

CAUVERYCOLLEGE FOR WOMEN (Autonomous) TIRUCHIRAPPALLI

GREEN AUDIT REPORT

2022 - 2023



CENTRE FOR ENVIRONMENTAL SUSTAINABILITY DEPARTMENT OF ENVIRONMENTAL SCIENCES Bishop Heber College (Autonomous) Tiruchirappalli, Tamilnadu – 620 017

CAMPUS ENVIRONMENT AUDIT CERTIFICATE

Issued under the Green Campus Initiatives Certification process

CENTRE FOR ENVIRONMENTAL SUSTAINABILITY INV- CES-CEA/BHC/ESR/GEE AUDIT/2022-06-6



CAUVERY COLLEGE FOR WOMEN NAAC Accreditation I Cycle : A Grade (Institutional Score 85.90 out of 100) NAAC Accreditation II Cycle : A Grade (CGPA 3.37 out of 4) NAAC Accreditation III Cycle : A Grade (CGPA 3.41 out of 4) valid upto December 2024 ISO 9001 : 2015 Certified by IRCLASS & Accredited by NABCB Cauvery Nagar Main Road Annamalai Nagar, Woraiyur Trichy - 620018

Has successfully conducted **GREEN AUDIT** in accordance with the Sustainable Development Goals (SDGs) and standards of regulatory agencies in India

Based on the Scope of Green Audit we hereby acknowledge and certify that

The Management, Teaching fraternity, students, and support staff of the **CAUVERY COLLEGE FOR WOMEN**, (Autonomous) **Trichy – 620 018** have taken efforts to create a strategic change in attaining holistic Environmental Sustainability.

:

Period of Audit : 2022

2022 - 2023

Date of Certification

23 April 2023

Prof. A. Alagappa Moses Ecology and Biodiversity Consultant Functional Area Expert - NABET

A. Alagappa Moses Empanelled Expert, FAE Eco Services India Private Limited Approved Function Area/s : EB (A)

Accredited by NATIONAL ACCREDITATION BOARD FOR EDUCATION & TRAINING QUALITY COUNCIL OF INDIA QCI Office, 6th Floor, ITPI Building, Ring Road, I.P. Estate, New Delhi Category A Projects (vide AC MOM III, 2010 New Delhi NABET ACM Dated 6 Jan 2023, RA2, Version 3





CAMPUS ENVIRONMENT AUDIT

Centre for Environmental Sustainability Department of Environmental Sciences Bishop Heber College (Autonomous) Tiruchirappalli, Tamilnadu

Towards Clean and Green Campus

CAMPUS GREEN AUDIT PERSONNEL

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Vice Principal

Associate Professor and Head Department of Environmental Sciences Bishop Heber College,

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FAE - Land and Energy Audit Associate Dean, IQAC

Ms. AJAYLA KARTHIGA. T FAE – Water, Food Audit

Ms. A. ADELINE NICKIETA FAE - Biodiversity

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Department of Environmental Sciences, Bishop Heber College



PREFACE

An Environmental Audit is a tool comprising a systematic, documented, periodic and objective evaluation of how well a project, organization or equipment is performing with the aim of helping to safeguard the environment. The audit should facilitate management control of environmental practices and assess compliance with policy objectives and regulatory requirements.

A clean and healthy environment aids effective learning and provides a conducive learning environment.

Green audit is an official examination of the effects a college on the environment. It helps to improve the existing practices with the aim of reducing the adverse effects of these on the environment concerned.

Higher Educational Institutions are committed to preserve the environment within the campus through promotion of energy savings, recycling of waste, water use reduction, water harvesting etc.

Green audit visualizes the documentation of all such activities taking stock of the infrastructure of the college, their academic and managerial policies and future plans in the form of an environmental audit report.

Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus.

Green audit promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more relevant. The audit process in Cauvery College for Women, Tiruchirappalli involved initial interviews with management to clarify policies, activities, records and the cooperation of staff and students in the implementation of mitigation measures. Staff and students were given training how to collect the data for the green audit process. This was followed by staff and student interviews, collection of data through the questionnaire-based survey, review of records, observation of practices and observable outcomes. In addition, the approach ensured that the management and staff are active participants in the green auditing process in the college.

The baseline data prepared for the College will be a useful tool for campus greening, resource management, planning of future projects, and a document for implementation of sustainable development of the college. Existing data will allow the college to compare its programs and operations with those of peer institutions, identify areas in need of improvement, and prioritize the implementation of future projects. The green audit reports assist in the process of attaining an eco-friendly approach to the sustainable development of the college.

The results presented in the green audit report will serve as a guide for educating the college community on the existing environment related practices and resource usage at the college as well as spawn new activities and innovative practices. The Green Audit team expects the management to express their commitment to implement the recommendations.

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CHAPTER I

INTRODUCTION

The Reddy Educational Trust, Tiruchirapalli formed in the year 1984 with 48 members, enlightened and interested citizens of Tiruchirapalli district coming from various walks of life - Educationists, Lawyers, Doctors, Chartered Accountants, Entrepreneurs (representing sectors like Hospitality, Transportation etc), Public representatives, Former Ministers and Legislators felt the need to start one more college for women (at that time there was only twowomen'scollege) at Tiruchirapalli.

The Trust sought the permission of the Government of Tamilnadu to start an Arts and Science College for Women at Tiruchirapalli. The Government in its G.O.M.S. No.1298 Higher Education dated 01.10.1984 accorded permission to start one of the first self-financing colleges in Arts and Science in the State of Tamilnadu.

Bharathidasan University the Parent University gave its affiliation in its Lr.No.Aca/188/84 dated 12.10.1984 with 2 Under Graduate Courses, B.Com and B.Sc., Mathematics.

The Cauvery College for Women thus bloomed on 17.10.1984 with 40 students in B.Com., The college as on date (2021-2022) is offering 16 Under Graduate Programmes, 10 Post Graduate Programmes and 8 Research Programmes with a total student strength of 5100.

The college has been recognized by the University Grants Commission under Sec.2(f) and 12(B) of UGC Act 1956 in its Lr.No.F.8-111/2003(CPP-I) dated 11.12.2003. Autonomous status is conferred by UGC on 14.03.2019

The NAAC has awarded "A" Grade to the college consecutively. The college is recognized by NAAC as a Mentor Institution to identify the non-accredited colleges in our vicinity and motivate them for NAAC Accreditation.

The college has a well-equipped fully automated library which has 41,375 volumes of books, 100 Journals and 62 Magazines including 20 International Journals. We have high-tech lab facilities for all science courses and we have 557 computer terminals and 13 servers to meet the needs of our students. Other notable facilities includes KRT Seminar Hall with a seating capacity of 400, Muthu Lakshmi Reddy A/C Seminar Hall, modernized Internet lab and O.P. RamasamyReddiar Auditorium which is one of its kind with a seating capacity of 3000. The college has a well-equipped modern hostel for accommodating 1500 students. The main focus of the college is to run an institution not only for academic excellence but also a center which brings out the latent histrionic talents in them.



Fig. 1: The College Header and Emblem

The college coat of arms heralds six symbols of ethnicity and pride.

1. At its heart, the coat of arms bears the image of the Rockfort, which symbolizes the geographical and cultural heritage of the city.

2. A full bloomed lotus with a book on its top symbolizes intellectual blossoming and sustaining the purity of mind in the midst of adversities. The college is christened after the perennial river Cauvery which symbolizes youth, freshness, vigour and fulfillment.

3. The legendary 'Rajagopuram' of the Srirangam Temple is the tallest gopuram in Asia and stands as a representation of lofty thoughts and deeds which the institution presents.

4. The five faced lamp – "Kuthuvilakku" is a metaphoric representation of the light of knowledge dispelling the darkness of ignorance.

5. The college aims to provide academic excellence, employability and self reliance. This aim of the institution is represented by the image of a graduated scholar.

6. The motto of the college is "Karka", "Nirka", which is inscribed in classical Tamil language. It is the essence of the famous Thirukkural couplet 391 written by the classical poet Thiruvalluvar. "Karka" means 'to acquire' (learning / knowledge) "Nirka" means 'to adopt, to apply' (the acquired learning).

