outenga
4	*Mangifera*	*indica*	*Mangifera indica L.*	Anacardiaceae	Aam
5	*Syzygium*	*cumini*	*Syzygium cumini (L.) Skeels*	Myrtaceae	Jamu
6	*Ficus*	*racemosa*	*Ficus racemosa L.*	Moraceae	
7	*Ficus*	*benghalensis*	*Ficus benghalensis L.*	Moraceae	
8	*Ficus*	*religiosa*	*Ficus religiosa L.*	Moraceae	Aahot
9	*Ficus*	*rumphii*	*Ficus rumphii Blume*	Moraceae	
10	*Ficus*	*tinctoria*	*Ficus tinctoria G.Forst.*	Moraceae	
11	*Ficus*	*elastica*	*Ficus elastica Roxb. ex Hornem.*	Moraceae	Rubber
12	*Psidium*	*guajava*	*Psidium guajava L.*	Myrtaceae	Modhuriaam
13	*Spondias*	*pinnata*	*Spondias pinnata (L.f.) Kurz*	Anacardiaceae	Omora

14	*Terminalia*	*chebula*	*Terminalia chebula Retz.*	Combretaceae	Xilikha
15	*Ziziphus*	*mauritiana*	*Ziziphus mauritiana Lam.*	Rhamnaceae	Bogori
16	*Cocos*	*nucifera*	*Cocos nucifera L.*	Arecaceae	Narikol
17	*Aegle*	*marmelos*	*Aegle marmelos (L.) Corrêa*	Rutaceae	Bel
18	*Mimusops*	*elengi*	*Mimusops elengi L.*	Sapotaceae	Bokul
19	*Samanea*	*saman*	*Samanea saman (Jacq.) Merr.*	Fabaceae	Rain tree
20	*Putranjiva*	*roxburghii*	*Putranjiva roxburghii Wall.*	Putranjivaceae	Putranjiva
21	*Bombax*	*ceiba*	*Bombax ceiba L.*	Malvaceae	Ximolu

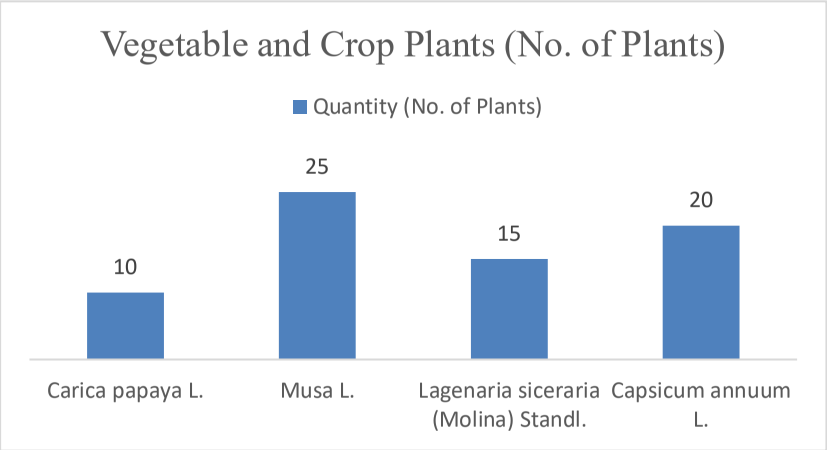


Fig 27: Species wise No. of Vegetable and Crop Plants

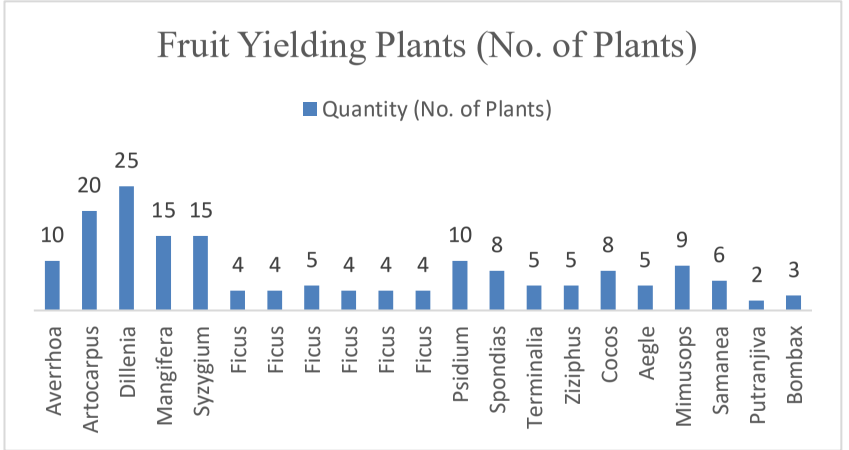


Fig 88: Species wise No. Fruit Yielding Plants

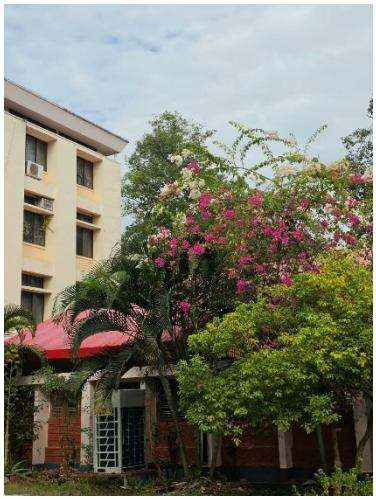
Fig 29: Floral species of Cotton University



Cocos nucifera L.



Nyctanthes arbor-tristis L.



Bougainvillea



Litchi chinensis



Araucaria araucana



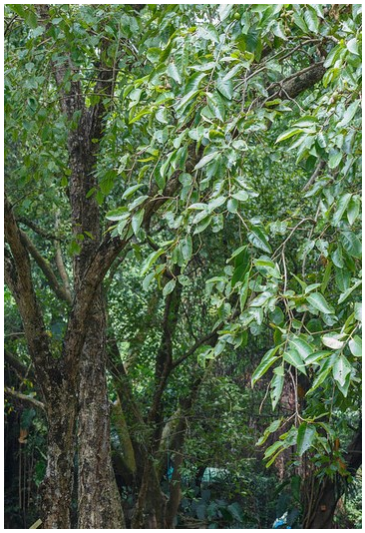
Zamia pygmaea Sims



Monochoria hastata



Psidium guajava



Terminalia chebula

7.3 Campus Fauna

The campus supports a diverse fauna, with 102 species recorded in 88 genera and 45 families. The audit covers mammals, birds and butterflies. The mammals are the Hoary-bellied Himalayan Squirrel (*Callosciurus pygerythrus*), the House Rat, the House Mouse and the Fruit Bat (*Cynopterus sphinx*), along with the domestic cat and dog. The mature fruiting trees feed the squirrels, which nest in tree forks and dense foliage, and they also attract fruit bats. The campus has no pond, so no fish were recorded.

Birds are the most visible group, with 57 species in 50 genera and 35 families. Common residents include the Red-vented Bulbul, Oriental Magpie-Robin, Common Tailorbird, Common Myna, Asian Koel, Spotted Dove and House Crow. The canopy and flowering plants give food, shelter and safe nesting sites, which makes the campus a breeding place for several species. Other records include barbets, woodpeckers, owls such as the Barn Owl and Collared Scops-Owl, sunbirds and the Peregrine Falcon. Winter visitors such as the Brown Shrike, Taiga Flycatcher and Greenish Warbler also appear. Nearly all species are Least Concern, but the Lesser Adjutant is Vulnerable and the Red-breasted Parakeet is Near Threatened (the document lists it as Least Concern), which shows the campus's value as an urban refuge in Guwahati.

Butterflies add colour, with 39 species in 32 genera and five families: Hesperiidae, Lycaenidae, Nymphalidae, Papilionidae and Pieridae. Species include the Common Mormon, Plain Tiger, Leopard Lacewing, Common Jezebel, Common Crow and several grass blues. They feed on the campus's flowering shrubs and trees. Most of these butterflies have not been assessed on the IUCN Red List, so their status is shown as Not Evaluated. The institution's nature or eco club runs tree walks, butterfly walks, campus bird counts and behavioural ecology observations to document this fauna. The campus plans to leave wild patches, avoid heavy pruning during the nesting season and plant more native species to support its wildlife.

Table 16: Faunal diversity of the campus

Mammals						
Sl. No.	**Genus**	**Species**	**Scientific Name**	**Family**	**Common Name**	**IUCN Status**
1	*Callosciurus*	*pygerythrus*	*Callosciurus pygerythrus*	Sciuridae	Hoary-bellied Himalayan squirrel	LC
2	*Felis*	*catus*	*Felis catus*	Felidae	Domestic cat	NE
3	*Canis*	*lupus familiaris*	*Canis lupus familiaris*	Canidae	Domestic dog	NE
4	*Rattus*	*rattus*	*Rattus rattus*	Muridae	House rat	LC
5	*Mus*	*musculus*	*Mus musculus*	Muridae	House mouse	LC
6	*Cynopterus*	*sphinx*	*Cynopterus sphinx*	Pteropodidae	Fruit Bat	LC
Birds						
Sl. No.	**Genus**	**Species**	**Scientific Name**	**Family**	**Common Name**	**IUCN Status**
1	*Corvus*	*splendens*	*Corvus splendens*	Corvidae	House Crow	LC
2	*Gracupica*	*contra*	*Gracupica contra*	Sturnidae	Asian Pied Starling	NE
3	*Milvus*	*migrans*	*Milvus migrans*	Accipitridae	Black Kite	NE
4	*Psittacula*	*krameri*	*Psittacula krameri*	Psittaculidae	Rose-ringed Parakeet	LC
5	*Acridotheres*	*tristis*	*Acridotheres tristis*	Sturnidae	Common Myna	LC
6	*Microcarbo*	*niger*	*Microcarbo niger*	Phalacrocoracidae	Little Cormorant	LC
7	*Cypsiurus*	*balasiensis*	*Cypsiurus balasiensis*	Apodidae	Asian Palm Swift	LC
8	*Columba*	*livia*	*Columba livia*	Columbidae	Rock Pigeon	LC
9	*Acridotheres*	*fuscus*	*Acridotheres fuscus*	Sturnidae	Jungle Myna	LC

10	*Bubulcus*	*ibis*	*Bubulcus ibis*	Ardeidae	Western Cattle Egret	LC
11	*Psittacula*	*alexandri*	*Psittacula alexandri*	Psittaculidae	Red-breasted Parakeet	LC
12	*Falco*	*peregrinus*	*Falco peregrinus*	Falconidae	Peregrine Falcon	LC
13	*Culicicapa*	*ceylonensis*	*Culicicapa ceylonensis*	Stenostiridae	Grey-headed Canary-Flycatcher	LC
14	*Hirundo*	*rustica*	*Hirundo rustica*	Hirundinidae	Barn Swallow	LC
15	*Pycnonotus*	*cafer*	*Pycnonotus cafer*	Pycnonotidae	Red-vented Bulbul	LC
16	*Passer*	*domesticus*	*Passer domesticus*	Passeridae	House Sparrow	LC
17	*Eudynamys*	*scolopaceus*	*Eudynamys scolopaceus*	Cuculidae	Asian Koel	LC
18	*Halcyon*	*smyrnensis*	*Halcyon smyrnensis*	Alcedinidae	White-throated Kingfisher	LC
19	*Merops*	*orientalis*	*Merops orientalis*	Meropidae	Green Bee-eater	LC
20	*Upupa*	*epops*	*Upupa epops*	Upupidae	Eurasian Hoopoe	LC
21	*Dicrurus*	*macrocercus*	*Dicrurus macrocercus*	Dicruridae	Black Drongo	LC
22	*Dendrocitta*	*vagabunda*	*Dendrocitta vagabunda*	Corvidae	Rufous Treepie	LC
23	*Zosterops*	*palpebrosus*	*Zosterops palpebrosus*	Zosteropidae	Indian White-eye	LC
24	*Lonchura*	*punctulata*	*Lonchura punctulata*	Estrildidae	Scaly-breasted Munia	LC
25	*Orthotomus*	*sutorius*	*Orthotomus sutorius*	Cisticolidae	Common Tailorbird	LC
26	*Otus*	*lettia*	*Otus lettia*	Strigidae	Collared Scops-Owl	LC
27	*Aegithina*	*tiphia*	*Aegithina tiphia*	Aegithinidae	Common Iora	LC
28	*Oriolus*	*chinensis*	*Oriolus chinensis*	Oriolidae	Black-naped Oriole	LC

29	*Ninox*	*scutulata*	*Ninox scutulata*	Strigidae	Brown Boobook	LC
30	*Glaucidium*	*cuculoides*	*Glaucidium cuculoides*	Strigidae	Asian Barred Owlet	LC
31	*Psilopogon*	*haemacephalus*	*Psilopogon haemacephalus*	Megalaimidae	Coppersmith Barbet	LC
32	*Corvus*	*macrorhynchos*	*Corvus macrorhynchos*	Corvidae	Large-billed Crow	LC
33	*Sturnia*	*malabarica*	*Sturnia malabarica*	Sturnidae	Chestnut-tailed Starling	LC
34	*Parus*	*cinereus*	*Parus cinereus*	Paridae	Cinereous Tit	LC
35	*Psilopogon*	*lineatus*	*Psilopogon lineatus*	Megalaimidae	Lineated Barbet	LC
36	*Dendrocopos*	*macei*	*Dendrocopos macei*	Picidae	Fulvous-breasted Woodpecker	LC
37	*Tyto*	*alba*	*Tyto alba*	Tytonidae	Barn Owl	LC
38	*Ardeola*	*grayii*	*Ardeola grayii*	Ardeidae	Indian Pond-Heron	LC
39	*Phylloscopus*	*trochiloides*	*Phylloscopus trochiloides*	Phylloscopidae	Greenish Warbler	LC
40	*Copsychus*	*saularis*	*Copsychus saularis*	Muscicapidae	Oriental Magpie-Robin	LC
41	*Cinnyris*	*asiaticus*	*Cinnyris asiaticus*	Nectariniidae	Purple Sunbird	LC
42	*Micropternus*	*brachyurus*	*Micropternus brachyurus*	Picidae	Rufous Woodpecker	LC
43	*Spilopelia*	*chinensis*	*Spilopelia chinensis*	Columbidae	Spotted Dove	LC
44	*Psilopogon*	*asiaticus*	*Psilopogon asiaticus*	Megalaimidae	Blue-throated Barbet	LC
45	*Lanius*	*cristatus*	*Lanius cristatus*	Laniidae	Brown Shrike	LC
46	*Lanius*	*tephronotus*	*Lanius tephronotus*	Laniidae	Grey-backed Shrike	LC
47	*Ficedula*	*albicilla*	*Ficedula albicilla*	Muscicapidae	Taiga Flycatcher	LC