Holistically, the coat of arms stands for the empowerment of girls, who bloom and blossom inspite of adversities, graduate and aglow with the power of the acquired knowledge and conduct themselves accordingly, there by bringing glory to the institution, to the society and to the nation at large.

VISION AND MISSION

THE VISION

Our vision is to promote Academic Excellence, inculcate qualities of Competence, Confidence and Excellence for Employability and develop into Self Reliant individuals.

THE MISSION

- To impart higher education to Women Students from local and rural areas.
- To inculcate knowledge of higher order and to instill a scientific approach in the students about information technology.
- To make our wards aware of Entrepreneurial Development.
- To impart skills to the level of excellence and thus present a value system in the youth entrusted to us.

THE OBJECTIVES

- To empower students to participate in social, cultural and economic spheres and contribute positively to the upliftment of the society.
- To promote academic excellence by adopting customized learner focused/centered methodologies.
- To develop to be self-reliant and competent women by tapping and nurturing their potential through curricular and extracurricular activities.
- To provide skilled manpower by imparting on in-depth knowledge and keeping abreast with changing trends in technology.
- To inculcate the spirit of nationalism, uprightness and self confidence enabling them to become responsible members of the society and useful citizens of the nation.

CHAPTER II

CAMPUS ENVIRONMENTAL AUDIT

2.1 Campus Environmental Audit

An Environmental Audit is a tool comprising a systematic, documented, periodic and objective evaluation of how well a project, organization or equipment is performing with the aim of helping to safeguard the environment. The audit should facilitate management control of environmental practices and assess compliance with policy objectives and regulatory requirements. (European Environment Agency, European Commission 1999, Brussels).

Environmental auditing is a systematic, documented, periodic and objective process in assessing an organization's activities and services in relation to:

- Assessing relevant statutory and internal requirements
- Facilitating understanding of good environmental practices
- Promoting good environmental management
- Maintaining credibility with the public/clients
- Raising staff awareness and commitment to departmental environmental policy
- Exploring improvement opportunities
- Establishing the performance baseline for developing good sustainable practices.

2.2 Green Audit towards Sustainable Development

Sustainable Development (SD) is one of the biggest challenges of the twenty-first century and there can be no sustainability where educational institutions (Universities, Institutions of Higher Education, and Schools) promote un-sustainability. In modern society 'No institutions are better situated and more obliged to facilitate the transition to a sustainable future than schools, Colleges and Universities'.

Sustainable Development Goals (SDGs)

The 17 Sustainable Development Goals and 169 targets which has been proposed demonstrates the scale and ambition of this new universal agenda. They seek to build on the MDGs and complete has not been achieved. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and Girls. They are integrated and in and indivisible and balance the three dimensions of Sustainable Development: the economic, social and environmental. The Goals and Targets will stimulate action over the next 15 years in areas of critical importance for humanity and the planet.



Fig. 2: SUSTAINABLE DEVELOPMENT GOALS

The Colleges / Universities / and Schools are becoming engaged with the principles and concepts of SD, especially in the developed world, most of them to be traditional in India.

2.3 Environmental Audit

Environmental auditing has become a valuable tool in the management and monitoring of environmental and sustainable development programs. The information generated from audit exercise provides important information to many different stakeholders.

Although seen primarily as a tool in commerce and industry, creative application of environmental auditing techniques can improve transparency and communication in many areas of society where there is a need for greater understanding of environmental and ecosystem interactions. The environmental audit is a systematic process that must be carefully planned, structured and organized. As it is part of a long term process of evaluation and checking, it needs to be a repeatable process which can be readily replicated and can reflect change in both a quantitative and qualitative manner.

Universities and Colleges are regarded as "Small Cities" due to their size, population and the multifarious activities, which have some serious direct and indirect impacts on the local environment.

2.4 Campus Green Audit

The campus environmental audit is a common tool that many colleges and universities have employed in recent years. A campus environmental audit is both a summary and a report card for a campus and a way to evaluate where and how resources are being used. An environmental audit is also the first step in being able to quantify whether or not current and/or future environmental efforts are actually making a difference. As such, an environmental audit is the beginning of the sustainability planning process. The results can be used to quantify what kinds of impacts the campus community has on the environment and what steps the college can take to reduce these impacts.

2.5 Green Audit

Green Audit is defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyse environmental practices within and outside the Institute, which will have an impact on the eco-friendly ambience and sustainable ecosystem. It is a useful tool that can be used to understand existing practices and resource use to highlight the prospects of introducing resource efficiency in the ecosystem. Green audit provides cognizance on scope for improvement of environment and ecosystem of the campus. Thus, it is imperative that the College evaluate its own status on environmental sustainability and contributes towards sustainable future.

2.6 Pre Audit Stage

The process of Green Audit started with a pre-audit meeting that has provided an opportunity to reinforce the scope and objectives of the audit. The deliberations focused on the procedures to be followed in conducting the audit. This meeting is an important prerequisite for conducting green audit as it provides the first opportunity to meet and interact with the auditee and deal with any matters of concerns. The audit protocol and audit plan were discussed in detail and a Green Audit team was constituted with a staff adviser and student members.

- a) Preliminary literature review of concepts and methodologies related to green audit.
- b) Discussion with the management staff on various systems installed in the campus.
- c) Awareness creation and interaction with the staff and students on the concept of green audit. Walk through the entire campus to understand the nature of water use, energy use and waste management systems in the campus.

2.7 Commitment of the College

The College has shown the commitment and keen interest towards conducting green audit and encourages green practices. The College is committed towards Education for sustainability and implementation of sustainable strategies, reducing carbon foot print and effective utilization of waste into wealth.

2.8 Goals and Objectives

The goal of Green audit is "Ensuring Environmental Sustainability (EES) through reducing environmental foot print such as carbon, water, food, and land, management and conservation of the natural resource base, and the orientation of Education for Sustainable Development (ESD) by evolving Institutional policies on various environmental attributes in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations".

2.9 Objectives:

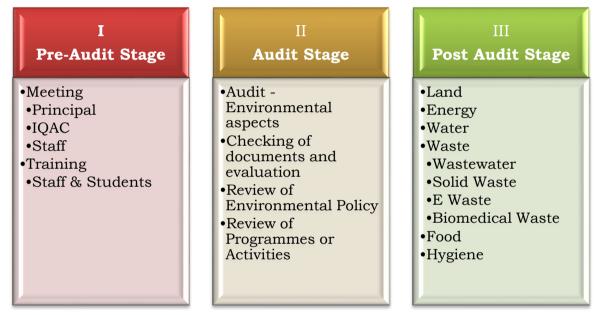
- To evolve institutional policies on various environmental attributes such as water, waste and sanitation and to assess the patterns of consumption of energy and water
- To measure the quantum of generation of wastes and hazardous substances
- To evaluate the level of awareness among the students regarding environmental resources
- To inculcate the concepts of 5 R principle such as Reduce, Refuse, Recover, Recycle and Repurpose among the stakeholders, thus making the organization as a better steward,
- To implement environmental management strategies so as to reduce overall environmental foot print.

2.10 Benefits of the Green Auditing

- More efficient resource management
- To provide basis for improved sustainability
- To create a green campus
- To enable waste management through reduction of waste generation, solid- waste and water recycling
- To create plastic free campus and evolve health consciousness among the stakeholders
- Recognize the cost saving methods through waste minimizing and managing
- Point out the prevailing and forthcoming complications
- Authenticate conformity with the implemented laws
- Empower the organizations to frame a better environmental performance
- Enhance the alertness for environmental guidelines and duties
- Impart environmental education through systematic environmental management approach and Improving environmental standards
- Benchmarking for environmental protection initiatives
- Financial savings through a reduction in resource use
- Development of ownership, personal and social responsibility for the College and its environment
- Enhancement of college profile
- Developing an environmental ethic and value systems in youngsters.
- Green auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programs of the college.

2.11 Modules of Campus Green Audit

Campus Green Audit (CGA) is a process of resource management. They are individual modules carried out in a defined interval illustrating an overall improvement or change in the institution over a period of time. The concept of Eco-friendly campus mainly focuses on the efficient use of energy and water; minimize waste generation, economic efficiency and reduction in environmental foot print. All these indicators are assessed in the process of Campus Green Audit. The CGA promotes conservation energy, water and waste management. The audit stages are as follows:



Data Collection

- a. Development of questionnaire to identify all water/energy using fixtures/ equipment and examine water or energy use patterns for individual buildings in the campus.
- b. Collection of secondary data from compilation of electricity bills, collecting records of pumps, generators, water quality analysis reports, civil and electrical etc.
- c. Semi-structured interview with maintenance manager, technicians, plumber and housekeeping staff on current situation and the past trends in water consumption, electricity consumption, waste

management, waste generation etc.

II. Data Processing and analysis

The existing trends and patterns in water usage, energy usage and waste generation and management is analyzed in this step from the data collected from the previous step.

III. Audit Recommendations and Reporting

Recommendation – On the basis of results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. Use of fossil fuels has to be reduced for the sake of community health.

CHAPTER III METHODOLOGY

3.1 Campus Green Audit Methods

The Campus Green Audit is an exercise that ensure the extent of implementation green policies adopted by the institution. The methodologies for the green audit are as follows:

- 1. Preparation of Campus Green Audit questionnaire based on the objectives
- 2. Constitution of Campus Green Audit Team with staff and students for each module
- 3. Data Collection:
 - a. Primary Data collection for each module by respective teams
 - b. Secondary Data collection by the team members
 - c. Collection of samples, observation, interviews and discussion with various staff members
 - d. Steps in primary and secondary data collection

3.2 Green Audit Components

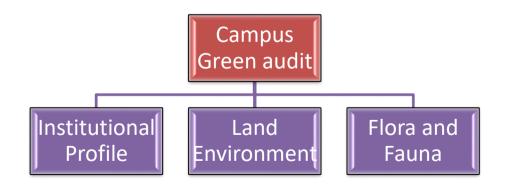


Fig. 3: Green Audit Components

CHAPTER IV

AUDIT STAGE

The Campus Green Audit (CGA) was carried out by the Post Graduate and Research Department of Environmental Sciences, Bishop Heber College (Autonomous), Tiruchirappalli, Tamilnadu. The CGA team constituted by the management during the pre-audit has done extensive data collection covering all the modules of green audit. The Campus Green Audit team comprises of Co-coordinators, Staff in-charge for each module and student volunteers.

4.1 Green Audit Team

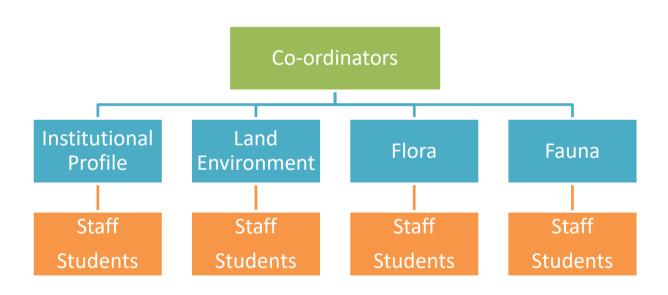


Fig. 4: Campus Green Audit Team

| S.No. | Name | Designation | Department | Aspect |
|-------|-------------------|---------------------|----------------|-----------------|
| 1. | Dr. R. Merlin | Professor | Computer | Team Head |
| | Packiam | | Applications | |
| Ι | Green Audit | | | |
| 2. | Dr. S. Sasikala, | Associate Professor | Mathematics | Land |
| | Dr. S. Saridha | | | |
| 3. | Dr. M. Keerthiga | Assistant Professor | Biotechnology | Flora and Fauna |
| II | Environment Audit | | | |
| 4. | Ms. P. Thangamani | Assistant Professor | Business | Air & Noise |
| | _ | | Administration | |
| 5. | Ms.P. Thamizhini | Assistant Professor | Chemistry | Water |
| 6. | Ms.P. Thamizhini | Assistant Professor | Chemistry | Wastewater |
| 7. | Dr. E. Priya, | Assistant Professor | Microbiology | Solid & E-Waste |
| | Dr. J. Prabha and | Assistant Professor | Commerce | |
| | Ms. B. Lavanya | Assistant Professor | Commerce | |
| 8. | Ms. N. Ganga Devi | Assistant Professor | FSM&D | Food |
| III | Energy Audit | | | |
| | Ms. D. Devi | Assistant Professor | Physics | Energy |
| IV | Campus Hygiene | | | |
| 9. | Dr. E. Priya | Assistant Professor | Microbiology | Campus Hygiene |

Campus Green Audit Assessment Team: 2022-2023

Land Audit Team

| Environmental Aspect | Land | |
|----------------------------|------------------------------------|--|
| Name of the coordinator | Dr. S. Sasikala&Dr. S. Saridha | |
| Designation and Department | Associate Professor of Mathematics | |

Audit Team –Students /Scholars

| S.No | Name of The Students | Class | Department |
|------|----------------------|--------------|-------------|
| 1. | T. Gokila | II M. Sc., | Mathematics |
| 2. | T. DivyaPriya | II M. Sc., | Mathematics |
| 3. | K. Saranya | I M. Sc., | Mathematics |
| 4. | N. Abirami | I M. Sc., | Mathematics |
| 5. | K. Arunadevi | III. B. Sc., | Mathematics |

| Environmental Aspect | Flora and Fauna |
|----------------------------|--------------------------------------|
| Name of the coordinator | Dr. M. Keerthiga |
| Designation and Department | Assistant Professor of Biotechnology |

Flora and Fauna Audit Team

Audit Team –Students /Scholars

| S.No. | Name of The Students | Class | Department |
|-------|-----------------------|-------------|---------------|
| 1. | Aishwarya Suresh Nair | III B. Sc., | Biotechnology |
| 2. | P. Poonguzhali | III B. Sc., | Biotechnology |
| 3. | S. Sellaharini | III B. Sc., | Biotechnology |
| 4. | I.Loghapriya | II. B. Sc., | Biotechnology |
| 5. | P. Dharshini | II B. Sc., | Biotechnology |

Air and Noise Team

| Environmental Aspect | Air and Noise |
|----------------------------|---|
| Name of the coordinator | Ms. P. Thangamani |
| Designation and Department | Assistant Professor Business Administration |

Audit Team – Students / Scholars

| S.No | Name of the Students | Class | Department |
|------|----------------------|---------|-------------------------|
| 1. | R. S. Akshaya | III BBA | Business Administration |
| 2. | R. V. Jeyameenakshi | III BBA | Business Administration |
| 3. | N. Divya | III BBA | Business Administration |
| 4. | K. Kaviratna | III BBA | Business Administration |
| 5. | K. G. Sarumathi | III BBA | Business Administration |

Food Team

| Environmental Aspects | Food |
|----------------------------|---------------------------|
| Name of the coordinator | MS. N.Ganga Devi |
| Designation and Department | Assistant Professor FSM&D |

| S.No | Name of The Students | Class | Department |
|------|----------------------|-----------|------------|
| 1. | V.L.Abikaysavee | II M.Sc. | FSM&D |
| 2. | 2. L.Gayathri | II M.Sc. | FSM&D |
| 3. | M.MarwaFathima | I M.Sc. | FSM&D |
| 4. | K.Nikitha | I M.Sc. | FSM&D |
| 5. | 5. B.Shivani | III B.Sc. | N&D |

Audit Team –Students /Scholars

Water &Waste Water Audit Team

| Environmental Aspects | Water |
|----------------------------|----------------------------------|
| Name of the coordinator | Ms. P. Thamizhini |
| Designation and Department | Assistant Professor of Chemistry |

Audit Team –Students /Scholars

| S.No | Name of The Students | Class | Department |
|------|----------------------|-------------|------------|
| 1. | V. Shakthi | III B. Sc., | Chemistry |
| 2. | S. Soundarya | III B. Sc., | Chemistry |
| 3. | R. Bhuvaneswari | III B. Sc., | Chemistry |
| 4. | M. Sivashankari | I M. Sc., | Chemistry |
| 5. | J. Sathana | I M. Sc., | Chemistry |

Solid and E Waste Audit Team

| Environmental Aspects | Solid Waste and E Waste |
|----------------------------|--|
| Name of the coordinator | Dr. E. Priya, Dr. J. Prabha and Ms. B. Lavanya |
| Designation and Department | Assistant Professor of Physics and Commerce |

Audit Team – Students / Scholars

| S.No | Name of The Students | Class | Department |
|------|----------------------|------------|------------|
| 1. | G. Pooja Shree | IIIB. Com. | Commerce |
| 2. | S. Sakthisree | IIIB. Com. | Commerce |
| 3. | S. Sharmi | II B. Com. | Commerce |
| 4. | M. NithyaPriya | II B. Com. | Commerce |
| 5. | K. Raghudevi | II B. Com. | Commerce |

CHAPTER 5

Institutional Profile

Cauvery College for Women has a total strength of 4149 students and staff during the period 2022 - 2023.