48	*Hierococcyx*	*varius*	*Hierococcyx varius*	Cuculidae	Common Hawk-Cuckoo	LC
49	*Motacilla*	*alba*	*Motacilla alba*	Motacillidae	White Wagtail	LC
50	*Treronphoenicopterus*		*Treronphoenicopterus*	Columbidae	Yellow-footed Green-Pigeon	NE
51	*Passer*	*montanus*	*Passer montanus*	Passeridae	Eurasian Tree Sparrow	LC
52	*Pernis*	*ptilorhynchus*	*Pernis ptilorhynchus*	Accipitridae	Oriental Honey-Buzzard	LC
53	*Nycticorax*	*nycticorax*	*Nycticorax nycticorax*	Ardeidae	Black-crowned Night-Heron	LC
54	*Anastomus*	*oscitans*	*Anastomus oscitans*	Ciconiidae	Asian Openbill Stork	LC
55	*Ardea*	*intermedia*	*Ardea intermedia*	Ardeidae	Intermediate Egret	LC
56	*Leptoptilos*	*javanicus*	*Leptoptilos javanicus*	Ciconiidae	Lesser Adjutant	VU
57	*Amaurornis*	*phoenicurus*	*Amaurornis phoenicurus*	Rallidae	White-breasted Waterhen	LC

Butterflies						
Sl. No.	**Genus**	**Species**	**Scientific Name**	**Family**	**Common Name**	**IUCN Status**
1	*Suastus*	*gremius*	*Suastus gremius*	Hesperiidae	Common Palm Bob	LC
2	*Tagiades*	*japetus*	*Tagiades japetus*	Hesperiidae	Common Snow Flat	LC
3	*Pseudocoladenia*	*dan*	*Pseudocoladenia dan*	Hesperiidae	Fulvous Pied Flat	LC
4	*Spalgis*	*epius*	*Spalgis epius*	Lycaenidae	Ape Fly	LC
5	*Jamides*	*bochus*	*Jamides bochus*	Lycaenidae	Dark Cerulean	LC
6	*Zizeeria*	*karsandra*	*Zizeeria karsandra*	Lycaenidae	Dark Grass Blue	LC
7	*Catochrysops*	*strabo*	*Catochrysops strabo*	Lycaenidae	Forget Me Not	LC
8	*Zizina*	*otis*	*Zizina otis*	Lycaenidae	Lesser Grass Blue	LC
9	*Pseudozizeeria*	*maha*	*Pseudozizeeria maha*	Lycaenidae	Pale Grass Blue	LC
10	*Tarucus*	*nara*	*Tarucus nara*	Lycaenidae	Striped Pierrot	LC
11	*Castalius*	*rosimon*	*Castalius rosimon*	Lycaenidae	Common Pierrot	LC
12	*Leptotes*	*plinius*	*Leptotes plinius*	Lycaenidae	Zebra Blue	LC
13	*Kaniska*	*canace*	*Kaniska canace*	Nymphalidae	Blue Admiral	LC
14	*Moduza*	*procris*	*Moduza procris*	Nymphalidae	Commander	LC
15	*Euthalia*	*aconthea*	*Euthalia aconthea*	Nymphalidae	Common Baron	LC
16	*Ariadne*	*merione*	*Ariadne merione*	Nymphalidae	Common Castor	LC
17	*Euploea*	*core*	*Euploea core*	Nymphalidae	Common Crow	LC
18	*Melanitis*	*leda*	*Melanitis leda*	Nymphalidae	Common Evening Brown	LC
19	*Pantoporia*	*hordonia*	*Pantoporia hordonia*	Nymphalidae	Common Lascar	LC

20	*Elymnias*	*hypermnestra*	*Elymnias hypermnestra*	Nymphalidae	Common Palmfly	LC
21	*Neptis*	*hylas*	*Neptis hylas*	Nymphalidae	Common Sailor	LC
22	*Junonia*	*atlites*	*Junonia atlites*	Nymphalidae	Grey Pansy	LC
23	*Junonia*	*lemonias*	*Junonia lemonias*	Nymphalidae	Lemon Pansy	LC
24	*Cethosia*	*cyane*	*Cethosia cyane*	Nymphalidae	Leopard Lacewing	LC
25	*Junonia*	*almana*	*Junonia almana*	Nymphalidae	Peacock Pansy	LC
26	*Danaus*	*chrysippus*	*Danaus chrysippus*	Nymphalidae	Plain Tiger	LC
27	*Papilio*	*clytia*	*Papilio clytia*	Papilionidae	Common Mime	LC
28	*Graphium*	*doson*	*Graphium doson*	Papilionidae	Common Jay	LC
29	*Papilio*	*polytes*	*Papilio polytes*	Papilionidae	Common Mormon	LC
30	*Papilio*	*demoleus*	*Papilio demoleus*	Papilionidae	Lime Butterfly	LC
31	*Papilio*	*helenus*	*Papilio helenus*	Papilionidae	Red Helen	LC
32	*Delias*	*eucharis*	*Delias eucharis*	Pieridae	Common Jezebel	LC
33	*Appias*	*olferna*	*Appias olferna*	Pieridae	Eastern Striped Albatross	LC
34	*Pieris*	*brassicae*	*Pieris brassicae*	Pieridae	Large Cabbage White	LC
35	*Catopsilia*	*pomona*	*Catopsilia pomona*	Pieridae	Lemon Emigrant	LC
36	*Catopsilia*	*pyranthe*	*Catopsilia pyranthe*	Pieridae	Mottled Emigrant	LC
37	*Leptosia*	*nina*	*Leptosia nina*	Pieridae	Psyche	LC
38	*Eurema*	*brigitta*	*Eurema brigitta*	Pieridae	Small Grass Yellow	LC
39	*Delias*	*descombesi*	*Delias descombesi*	Pieridae	Red Spot Jezebel	LC