Table 1: Total Population of the College (2022-2023)

| Category | Total |
|-------------------------------|-------|
| Students | 3705 |
| Teaching | 206 |
| Non-Teaching Staff and Others | 240 |
| Total | 4149 |

Table 2: Student's Strength (2022-2023)

| Year | Total No. of Students |
|-------------|-----------------------|
| 2022 - 2023 | 3705 |
| Total | 3705 |

Table 3: Hostel Student's Strength(2022-2023)

| Year | Total No. of Students |
|-------------|-----------------------|
| 2022 - 2023 | 917 |
| Total | 917 |

Table 4: Summary of Students and Staff

| Year | Students& | | Total | | |
|-----------|-----------|----------|--------|-----|------|
| | Scholars | Teaching | Others | | |
| 2022 – 23 | 3705 | 206 | 70 | 170 | 4149 |
| Total | | | | | 4149 |

CHAPTER 6

LAND AUDIT

The College has a total land holding of 5.88 acres, of which 15% of the area under green cover. The College is located in a plain flat terrain with green cover augmenting the aesthetic value of the College.

The Campus includes a buildings, housing, administrative office, faculty offices, classrooms, conference halls, auditorium, guest house, library, small syndicate rooms (separate) and student dormitories within the campus.

6.1 Land Use pattern

The Land Use attributes were identified as Built-up area, Ground area, garden area, and green cover.

| S.No. | Aspects | : | Acres | Sq. Ft | Sq. M |
|-------|--------------------------------|---|-------|----------|----------|
| 1. | Total Land area | : | 5.88 | 256132 | 23795.52 |
| 2. | Play Ground | : | 0.949 | 41338.44 | 3840.05 |
| 3. | Plantation / Green area | : | 0.875 | 38095 | 3539 |
| 4. | Built-up / Constructed Area | : | 2.175 | 94743 | 8802 |
| 5. | Open space | : | 1.883 | 81956.4 | 7614.4 |
| 6. | Terrain of the campus | : | | Plain | |
| 7. | Roof Top area | : | 2.175 | 94743 | 8802 |

Table 5: Land Use at a Glance

Table 6: Land Use Data

| S. No. | Categories of Land Use | Acres | Sq. M |
|--------|------------------------------|-------|----------|
| 1 | Open space / Ground /Parking | 2.832 | 11460.7 |
| 2 | Plantation / Green area | 0.875 | 3539 |
| 3 | Built-up / Constructed Area | 2.175 | 8802 |
| | Total area of the campus | 5.88 | 23795.52 |

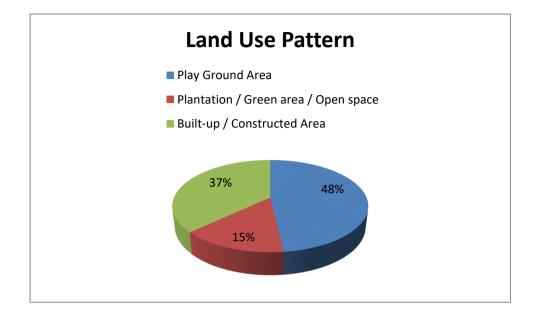


Fig. 5: Land Use Pattern

Layout of the campus:



Fig. 6: Layout of the campus – Topographical map (Buildings)

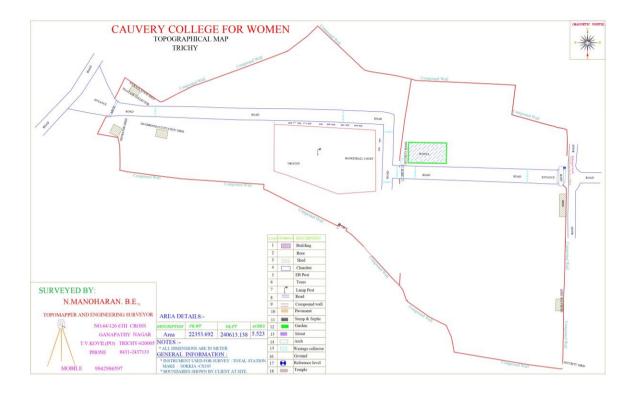


Fig. 7: Layout of the campus – Topographical Map (Sheds)

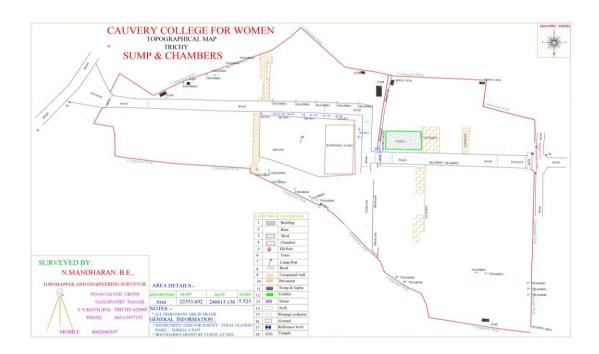


Fig. 8: Layout of the campus – Topographical map (Sump & Chambers)

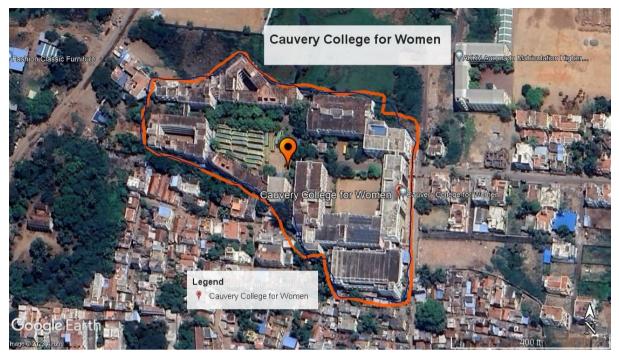
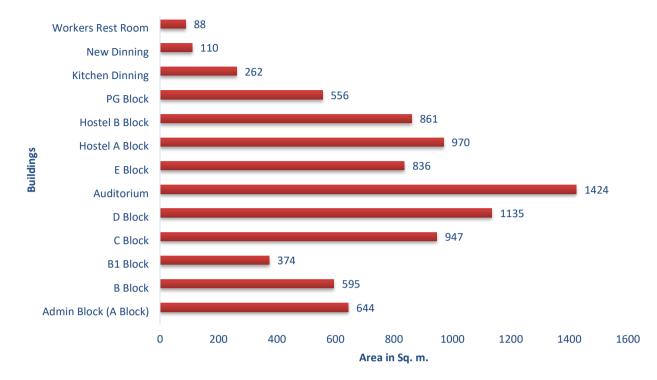


Fig. 9: Google Earth View of the Campus

| | | | | Age of th | ne Buildings | |
|-----------------|-----------------------|-------|--------|--------------|-------------------------------|--|
| Building No. | Name of the Building | Sq. M | Acres | Opened on | Age as on December 2022 | |
| 1. | Admin Block (A Block) | 644 | 0.1591 | 2019 | 3 years | |
| 2. | B Block | 595 | 0.1470 | 1993 | 29 years | |
| 3. | B1 Block | 374 | 0.0924 | 2009 | 13 years | |
| 4. | C Block | 947 | 0.2340 | 1999 | 23 years | |
| 5. | D Block | 1135 | 0.2805 | 2001 | 21 years | |
| 6. | Auditorium | 1424 | 0.3519 | 2004 | 18 years | |
| 7. | E Block | 836 | 0.2066 | 2016 | 6 years | |
| 8. | Hostel A Block | 970 | 0.2397 | 1997 | 25 years | |
| 9. | Hostel B Block | 861 | 0.2128 | 2000 | 22 years | |
| 10. | PG Block | 556 | 0.1374 | 2003 | 19 years | |
| 11. | Kitchen Dinning | 262 | 0.0647 | 1997 | 25 years | |
| 12. | New Dinning | 110 | 0.0272 | 1997 | 25 years | |
| 13. | Workers Rest Room | 88 | 0.0217 | 1997 | 25 years | |