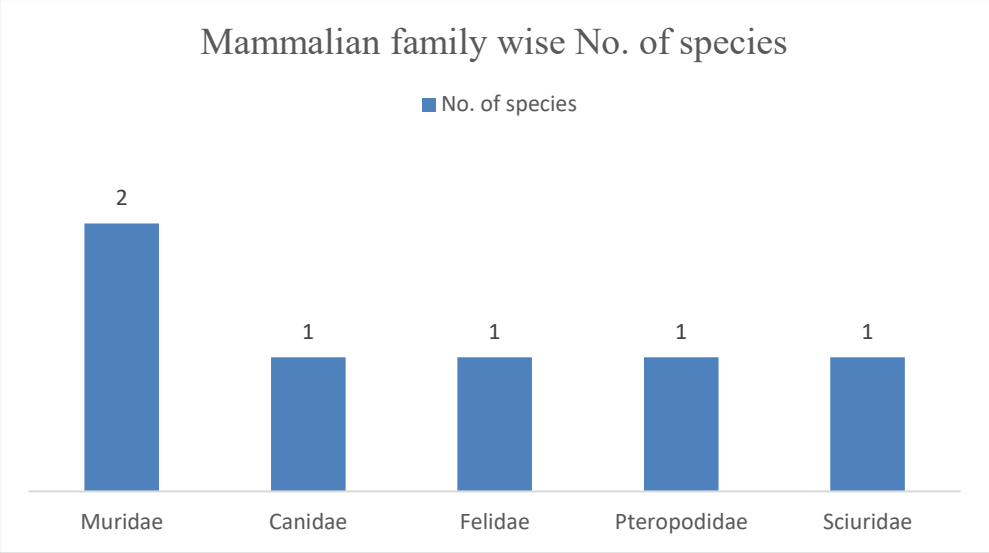


Fig 30**:** Familywise no. of mammalian species of the university

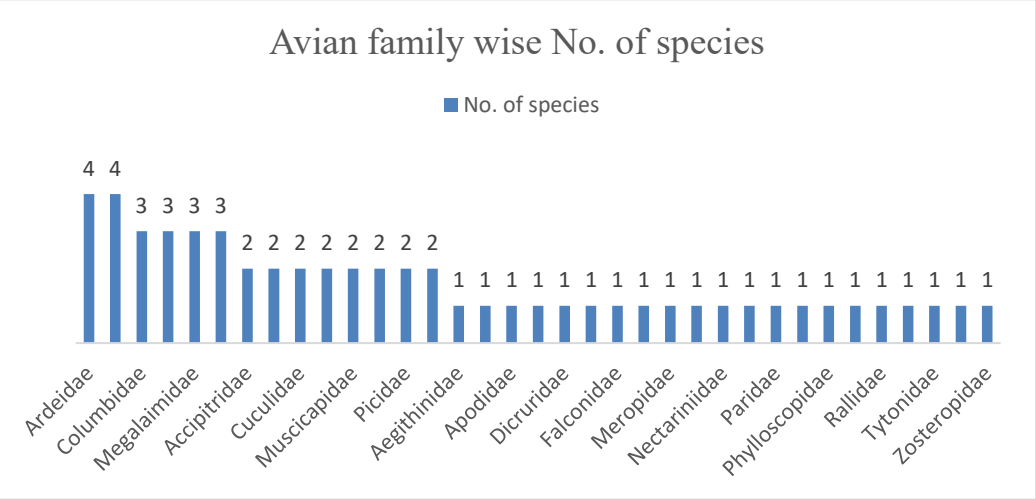


Fig 31: Familywise no. of avian species of the university

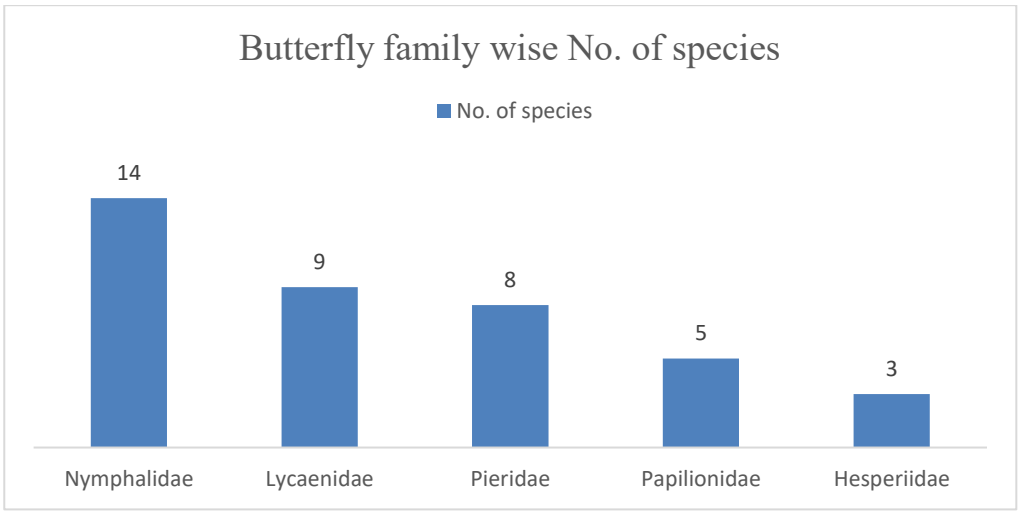


Fig 32: Familywise no. of butterfly species of the university



Felis catus



Canis lupus famliliaris



Cynopterus sphinx



Acridotheres tristis



Corvus splendens



Dicrurus macrocercus



Papilio polyte



Papilio demoleus



Catopsilia pomona

Fig 33: Some faunal species found in and around the campus

CHAPTER 8:

BEST PRACTICES PERTAINING TO GREEN CAMPUS

Cotton University integrates ecological stewardship, scientific waste management, water conservation, and participatory biodiversity monitoring into its daily academic and residential operations. Situated within the commercial heart of Panbazar, Guwahati, the institution uses its 24.9-acre campus footprint and academic expertise across 33 departments to model sustainable urban campus practices in Northeast India.

8.1 Plantation

Plantation is one of the most visible green practices of Cotton University, and it reaches beyond the campus boundary. Between July and September 2021, the university distributed more than 9,000 lemon saplings and 600 saplings of over 30 fruit-tree species to about 1,000 beneficiaries. They live in five adopted villages (Keotpara, Kalitapara, Satargaon, Nij Panbari and Hajongbori) and in one non-adopted village, Patgaon. The plantations are expected to give villagers an additional income. In Hajongbori, Nij Panbari and Satargaon they are also expected to help protect against wild elephants.



Fig 34: Distribution of citrus plant saplings

Within the campus, plantation is an institutional habit rather than a one-time event. Drives are held on symbolic days, including World Environment Day on 5 June 2022 and Foundation Day on 27 May 2025, when 125 saplings were planted. Students, teaching staff and non-teaching staff all take part. Students have planted Amla, Nahor, Gulmohar, Mango and Guava, teaching staff have planted Neem, Lemon, Guava, Mango, Pomegranate and Jamun, and non-teaching

staff have planted fruit trees as well as ornamental shrubs. Because the planting is spread across the whole university community, the green cover is a shared responsibility.



Fig 35: Snippets of plantation drives

8.2 Thematic Gardens

The campus has several thematic gardens that serve beauty, learning and conservation at the same time. It has a botanical garden, a medicinal garden and an ornamental plants garden, and some departments also keep their own gardens.

The Department of Botany maintains a dedicated, shaded **Gallery of Pteridophytes** featuring a diverse assemblage of terrestrial and epiphytic ferns cultivated in terracotta pots on tiered display stands. As non-flowering, spore-bearing vascular plants (*Pteridophyta*), these ferns serve as an important ex-situ conservation display and an accessible living laboratory for undergraduate and postgraduate students studying plant taxonomy, morphology, and evolutionary botany.



Fig 36: Thematics gardens in the Botany Department

The campus also maintains a dedicated **Gymnosperm Garden** housing living naked-seed plant specimens, including conservation-priority taxa such as *Ginkgo biloba* alongside cycads and conifers, to support taxonomic instruction, comparative morphology, and ex-situ conservation on campus.

The medicinal garden is a particularly useful teaching resource. It holds ten species: Neem, Aloe vera, Bael, Curry leaf, Silikha, Ginger, Holy basil, Touch-me-not, Bermuda grass and Lawn marsh pennywort.

8.3 Bird Survey and Bird Conservation

The campus eco club runs regular nature activities, including tree walks, butterfly walks, campus bird counts and behavioural ecology observations. The bird counts have documented 57 bird species in 35 families, along with 39 butterfly species and several mammals. The commonest residents are the Red-vented Bulbul, Oriental Magpie-Robin, Common Tailorbird, Common Myna, Asian Koel, Spotted Dove and House Crow. Barbets, woodpeckers, owls, sunbirds and the Peregrine Falcon also occur, and winter visitors such as the Brown Shrike, Taiga Flycatcher and Greenish Warbler are recorded too. Nearly all are Least Concern, but the Lesser Adjutant is Vulnerable, which shows the campus's value as an urban refuge.

The survey rests on habitat that the university deliberately protects. Mature trees, dense canopy and flowering plants provide food, shelter and safe nesting sites, and the campus is a breeding place for several species. Fruiting trees also feed squirrels, which nest in tree forks and dense foliage. Cotton University has taken part in the TERI and ONGC TERI Biotech Campus Impact Challenge with a project titled "Protecting the Bird Species of Cotton Campus", which shows that bird conservation is also run as a student-led initiative. The university has signed a five-year MoU with the biodiversity organisation Aaranyak, which supports research and conservation collaboration.

8.4 Water Testing and Waste Water Treatment

The campus has a chemical waste water treatment plant. It treats chemical waste water generated on campus so that it is not discharged untreated into drains or soil, which reduces the risk of pollution to groundwater and to the trees and gardens. The campus's open areas, with their tree cover and soil, also let rainwater percolate into the ground, so natural recharge supports the formal treatment of waste water.

The campus also has rainwater harvesting units, which collect rainwater and help to recharge groundwater and reduce runoff during the monsoon. They support the university's water conservation effort and show students a practical way of saving water. One unit, in the Botany Department, is not functioning properly at present, so repairing and maintaining it before the next rainy season would help the whole system work as intended.

8.5 Solar Lighting and Air Quality Monitoring

The campus uses solar street lights in some outdoor areas. They run on renewable energy, reduce the use of grid electricity for outdoor lighting and show students and visitors a practical clean-energy measure in daily use.

An ambient air quality monitoring station on the campus is operated by the Assam Pollution Control Board (APCB). It records the quality of the air in the heart of Guwahati, and it gives the university access to real data on local air quality that can support teaching, research and planning. The campus's trees and gardens add to this.



Fig. 36: Ambient Air Quality Monitoring Station

8.6 Behavioural Water and Energy Conservation Signages

Cotton University reinforces sustainable campus habits through visible, point-of-use behavioural signage placed directly beside everyday utilities, pairing *"Save Water – Don't Waste It / Turn Off Taps After Use"* reminders on drinking water dispensers with *"Please Switch Off Light & Fan When Not In Use- Save Energy"* notices mounted beside fan regulators and switchboards.

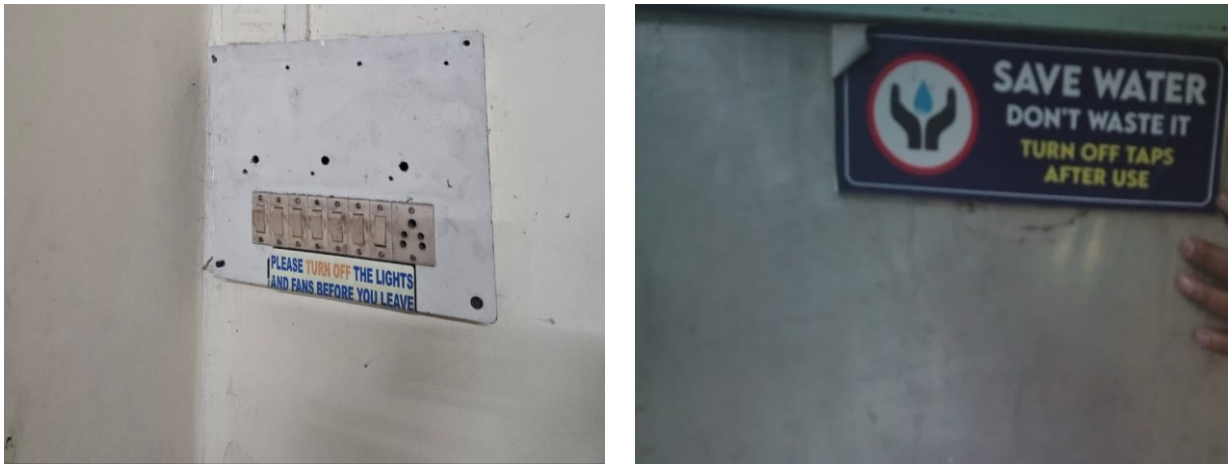


Fig 37: Signages for energy and water conservation

8.7 Waste Management and Biogas Plant

Dustbins are placed across the campus, which makes it easy for students, staff and visitors to dispose of waste properly and keeps the tree-lined pathways, gardens and sitting areas clean. The campus also has a biogas plant in the Nalini Bala devi Girls' Hostel with a stove connected to it. A plant of this kind turns organic waste into cooking fuel, which makes it a useful link between waste management and clean energy. The facility is not fully functional at present, so restoring it is a clear opportunity to put organic waste to use and reduce reliance on conventional fuel.



Fig 38: Biogas treatment plant in Girls' Hostel

CHAPTER 9:

RECOMMENDATION

Based on the observations and findings of the Green Audit, a set of recommendations has been formulated to strengthen the environmental management practices of Cotton University. The recommendations are presented under three key areas-Water Management, Waste Management and Biodiversity Conservation-with a focus on improving resource efficiency, minimising environmental impacts and promoting long-term campus sustainability.

9.1 Waste

The University has identified several measures for strengthening its waste management system and progressing towards the goal of zero garbage on campus. These include:

- **Waste Monitoring and Segregation:** Establish regular monitoring and documentation of the quantity and categories of waste generated. Strengthen segregation at source through proper separation of biodegradable, recyclable and non-recyclable waste.
- **Waste Minimisation and Plastic Reduction:** Promote paper reuse, recycling and digital communication to minimise paper consumption. Strengthen measures to eliminate single-use plastics. Although the campus has reported itself as plastic-free, there is scope of improvement in terms of its implementation and monitoring.



Fig. 39. Plastic free signage at the campus



Fig. 40. Small plastic articles at the campus

- **Organic Waste Management:** Promote composting and vermicomposting of food waste, fallen leaves and garden waste. Revive existing vermicomposting units and ensure their regular operation. Encourage measures to minimise food wastage in canteens and hostels.
- **Resource Recovery and Reuse:** Encourage the reuse of furniture and other usable materials and ensure systematic collection and channelisation of recyclable materials for appropriate recycling.
- **Wastewater and Biogas Management:** Ensure effective operation and maintenance of the existing biogas plant in the Girls' Hostel. Strengthen wastewater treatment through effective operation of the STP, ETP and constructed wetlands, wherever applicable.
- **Awareness and Institutional Participation:** Organise regular cleanliness drives, workshops, poster campaigns and student-led awareness programmes to promote responsible waste management practices across the campus.