Table 7: Campus Infrastructure



Area occupied by buildings

Fig. 10Area occupied by Buildings

Total Green Cover

Table 8: Green Cover

| Land Use Category | Acre | Sq.M |
|-------------------------|-------|------|
| Plantation / Green area | 0.875 | 3539 |

Land Use Pattern - Green Cover • Open space / Ground /Parking • Plantation / Green area • Built-up / Constructed Area

Fig. 11: Land Use Pattern showing Green Cover

6.2 Observation and Comments

- 1 The land use attributes include built-up area, Play Ground, Parking lots, storm water drains and green cover.
- 2 The campus has a moderate green area of 3539 Sq. M i.e.
 0.875 acres with a built up area of 8802 Sq. M. The green cover constitutes 15% of the total area.
- 3 As per the National Forest Policy, 1988 and the new draft National Forest Policy minimum of **one-third** (or **33%)** of **total land area of India** should be under forest cover (fc) or tree cover (tc).
- 4 The campus green cover is only 15% with a shortage of 18% as per the norms prescribed by National Forest Policy 1988,
- 5 The campus should take measures to increase the green cover by 18% either on campus or off-campus.

CHAPTER 7

CAMPUS BIODIVERSITY

The natural landscape of the College campus includes green vegetation, trees, and rain water harvesting systems providing a unique environmental setting conducive for a wide range of floral and faunal diversity. Totally 116 species of plants are present in the College campus.

7.1 Assessment of Flora

| S. No. | Habit | Number |
|--------|--------|--------|
| 1 | Herbs | 18 |
| 2 | Shrubs | 31 |
| 3 | Trees | 28 |
| | Total | 77 |

Table 8: Campus Biodiversity

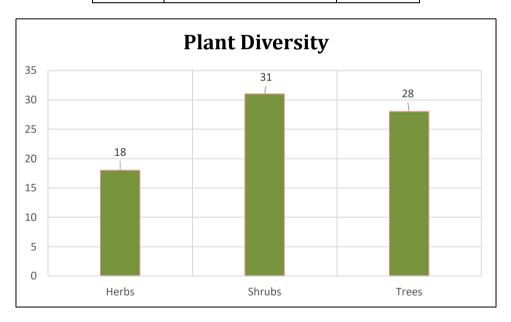


Fig. 12 Diversity of Flora

Table 9: Campus Flora

TREES

| S.No. | Botanical Name | Family | Vernacular Name | Numbers |
|-------|-------------------------|----------------|-------------------|---------|
| 1. | Azadirachta indica | Meliaceae | Neem Tree | 38 |
| 2. | Millettiapinnata | Fabaceae | Pungai Tree | 8 |
| 3. | Mangifera indica | Anacardiaceae | Mango Tree | 7 |
| 4. | Musa paradisiaca | Musaceae | Banana Tree | 25 |
| 5. | Cocosnucifera | Arecaceae | Coconut tree | 10 |
| 6. | Psidiumguajava | Myrtaceae | Guava Tree | 4 |
| 7. | Manilkarazapota | Sapotaceae | Sapodilla | 3 |
| 8. | Carica papaya | Caricaceae | Papaya Tree | 1 |
| 9. | Punicagranatum | Punicaceae | Pomegranate | 9 |
| 10. | Citrus limon | Rutaceae | Lemon | 7 |
| 11. | Citrus medica | Rutaceae | Narthangai | 5 |
| 12. | Artocarpusheterophyllus | Moraceae | Jackfruit | 1 |
| 13. | Phyllanthusacidus | Phyllanthaceae | Indian gooseberry | 5 |
| 14. | Phyllanthusemblica | Phyllanthaceae | Parriyanelli | 2 |
| 15. | Phyllanthusreticulatus | Phyllanthaceae | Neernelli | 3 |
| 16. | Saracaasoca | Fabaceae | Ashoka Tree | 2 |
| 17. | Aeglemarmelos | Rutaceae | Billva tree | 4 |
| 18. | Bambusa vulgaris | Poaceae | Bamboo Tree | 10 |
| 19. | Pithecellobiumdulce | Fabaceae | Kodukapuli Tree | 1 |
| 20. | Tectonagrandis | Lamiaceae | Teakwood Tree | 1 |
| 21. | Terminaliacatappa | Combretaceae | VathamMaram | 3 |
| 22. | Couroupitaguianensis | Lecythidaceae | Nagalingammaram | 1 |
| 23. | Mimusopselengi | Sapotaceae | Magilam Tree | 1 |
| 24. | Ficusreligiosa | Moraceae | Arasham Tree | 1 |
| 25. | Ficusbenghalensis | Moraceae | Aalamaram | 1 |
| 26. | Diospyroscandolleana | Ebenaceae | Nilaviruksha | 1 |

| 27. | Cratoxylummaingayi | Hypericaceae | Read Tiew | 2 |
|-----|-----------------------|--------------|-------------|----|
| 28. | Hyophorbelagenicaulis | Arecaceae | bottle palm | 19 |

SHRUBS

| S.No. | Botanical Name | Family | Vernacular Name |
|-------|-------------------------------|-----------------|----------------------|
| 1. | Rauvolfiaserpentina | Apocynaceae | sarphakranthi |
| 2. | Canna iridiflora | Cannaceae | Canna Lilies |
| 3. | Phyllanthusacidus | Phyllanthaceae | cermai |
| 4. | Lantana montevidensis | Verbenaceae | weeping lantana |
| 5. | Plumbagoauriculata | Plumbaginaceae | cape leadwort |
| 6. | Adeniumobesum | Apocynaceae | desert rose |
| 7. | Canna indica | Cannaceae | Indian Shot |
| 8. | Euphorbia milii | Euphorbiaceae | crown of thorns |
| 9. | Pseuderanthemummaculatum | Yellow-Veined | yellow-vein |
| | | Eranthemum | eranthemum |
| 10. | Syngoniumpodophyllum | Araceae | Arrowhead Plant |
| 11. | Plumeriapudica | Apocynaceae | Bridal Bouquet |
| 12. | Plumeriaobtusa | Apocynaceae | Singapore graveyard |
| | | Apocynaccae | flower |
| 13. | Bonelliamacrocarpa | Theophrastaceae | Cudjoewood |
| 14. | Codiaeumvariegatum | Euphorbiaceae | Croton pictus |
| 15. | Ruelliatuberosa | Acanthaceae | snapdragon root |
| 16. | Thujaoccidentalis | Cupressaceae | eastern white-cedar |
| 17. | PunctatumAureum | Euphorbiaceae | Gold Dust Narrow |
| | | - | Leaf Croton |
| 18. | Hymenocallislittoralis | Amaryllidaceae | Beach Spiderlily |
| 19. | Dracaena angustifolia | Asparagaceae | Narrow-Leaf Dragon |
| | | Asparagaeeae | Tree |
| 20. | Rhapisexcelsa | Arecaceae | Lady Palm |
| 21. | Philodendron Burle Marx | Araceae | Philodendron |
| 22. | Ixoracoccinea | Rubiaceae | scarlet jungle flame |
| 23. | Dypsislutescens | Arecaceae | Areca Palm · |
| | | | Bamboo Palm |
| 24. | Pisoniagrandis | Bougainvillea | grand devil's-claws |
| 25. | Ixorachinensis | Rubiaceae | Chinese ixora |
| 26. | Tecomastans | Bignoniaceae | yellow trumpetbush |
| 27. | Encephalartoschimanimaniensis | Zamiaceae | Cycad plant |
| 28. | Kopsiafruticosa | Apocynaceae | Shrub Vinca |
| 29. | Aloe vere | Liliaceae | kattralai |
| 30. | Lawsoniainermis | Lythraceae | Henna |
| 31. | Hibiscus rosa-sinensis | Malvaceae | Hibiscus |