9.2 Water

The University has identified several measures for strengthening its waste management system and progressing towards the goal of zero garbage on campus. These include:

- **Water Monitoring and Management:** Establish regular monitoring and documentation of water consumption and storage levels to assess water-use patterns and improve overall water management.
- **Inspection and Maintenance:** Conduct periodic inspections of taps, pipelines and storage tanks to identify leakages and overflow. Ensure timely repair and maintenance to minimise water loss.
- **Water-Efficient Fixtures:** Promote the installation of sensor-based taps and other water-efficient devices to minimise unnecessary water flow and wastage.
- **Awareness and Responsible Water Use:** Organise awareness programmes and utilise posters, signboards and digital communication to encourage responsible water-use practices among students, faculty and other campus stakeholders.
- **Rainwater Harvesting:** Strengthen rainwater harvesting initiatives across the campus. Considering the extensive campus area and the number of buildings, there is considerable

scope for installing and expanding **rooftop rainwater harvesting systems** across individual buildings.

- **Laboratory Wastewater Management:** Ensure effective operation and regular maintenance of the existing laboratory wastewater treatment facility in the Chemistry Department for appropriate treatment and disposal of laboratory effluents.
- **Wastewater Reuse:** Explore opportunities for reuse of treated wastewater for gardening, landscaping and other non-potable purposes, thereby reducing dependence on freshwater sources.
- **Periodic Water Quality Assessment**: Undertake periodic and comprehensive testing of groundwater and drinking water sources to monitor key water quality parameters, including arsenic, fluoride and other relevant physical, chemical and microbiological contaminants, to ensure water safety.

9.3 Biodiversity

- **Strengthening Indigenous Flora:** Greater emphasis may be placed on conserving and introducing native fruit-bearing species that are characteristic of the region. Plants such as *Baccaurea ramiflora* (লেটেকু), *Flacourtia jangomas* (পনিয়ল), *Averrhoa carambola* (কৰ্দৈ), etc., along with other indigenous species according to the agro climatic zone of Kamrup (M) district can be incorporated into future plantation programmes. A list of suggested plants is attached **as Annexure III**. This would contribute towards strengthening the native floral composition and ecological character of the campus.
- **Community Plantation Drives for Participatory Afforestation:** The University can organise regular community-based plantation drives involving students, faculty members, non-teaching staff, local residents, alumni, and other community stakeholders. Rather than limiting plantation activities to ceremonial occasions, such drives should focus on long-term establishment and survival of planted trees. Indigenous, fruit-bearing, shade-providing, and ecologically suitable species may be prioritised. The University can also adopt a system of tree stewardship, wherein groups of students or community members take responsibility for watering, mulching, protection, and monitoring of planted saplings. Such participatory afforestation programmes would strengthen community ownership of

environmental conservation and contribute to increasing green cover beyond the immediate campus.

- **Maintenance of thematic gardens:** Several gardens were observed across the campus; however, regular maintenance and proper upkeep are required, particularly for the Orchidarium and Pteridophyte Garden, to ensure the conservation, healthy growth and long-term sustainability of the plant collections.



Fig. 41: Pteridophyte gallery


Fig. 42: Orchidarium (non-functional)


Fig. 43: Aquatic plant reservoir

- **Institutionalising Environmental Management through an EMS:** An **Environmental Management System (EMS)** may be constituted to coordinate, monitor, and review the institution's environmental activities. It can function as an internal mechanism for environmental monitoring and documentation and provide support during future external audits. Participation of faculty members, non-teaching personnel, and students as members or volunteers would promote collective ownership of environmental responsibilities.
- **Development of a Pollinator-Friendly Campus:** In addition to the proposed butterfly garden, the University may gradually develop a broader **pollinator-friendly landscape** by incorporating nectar-rich flowering plants, host plants, and pesticide-free garden management practices. The initiative can support butterflies, bees, moths, hoverflies, and other pollinating organisms. Students can periodically document pollinator diversity and seasonal changes as part of Eco Club or academic activities.
- **Improving Plant Identification and Labelling:** The existing plant identification system should be reviewed and upgraded, as some trees and plants were found to have incorrect or inadequate tags during the audit. Durable and uniform nameplates displaying the

scientific and local names of each species should be installed. Where practicable, taxonomic information such as family, genus, and species may also be incorporated.

- **Preparation and Maintenance of a University Biodiversity Register:** A comprehensive **University Biodiversity Register** should be developed to record the plant and animal species occurring within the campus and its surrounding areas. The register can include species identification, photographs, local names, ecological information, and other relevant observations. Annual updating of the register would help track changes in campus biodiversity. Maintaining a copy in the University library and gradually developing a digital version would further enhance its educational value and accessibility.

CHAPTER 10:

CONCLUSION:

The Green Audit of Cotton University, Guwahati, provides an overview of the institution's existing environmental practices, infrastructure and initiatives in the areas of water management, waste management and biodiversity conservation. The assessment highlights several positive efforts undertaken by the University towards promoting environmental sustainability, including water conservation measures, waste segregation and recycling initiatives, laboratory effluent treatment, organic waste management and the maintenance of diverse green spaces within the campus.

Despite being situated in the heart of Guwahati city, Cotton University retains considerable biodiversity, with a variety of trees, shrubs, ornamental plants and specialised gardens contributing to its ecological value. The presence of the Orchidarium and Pteridophyte Garden further reflects the University's potential as an important urban biodiversity repository. However, regular maintenance and scientific management of these gardens, along with increased plantation in available open spaces and across academic and hostel premises, would further enhance the campus's green cover and ecological significance.

The audit also indicates scope for strengthening existing water and waste management practices through improved monitoring, resource efficiency, wastewater treatment and recycling mechanisms. Particular emphasis needs to be placed on systematic waste segregation, organic waste processing and resource recovery, with a long-term vision of transforming the University into a **zero-waste campus**.

It is important to recognise that a Green Audit is not a one-time assessment but a continuous exercise that requires periodic evaluation, monitoring and improvement. The observations and recommendations presented in this report may serve as a basis for future environmental planning and institutional action. In addition, conducting a comprehensive Energy Audit is recommended to assess energy consumption patterns, identify opportunities for energy efficiency and explore the integration of renewable energy solutions.

Overall, with sustained institutional commitment, active participation of students and faculty, and the systematic implementation of the recommendations, Cotton University has considerable potential to strengthen its environmental performance and emerge as a model of sustainable campus management among higher educational institutions in Assam.

Water Quality Report of Drinking Water sources, Cotton University Campus
(Tested in Dept. of EBWS, Cotton University)

PARAMETERS	MEAN ± SD
pH	7.53 ± 0.43
TOTAL HARDNESS (mg/L)	128 ± 22.80
ALKALINITY (mg/L)	40.4 ± 2.97
CHLORIDE (mg/L)	13.62 ± 2.38
TURBIDITY (NTU)	17.01 ± 3.74
CONUCTIVITY (µs/cm)	0.16 ± 0.01
TDS (ppm)	96.2 ± 3.42

Soil Analysis Report, Cotton University Campus
(Tested in Dept. of EBWS, Cotton University)

Parameter	MEAN ± SD
pH	5.86 ± 0.08
SOC (%)	0.92 ± 0.25
Nitrate (ppm)	18.500 ± 2.69
Phosphate (ppm)	17.180 ± 2.43
Available Potassium (ppm)	70.95 ± 9.95

5/11/2026

Head, Department of EBWS
Cotton University
Panbazar Guwahati - 781001

অসম চৰকাৰ

GOVERNMENT OF ASSAM

GOVERNMENT OF ASSAM
OFFICE OF THE JOINT DIRECTOR OF HEALTH SERVICES
KAMRUP METROPOLITAN DISTRICT,SATPUKHURI,UZANBAZAR,GUWAHATI-1

Joint Director of Health Services
NO.....
DATE.....
Kamrup Metro District Ghy-1

No. Esstt/Jt.DHS(M)/Sanitation/2026-27/...10561...../ Dated...11/8/2026./

CERTIFICATE OF HEALTH AND HYGIENE

NAME AND ADDRESS OF THE SCHOOL:- **COTTON UNIVERSITY,PANBAZAR, GUWAHATI-781001, ASSAM.**

DATE OF INSPECTION - - - - - - :- 10 -08-2026

POINT OF OBSERVATION :-

CLEANLINESS IN AND AROUND THE SCHOOL CAMPUS: - SATISFACTORY, MAINTAINED.

SAFE DRINKING WATER - - - - - - :- AVAILABLE

URINAL & LATRINE'S CONDITION AND NUMBER OF TOILETS - - - - - :- GOOD, SUFFICIENT IN NUMBER ALL ARE CLEAN AND HYGIENE.

DRAINAGE SYSTEM OF THE CAMPUS - - - :- GOOD

GENERAL CONDITION OF THE SCHOOL - - - :- GOOD

RATIO OF STUDENTS TO TEACHER - - - - - :- MAINTAINED

FIRE SAFETY MEASURES - - - - - :- MAINTAINED

AVAILABILITY OF THE FIRST AID BOX - - - :-, AVAILABLE.

In view of the above, this is to Certify that the **COTTON UNIVERSITY, PANBAZAR, GUWAHATI-781001, ASSAM** is maintaining good health and hygiene in and around the School.

The above valid for the year 2026-27.

Joint Director of Health Services
Kamrup Metropolitan District
Uzanbazar,Guwahati-1.

Joint Director of Health Services
Kamrup Metro, Guwahati-1

N.B :- When necessary Inspection may be visited at any time for hygiene and Sanitation Maintenance.

List of Plant suggested for plantation according to agro-climatic zone

Sl. No.	Local name	Common name	Scientific name	Importance	Habit
1	Aahom bogori	European plum	*Prunus domestica* L.	Medicinal, economic	Small tree
2	Aam	Mango tree	*Mangifera indica* L.	Fruit, economic	Big tree
3	Agaru	Agar Wood	*Aquilaria malaccensis* Lam.	Economic, medicinal	Medium tree
4	Amara	Hog plum	*Spondias pinnata* (L.f.) Kurz	Medicinal, animal fruit	Medium tree
5	Amlokhi	Indian gooseberry	*Phyllanthus emblica* L.	Medicinal, economic	Medium tree
6	Anhot	Sacred fig	*Ficus religiosa* L.	Animal fruit	Big tree
7	Arjun	Arjun tree	*Terminalia arjuna* (Roxb. ex DC.) Wight & Arn.	Medicinal	Big tree
8	Ashok	Sita Ashok	*Saraca asoca* (Roxb.) Willd.	Medicinal, ornamental	Medium tree
9	Atlos	Custard apple	*Annona reticulata* L.	Economic, medicinal	Small tree
10	Bakul	Spanish cherry	*Mimusops elengi* L.	Medicinal, animal shelter	Big tree
11	Barun	Three Leafed Caper	*Crateva nurvala* Buch.-Ham.	Medicinal	Big tree
12	Bel	Wood apple	*Aegle marmelos* (L.) Corrêa	Medicinal	Medium tree
13	Bhaatghila	Indian trumpet tree	*Oroxylum indicum* (L.) Kurz	Medicinal	Medium tree
14	Bhomora	Bastard myrobalan	*Terminalia bellirica* (Gaertn.) Roxb.	Medicinal, economic	Big tree
15	Bilimbi tenga	Bilimbi/ Cucumber Tree	*Averrhoa bilimbi* L.	Fruit, medicinal	Small tree
16	Bogi-jamu/Golapi jamu	Rose-apple	*Syzygium jambos* (L.) Alston	Medicinal, fruit	Small tree
17	Bogori	Jujube	*Ziziphus jujuba* Mill.	Medicinal, economic	Medium tree

Sl. No.	Local name	Common name	Scientific name	Importance	Habit
18	Bonsom	Bonsom	*Phoebe goalparensis* Hutch.	Timber, conservation	Big tree
19	Bor-jamu	Malabar plum/Java plum	*Syzygium cumini* (L.) Skeels	Medicinal, fruit	Big tree
20	Borthekera		*Garcinia pedunculata* Roxb. ex Buch.-Ham.	Medicinal, economic	Big tree
21	Bot goch	Banyan tree	*Ficus benghalensis* L.	Animal fruit	Big tree
22	Bowal	Brown-cedar	*Ehretia acuminata* R.Br.	Animal fruit	Medium tree
23	Cham Kathal	Chaplasp/Chapalish	*Artocarpus chama* Buch.-Ham.	Fruit	Big tree
24	Chandan	Sandalwood	*Santalum album* L.	Medicinal, economic	Big tree
25	Chaulmugra	Chaulmoogra	*Hydnocarpus kurzii* (King) Warb.	Medicinal	Big tree
26	Dalim	Promegranate	*Punica granatum* L.	Medicinal, economic	Small tree
27	Devdaru	Indian mast tree	*Monoon longifolium* (Sonn.) B. Xue & R.M.K. Saunders	Ornamental	Medium tree
28	Dhuna goch	Black Dammar	*Canarium strictum* Roxb.	Medicinal, economic	Big tree
29	Ejar	Queen Crape Myrtle	*Lagerstroemia speciosa* (L.) Pers.	Ornamental	Medium tree
30	Gamari	Candahar tree	*Gmelina arborea* Roxb.	Timber, animal fruit	Big tree
31	Gobarhuta	Fragrant manjack	*Cordia dichotoma* G.Forst.	Animal fruit, medicinal	Big tree
32	Gol-nemu	Lime	*Citrus aurantiifolia* (Christen) Swing	Economic, medicinal	Shrub
33	Halphali/ Poa-amlokhi	Gooseberry tree	*Phyllanthus acidus* (L.) Skeels	Medicinal, economic	Small tree
34	Hasna-hana	Night-blooming jasmine	*Cestrum nocturnum* L.	Ornamental	Shrub
35	Jai-phol	Nutmeg	*Myristica fragrans* Hautt.	Medicinal, economic	Big tree