HERBS

| S.No. | Botanical Name | Family | Vernacular Name |
|-------|------------------------|------------------|---------------------|
| 1. | Zephyranthessps | Amaryllidaceae | Thunder lily Flower |
| 2. | Ocimumtenuiflorum | Labiatae | Karuntulsi |
| 3. | Ocimumbasilicum | Labiatae | Thiruneetrupachilai |
| 4. | clitoriaternatea | Fabaceae | Nilakkakkanam |
| 5. | Ocimum sanctum | Labiatae | Vishnu tulsi |
| 6. | menthapiperita | Lamiaceae | Mint tulsi |
| 7. | Cymbopogoncitratus | Poaceae | Lemongrass |
| 8. | Piper betle | Piperaceae | Betel |
| 9. | Sphagneticolatrilobata | Asteraceae | Trailing daisy |
| 10. | Phyllanthusamarus | Phyllanthaceae | Keelaneeli |
| 11. | Gloriosasuperba | Colchicaceae | flame lily |
| 12. | Thymus vulgaris | Lamiaceae | Garden thyme |
| 13. | Salvia officinalis | Lamiaceae | Sage Plant |
| 14. | Catharanthusroseus | Apocynaceae | Pink periwinkle |
| 15. | Aristolochiaindica | Aristolochiaceae | Perumarunthukodi |
| 16. | Portulacaquadrifida | Amaranthaceae | PasalaiKeerai |
| 17. | Baccaureamotleyana | Phyllanthaceae | Rambai |
| 18. | Solanumtrilobatum | Solanaceae | Thoothuvalai |

ORNAMENTAL PLANTS

| S.No. | Botanical Name | Family | Vernacular Name |
|-------|-----------------------|---------------|---------------------|
| 1. | Rhapisexcelsa | Arecaceae | Bamboo Palm, Lady |
| | | Alecaceae | Palm |
| 2. | Pandanusveitchi | Pandanaceae | screw pine |
| 3. | Adeniumobesum | Apocynaceae | desert rose |
| 4. | Canna indica | Cannaceae | Indian Shot, |
| 5. | Euphorbia milii | Euphorbiaceae | crown of thorns |
| 6. | Syngoniumpodophyllum | Araceae | Arrowhead Plant |
| 7. | Hyophorbelagenicaulis | Arecaceae | bottle palm |
| 8. | Plumeriapudica | Apocynaceae | Bridal Bouquet |
| 9. | Plumeriaobtusa | Apocynaceae | Singapore graveyard |
| | | Apolynaceae | flower |

| 10. | Bonelliamacrocarpa | Theophrastaceae | Cudjoewood |
|-----|-------------------------------|-----------------|----------------------|
| 11. | Codiaeumvariegatum | Euphorbiaceae | Croton pictus |
| 12. | Ruelliatuberosa | Acanthaceae | snapdragon root |
| 13. | Thujaoccidentalis | Cupressaceae | eastern white-cedar, |
| 14. | PunctatumAureum | | Gold Dust Narrow |
| | | Euphorbiaceae | Leaf Croton |
| 15. | Zephyranthessps | Amaryllidaceae | Thunder lily Flower |
| 16. | Hymenocallislittoralis | Amaryllidaceae | Beach Spiderlily |
| 17. | Dracaena angustifolia | | Narrow-Leaf Dragon |
| | | Asparagaceae | Tree |
| 18. | Rhapisexcelsa | Arecaceae | Lady Palm |
| 19. | Philodendron Burle Marx | Araceae | Philodendron |
| 20. | Ixoracoccinea | Rubiaceae | scarlet jungle flame |
| 21. | Dypsislutescens | | Areca Palm · |
| | | Arecaceae | Bamboo Palm |
| 22. | Pisoniagrandis | Bougainvillea | grand devil's-claws |
| 23. | Ixorachinensis | Rubiaceae | Chinese ixora |
| 24. | Tecomastans | Bignoniaceae | yellow trumpetbush |
| 25. | Encephalartoschimanimaniensis | Zamiaceae | Cycad plant |
| 26. | Kopsiafruticosa | Apocynaceae | Shrub Vinca |

MEDICINAL PLANTS

| S.No. | Botanical Name | Family | Vernacular Name |
|-------|------------------------|------------------|---------------------|
| 1. | Aloe vere | Liliaceae | kattralai |
| 2. | Ocimumtenuiflorum | Labiatae | Karuntulsi |
| 3. | Cissusquadrangularis | vitaceae | Perandae |
| 4. | Coleus amboinicus | Lamiaceae | Omavalli |
| 5. | Ocimumbasilicum | Labiatae | Thiruneetrupachilai |
| 6. | clitoriaternatea | Fabaceae | Nilakkakkanam |
| 7. | Ocimum sanctum | Labiatae | Vishnu tulsi |
| 8. | menthapiperita | Lamiaceae | Mint tulsi |
| 9. | Cymbopogoncitratus | Poaceae | Lemongrass |
| 10. | Piper betle | Piperaceae | Betel |
| 11. | Sphagneticolatrilobata | Asteraceae | Trailing daisy |
| 12. | Phyllanthusamarus | Phyllanthaceae | Keelaneeli |
| 13. | Gloriosasuperba | Colchicaceae | flame lily |
| 14. | Thymus vulgaris | Lamiaceae | Garden thyme |
| 15. | Salvia officinalis | Lamiaceae | Sage Plant |
| 16. | Catharanthusroseus | Apocynaceae | Pink periwinkle |
| 17. | Aristolochiaindica | Aristolochiaceae | Perumarunthukodi |
| 18. | Lawsoniainermis | Lythraceae | Henna |
| 19. | Hibiscus rosa-sinensis | Malvaceae | Hibiscus |
| 20. | Portulacaquadrifida | Amaranthaceae | PasalaiKeerai |
| 21. | Baccaureamotleyana | Phyllanthaceae | Rambai |
| 22. | Solanumtrilobatum | Solanaceae | Thoothuvalai |

| 1 | 1. Xerophytes | Aloe barbadensis |
|----|---------------|---------------------|
| 1. | | Asparagus racemosus |
| 2. | Mesophytes | NIL |
| 3. | Hydrophytes | Nymphaea alba |
| 4. | Epiphytes | Loranthuslongifolia |

Table 11: HABITAT FORMS

7.2 Green Cover in the Campus

The campus has a green area of 18% which is below the norms of green area recommended by the National Forest Policy of India, 1988.

7.3 Tools to Measure Carbon Absorption

Assumptions

1. Number of mature trees in 1 acre = 700

2. Carbon absorption capacity of 700 trees is equivalent to carbon

emitted by a speeding car for 26,000 miles

3. 26,000 miles = 41,843 km

4. Average km. covered by a car per litre of petrol is 20 km

```
5. Total quantity of petrol consumed by the car (41,843/20) = 2092L
```

7.4 Observation and Comments

- 1 The campus has 28 grown trees, the carbon emitted by a car due to consumption of 1 litre of petrol is 2.3 kg CO₂.
- At this rate the total quantity of carbon emitted by 2092 litres of petrol (2092 × 2.3 kg) = 5389.44 kg CO₂ or 5.39tonnes of CO₂.
- 3 Therefore, the carbon absorption of <u>Onefull-grown tree is</u> <u>5389.44/28192.48 kg CO₂.</u>

The footprint calculation is based on The standard unit of 1 litre petrol = 2.3 kgCO₂.

7.5 Carbon absorption by flora in the Institution

Carbon absorption capacity of one full-grown tree = 192.48 kg CO_2 .

1. Therefore the carbon absorption capacity of 30 full-grown trees in the

Campus is (28 × 192.48 kg CO₂) = **192.2 kg of CO₂.**

7.6 ASSESSMENT OF FAUNA

The animal life of an area is dependent upon the vegetation and there are countless relationships between the species composing an animal community. Fauna assessment involves more problems than flora assessment by virtue of the greater variety of animal types, their mobility and behavior. Faunal assessment provides a basis for determining relative abundance and evaluating commonness or rarity of each species encountered.

In the college campus, the animal survey was conducted along with the plants. The study includes surveys of the animal communities such as aquatic organisms, insects, molluscs, reptiles, fishes, amphibians, birds and mammals. The details of fauna found in campus are given in the following tables:

| S. No. | Faunal Group | No. of Species |
|--------|--------------|----------------|
| | INVERTEBRATA | |
| 1 | Arthropods | |
| | a. Butterfly | 20 |
| | b. Ants | 03 |
| | c. Insects | 06 |
| 2 | Arachnids | |
| | Spiders | 04 |
| 3 | Mollusca | 02 |
| | CHORDATA | |
| 2 | Reptiles | 08 |
| 3 | Birds | 22 |
| 4 | Mammals | 07 |

Table 12: Diversity of Fauna

INVERTEBRATA: PHYLUM: ARTHROPODA

Table 13: BUTTERFLY

| S.No | Common Name | Scientific Name | Status/Schedule |
|------|-------------------------|-------------------------|-----------------|
| 1. | Common grass dart | Taractroceramaevius | Common |
| 2. | Indian palm bob | Suastusgremius | Common |
| 3. | Common rose | Pachlioptaaristolochiae | Common |
| 4. | Crimson rose | Pachliopta hector | Common |
| 5. | Common jay | Graphiumdoson | Common |
| 6. | Tailed jay | Graphiumagamemnon | Common |
| 7. | Lime butterfly | Papiliodemoleus | Common |
| 8. | Common mormon | Papiliopolytes | Common |
| 9. | Common gull | Ceporanerissa | Common |
| 10. | Crimson tip | Colotisdanae | Common |
| 11. | Plain orange tip | Colitis euharis | Common |
| 12. | Common grass yellow | Euremahecabe | Common |
| 13. | Three spot grass yellow | Euremablanda | Common |
| 14. | Yellow orange tip | Ixias pyrene | Common |
| 15. | Common wanderer | Pareroniavaleria | Common |
| 16. | Plain tiger | Danausalmanc | Common |
| 17. | Stripped tiger | Danausgeutia | Common |
| 18. | Plain tiger | Danuschrysippus | Common |
| 19. | Common crow | Euploea core | Common |
| 20. | Blue tiger | Tirumalalimniace | Common |

Table 15: INSECTS

| S.No | Common name | Scientific Name | Status/Schedule |
|------|--------------|--------------------------|-----------------|
| 1. | Ponerinae | Leptogenysprocessionalis | Common |
| 2. | Slender ants | Tetraponerasp | Common |
| 3. | Monomorium | Monomoriumsp. | Common |

| 4. | Big-headed ants | Pheidolesp. | Common |
|----|-----------------------|--------------------|--------|
| 5. | Carpenter ant | Camponotussericeus | Common |
| 6. | Red Imported Fire Ant | Solenopsisinvicta | Common |

Table 16: ANT

| S.No. | Common Name | Scientific Name | Status |
|-------|-------------|--------------------------|--------|
| 1. | Fire ant | Solenopsisgeminata | Common |
| 2. | Samyerumbu | Paratrechinalongicornis | Common |
| 3. | Bug | Probergrothissanuinolens | Common |

Table 17: SPIDER

| S.No. | Common Name | Scientific Name | Status/schedule |
|-------|--------------------|---------------------|-----------------|
| 1. | Jumping spider | Menemerusfulvus | Common |
| 2. | Grey wall jumper | Menemerusbivittatus | Common |
| 3. | Grass cross spider | Argiope catenulate | Common |

Table 18: PHYLUM: MOLLUSCA

| S.NO | Common Name | Scientific Name | Status/schedule |
|------|-------------|-----------------------|-----------------|
| 1. | Apple snail | Pilaglobosa | Common |
| 2. | Ariophanta | Ariophantabristrialis | Common |

Table 19: CLASS: REPTILIA

| S.No. | Common Name | Scientific Name | Status/schedule |
|-------|----------------------|------------------------|-----------------|
| 1. | Calotes | Calotesversicolar | Common |
| 2. | Varanus | Varanusvarius | Common |
| 3. | Non poisonous snake | Lycodonaulicus | Common |
| 4. | Krait (Kattuviriyan) | Bungaruscaeruleus | Common |
| 5. | Rat snake | Ptyas mucosa | Common |
| 6. | Chameleon | Chameleo chameleon | Rare |
| 7. | Green snake | Primeresureusgramineus | Common |
| 8. | Common wall Lizard | Podarcismuralis | Common |

| S.No | Scientific Name | Common Name | IUCN | WPA 1972 Schedule |
|------|----------------------------|-----------------------------|-------------|-------------------------|
| 1. | Thrdskiornismelanocephalus | Black headed Ibis | LC (3.1) | IV |
| 2. | Bubulcus ibis | Cattle Egret | NT (3.1) | IV |
| 3. | Gallinulachloropus | Common Coot | LC (3.1) | IV |
| 4. | Gallinulachloropus | Common Moorhen | LC (3.1) | IV |
| 5. | Anhinga melanogaster | Drater | NT (3.1) | IV |
| 6. | Ardeacinerea | Grey Heron | LC (3.1) | IV |
| 7. | Gelochelidonnilotica | Gull billed tern | LC (3.1) | IV |
| 8. | Phalacrocoraxfuscicollis | Indian Cormorant | NT (3.1) | IV |
| 9. | Ardeolagrayii | Indian pond heron | LC (3.1) | IV |
| 10. | Mesophoyxintermedia | Intermediate Egret | LC (3.1) | IV |
| 11. | Dendrocygnajavanica | Lesser whistling Duck | NT (3.1) | IV |
| 12. | Phalacrocoraxniger | Little Cormorant | LC (3.1) | IV |
| 13. | Egrettagarzetta | Little Egret | LC (3.1) | IV |
| 14. | Tachybaptusruficollis | Little Grebe | NT (3.1) | IV |
| 15. | Porphyrioporphyrio | Purple Swamp hen | LC (3.1) | IV |
| 16. | Amaurornisphoenicurus | White Breasted Water hen | LC (3.1) | IV |
| 17. | Tringaochropus | Wood Sandpiper | NT (3.1) | IV |
| 18. | Motacila alba | White wagtail | LC (3.1) | IV |
| 19. | Halcyon smyrnensis | White throated kingfisher | LC (3.1) | IV |
| 20. | Cerylerudis | Pied kingfisher | NT (3.1) | IV |
| 21. | Alcedoatthis | Common kingfisher | LC (3.1) | IV |
| 22. | Vanellusindicus | Red Wattled lapwing | LC (3,1) | IV |

Table 20: CLASS: AVES (BIRDS)

NT Near Threatened : LC : Least Concern

| Sl. No. | Common Name | Scientific Name | IUCN status / Schedule |
|------------|--------------------------------|------------------------|---------------------------|
| 1 | Indian palm squirrel | Fumambuluspalmarum | Lower risk/III |
| 2 | Grey mongoose | Herpestesedwardsii | Lower risk/II |
| 3 | Indian gerbils | Tateraindica | Lower risk/III |
| 4 | Large bandicoot – rat | Bandicotaindica | Lower risk/III |
| 5 | House rat | Rattusrattus | Lower risk/III |
| 6 | Schneider's leaf- nosed bat | Hipposiderosspeoris | Lower risk/III |
| 7 | Fulvous fruit bat | Rousettusleschenaultii | Lower risk/III |

Table 21: CLASS: MAMMALIA

7.7 Observations – Fauna

The fauna observed and recorded in the study area are as follows:

| Invertebrates | Chordates | Birds | |
|----------------------------|--------------------------|-------------------------|--|
| The insects in the | The chordates | Birds play an | |
| study area are | include 7 species of | important role in | |
| interrelated with each | mammals, 22 species of | understanding the | |
| other and other | birds, 8 species of | ecological balance and | |
| organisms. | reptiles, | its interrelationships. | |
| Invertebrates recorded | Reptiles | Totally 22 species of | |
| in the study site include | The reptiles | birds were recorded in | |
| 20 species of butterflies, | recorded in the study | the campus. | |
| 3 species of ants, 2 | area include lizards, | Mammals | |
| species of molluscans, | and snakes. Totally 8 | The mammals | |
| and 2 species of | species of reptiles were | present in the study | |
| spiders. | recorded in the study | area include Mongoose, | |
| | sites. | Indian palm Squirrel, | |
| | | etc. These mammals are | |
| | | spread over the study | |
| | | area. Totally 6 species | |
| | | of mammals were | |
| | | recorded in the campus. | |

CHAPTER 8

CONCLUSION

8.1 Conclusion

Green Audit is the most efficient way to identify the strength and weakness of environmental sustainable practices and to find a way to solve problem. Green Audit is one kind of professional approach towards a responsible way in utilizing economic, financial, social and environmental resources. Green audits can "add value" to the management approaches being taken by the college and is a way of identifying, evaluating and managing environmental risks (known and unknown). There is scope for further improvement, particularly in relation to waste, energy and water management. The college in recent years considers the environmental impacts of most of its actions and makes a concerted effort to act in an environmentally responsible manner. Even though the college does perform fairly well, the recommendations in this report highlight many ways in which the college can work to improve its actions and become a more sustainable institution.