Sl. No.	Local name	Common name	Scientific name	Importance	Habit
36	Jalphai	Indian Olive	*Elaeocarpus floribundus* Blume	Medicinal, economic	Big tree
37	Kadam	Burflower tree	*Neolamarckia cadamba* (Roxb.) Bosser	Timber, animal shelter	Big tree
38	Kaji-nemu	Lemon	*Citrus limon* (L.) Burm.f.	Economic, medicinal	Shrub
39	Karabi	Yellow oleander	*Cascabela thevetia* (L.) Lippold	Medicinal, ornamental	Shrub
40	Kardoi	Star fruit	*Averrhoa carambola* L.	Fruit, medicinal	Medium tree
41	Karpur	Camphor tree	*Cinnamomum camphora* (L.) J.Presl	Economic, conservation	Big tree
42	Kath badam(Almond)	Indian almond	*Terminalia catappa* L.	Medicinal, economic	Big tree
43	Kathal	Jackfruit	*Artocarpus heterophyllus* Lam.	Fruit, economic	Big tree
44	Kendu	Common Malayan Ebony	*Diospyros lanceifolia* Roxb.	Animal shelter	Big tree
45	Keteki	Screw palm	*Pandanus foetidus* Roxb.	Medicinal, conservation	Small tree
46	Khair	Black cutch	*Acacia catechu* (L.f.) Willd.	Economic, medicinal	Medium tree
47	Khejur	Date palm	*Phoenix dactylifera* L.	Economic, animal fruit	Medium tree
48	Koroch	Indian beech	*Pongamia pinnata* (L.) Pierre	Medicinal, animal shelter	Big tree
49	Krisnasura	Flame Tree	*Delonix regia* (Hook.) Raf.	Ornamental	Medium tree
50	Kuhir	Spinous Kino tree	*Bridelia retusa* (L.) A.Juss.	Animal fruit, medicinal	Big tree
51	Kuji-thekera	Cowa fruit	*Garcinia cowa* Roxb. ex Choisy	Medicinal, economic	Small tree
52	Leteku	Burmese grape	*Baccaurea ramiflora* Lour.	Fruit, medicinal	Medium tree
53	Lichu	Litchi	*Litchi chinensis* Sonn.	Medicinal, economic	Medium tree

Sl. No.	Local name	Common name	Scientific name	Importance	Habit
54	Long	Clove	*Syzygium aromaticum* (L.) Merr. & L.M.Perry	Economic, medicinal	Big tree
55	Manichal	Soapnut tree	*Sapindus saponaria* L.	Medicinal, conservation	Big tree
56	Mitha Amara	Ambarella	*Spondias dulcis* Parkinson	Medicinal, economic	Medium tree
57	Modhuriam	Guava	*Psidium guajava* L.	Medicinal, economic	Small tree
58	Mou-dimoru	Cluster fig	*Ficus racemosa* L.	Animal fruit	Big tree
59	Nahar	Ceylon iron wood	*Mesua ferrea* L.	Timber, ornamental	Big tree
60	Nara bogori	Peach	*Prunus persica* (L.) Batsch	Medicinal, economic	Small tree
61	Narikol	Coconut tree	*Cocos nucifera* L.	Economic	Medium tree
62	Nuni	Common mulberry	*Morus alba* L.	Medicinal, animal fruit, economic	Medium tree
63	Outenga	Elephant apple	*Dillenia indica* L.	Medicinal, economic	Big tree
64	Palash	Flame of the forest	*Butea monosperma* (Lam.) Taub.	Medicinal, ornamental	Big tree
65	Paniyal	Indian coffee plum	*Flacourtia jangomas* (Lour.) Raeusch.	Medicinal, economic	Medium tree
66	Pansopa	Red Lotus Tree	*Magnolia insignis* Wall.	Timber, conservation	Big tree
67	Patihonda		*Cinnamomum bejolghota* (Buch.-Ham.) Sweet	Economic, conservation	Big tree
68	Putranjiva	Putranjiva tree	*Putranjiva roxburghii* Wall.	Medicinal, animal shelter	Medium tree
69	Radhasura	Peacock flower	*Caesalpinia pulcherrima* (L.) Sw.	Ornamental	Medium tree
70	Rakta Champa	Red frangipani	*Plumeria rubra* L.	Ornamental	Small tree
71	Ranga chandan	Red sanders	*Pterocarpus santalinus* L.f.	Medicinal, economic	Big tree

Sl. No.	Local name	Common name	Scientific name	Importance	Habit
72	Ranga jaba	Chinese hibiscus	*Hibiscus rosa-sinensis* L.	Medicinal, ornamental	Small tree
73	Ranga kanchan	Purple Bauhinia	*Bauhinia purpurea* L.	Ornamental, medicinal	Medium tree
74	Rudraksha	Indian bead tree	*Elaeocarpus ganitrus* Roxb. ex G.Don	Medicinal, economic	Big tree
75	Rupohi thekera		*Garcinia lanceifolia* Roxb.	Medicinal, conservation	Small tree
76	Saal	Saal tree	*Shorea robusta* Gaertn.	Timber, economic	Big tree
77	Sajina	Drumstick tree	*Moringa oleifera* Lam.	Medicinal, economic	Medium tree
78	Sapota	Sapodilla/Naseberry	*Manilkara zapota* (L.) P.Royen	Medicinal, economic	Medium tree
79	Senduri	Lipstick tree	*Bixa orellana* L.	Medicinal, economic	Medium tree
80	Sewa-tamol	Elephant's palm	*Caryota urens* L.	Economic	Medium tree
81	Shaguni lata/ Giloe	Heart-leaved moonseed	*Tinospora cordifolia* (Willd.) Miers	Medicinal climber	Climber
82	Shewali	Night jasmine	*Nyctanthes arbor-tristis* L.	Medicinal	Small tree
83	Shilikha	Chebulic myrobalan	*Terminalia chebula* Retz.	Medicinal, economic	Big tree
84	Som goch	Muga food plant	*Machilus gamblei* King ex Hook. f.	Muga food plant	Big tree
85	Sonaru	Golden tree	*Cassia fistula* L.	Medicinal, ornamental	Big tree
86	Tejpat	Indian bay leaf	*Cinnamomum tamala* (Buch.-Ham.) T.Nees & Eberm.	Economic, medicinal	Medium tree
87	Teteli	Tamarind	*Tamarindus indica* L.	Medicinal, economic	Big tree
88	Thala-padma	Cotton rosemallow	*Hibiscus mutabilis* L.	Medicinal, ornamental	Small tree
89	Thereju-tenga		*Prunus jenkinsii* Hook.f. & Thomson	Medicinal, conservation	Big tree
90	Tita-sopa	Golden Champa	*Michelia champaca* L.	Timber, conservation	Big tree

Sl. No.	Local name	Common name	Scientific name	Importance	Habit
91	Tokou	Jenkins' fan palm	*Livistona jenkinsiana* Griff.	Economic, conservation	Medium tree
92	Torua kadam	Sweet Acacia	*Vachellia farnesiana* (L.) Wight & Arn.	Medicinal, ornamental	Small tree

Annexure IV

The internal Audit team

- Prof. Sudipta Nandy, Director (i/c), Internal Quality Assurance Cell (IQAC), Cotton University
- Dr Mayuri Chabukdhara, Associate Professor, Department of Environmental Biology and Wildlife Sciences, Cotton University
- Dr Narayan Sharma, Assistant Professor, Department of EBWS, Cotton University
- Dr Rinu Prabha Deka, Assistant Professor, Department of Chemistry Department
- Mr Rajib Lochan Sarmah, Executive Engineer, Cotton University
- Ms Bushra Mehfuza Talukdar, MSc Student, Department of EBWS, Cotton University
- Ms Kajmi Choudhury, MSc Student, Department of EBWS, Cotton University
- Mr Dipankar Das, Doctoral student, Department of EBWS, Cotton University
- Ms Sukanya Kalita, Doctoral student, Department of EBWS, Cotton University