8.2 Observations and Comments

Land

- 1 The land use attributes include built-up area, Play Ground, Parking lots, storm water drains and green cover.
- 2 The campus has a moderate green area of 3539 Sq. M i.e.
 0.875 acres with a built up area of 8802 Sq. M. The green cover constitutes 15% of the total area.
- 3 As per the National Forest Policy, 1988 and the new draft National Forest Policy minimum of **one-third** (or **33%**) of **total land area of India** should be under forest cover (fc) or tree cover (tc).

- 4 The campus green cover is only 15% with a shortage of 18% as per the norms prescribed by National Forest Policy 1988,
- **5** The campus should take measures to increase the green cover by 18% either on campus or off-campus.

6 Biodiversity

1 The campus has 28 fully grown trees, herbs, shrubs and medicinal plants.

Carbon absorption by flora in the Institution

2 The overall carbon sequestration potential of the campus is 192 kg of CO₂. This implies that the campus has the maximum carbon sequestration potential and stands as a model institution.

REFERENCES

- **Agarwal.S.K,** Environmental Audit," Environmental Management New concept, Eco-informatics, APH publishing corporation.Vol.1, pp (135-165). 2002
- Alagappa Moses and Sheeja. K.M. Campus Environmental Audit And Assessment for Water and Wastewater Management. Dissertation submitted to Bharathidasan University. 2005
- Alagappa Moses, A., Edwin Chandraskaran. G and JhonselySajitha, C. Design and layout of waste water Treatment plant for a college community, Indian Journal of Environmental Protection, Vol:16(6),pp(401-405). 1995
- Al-TamimiNedhal, FadzilSharifahFairuz Syed. Energy Efficient Envelope Design for High-Rise Residential Buildings in Malaysia. Architectural Science Review. 2012; 55(2):119-27.
- Al-TamimiNedhal, FadzilSharifahFairuz Syed and Abdullah
 Adel.Relationship between Window-to-Floor Area Ratio and Single Point Daylight Factor in Varied Residential Rooms in Malaysia. ISSN
 (Print): 0974-6846: ISSN (Online) : 0974-5645. Indian Journal of
 Science and Technology, Vol 9(33), DOI:
 10.17485/ijst/2016/v9i33/86216, 2016
- **APHA American Public Health Association (APHA).** Standard methods for the examination of water and waste water,20th Edition. 1998
- **April A. Smith., 'Campus Ecology.** A guide to assessing environmental quality and creating strategies for change'. April A. Smith and the student environmental action coalition. Copyright 1993 by April Smith and the tides foundation / student E.A.C., Published in the united states by living planet in the united states by living planet press. Pg-foreword, 1993.

- Badrinath.S.D and Raman.N.S. Environmental Audit-A Management Tool, Indian Journal of Environmental protection, vol:13 (12),pp(881-894), 1993
- **Chandra Sekar K., Daniel R.J.R. and GadagkarR**. Animal species diversity in Western ghats. Technical report 5, centre for ecological sciences, Journal of the Indian institute of Science, Bangalore. 1984.
- Chandra Prakash Naga, Chandra Shekhar Sen, Shakti Singh Dagdi. Energy audit in Govt. Polytechnic College, Ajmer campus. Vol-3 Issue-3 2017. IJARIIE-ISSN(O)-2395-4396. www.ijariie.com
- Clair N. Sawyer, Perry L. Mc Carty, Gene F. Perkin. Chemistry for Environmental Engineering and Science, Mc. Graw Hill Series in Civil and Environmental Engineering. 2002
- Fadzi SF, Tamimi ANA. The Impact of Varied Orientation & Wall Window Ratio (WWR) to Daylight Distribution in Residential Rooms. Malaysia: CIBW107 International Symposium. 2009; p. 478-86.
- **Gary.V.K.,SimmiGoel and Renuka Gupta, 2001** Ground water Quality of an average Indian City : A case study of Haisar (Haryana), Journal of Indian Water Work Association,Vol:33(3), pp (237-242).
- IMA and FEMDAT (2001) "Guidelines on Biomedical Waste Management" Why? What? How? When? For generators in Tamil Nadu. Prepared by Indian Medical Association, Tamil Nadu branch (IMA), and Federation of Medical and Dental Association of Tamil Nadu (FEMDAT). Chennai.
- **Kim J, de Dear R**. Nonlinear relationships between individual IEQ factors and overall workspace satisfaction. Build Environ 2012;49:33 e44.
- Liz Farkaz, Chole Hartley, Matt McTavish, Jenny Theherge, Tony waterfall, 1991, Investigation of a campus cyclical water system.

- Mathew K.M., 1995. An excursion flora of central Tamil Nadu, India. Oxford and IBH publication, Co., New Delhi.
- Naba Kumar Patnaik, 2000, Environmental Audit-A perspective of Environmental Management and Audit, Edited by: Sasibhushana Rao p, and MohanaRaoP, Chap:24.,pp(282-291).
- Nanda Kumar,1998 Waste Water treatment by using Wind Mill Savonious Rotor M.Sc., Dissertation submitted to Bharathildasan University, Tiruchirappalli.
- **Olaniya, M.S., R.V.Bhoyor and A.D.Bhide(1998)** Effects of solid waste Disposal on land.Indian journal of environmental health.
- Phillips D. Taylor & Francis: Lighting Modern Buildings. 2013 Jun 17.
- **Ramanujam.R,2001,** water Conservation-Need of the day Method and techniques in Kerala context, Journal of Indian Water work Association, Vol:33(!),pp(5-13)
- **Ramaswamy S.V. and Razi B.A., 1973** Flora of Bangalore dt., Prasaranga University of Mysore.
- **Ravichandran and Manivanan.V,2004**, Environmental audit for BHC campus with reference to water & Energy.
- **Rob Fetter and Alyssa Mudd, 1993**, The Brown, the Green, and the Grey: Auditing water Use at Brown University.
- Santra S.C., Chatterjee T.P. and Dos A.P., 2005. College Botany practical vol I and II New central Book Agency privates Ltd., Kolkata.
- **Shyuamal L., 1994.** The birds of Indian Institute of science campuschanges in Avifauna, Newsland 34(1), 7-9.
- Sivaramakrishnan K.G., Venkataraman K., Moorthy R.K., Subramanian K.A., and Utkarsh G., 2000. Aquatic insect diversity and ubiquity of

the Western Ghats, centre for Research in Aquatic Entomology, Department of Zoology, Madura college, Madurai.

- Srinivasa Reedy, 2001, water for New millennium, journal of Indian Water Works Association, vol:33(2)(135-142).
- **SurendraVarma., 1999**. Bird diversity on the campus of the Indian Institute of science, Asian Elephant Research and conservation centre, centre for ecological sciences, Indian institute of science (llSc) Bangalore.
- Suresh H.S and Harish R. Bhat ., 1998. Flora of the Indian Institute of science campus, Centre for Ecological sciences, Journal of the Indian Institute of science, Bangalore.
- **UmshMolani, 2000**, Environmental Audit, Environmental Management and Audit, Edited by:Sasibhuxhana Rao P and Mohana Rao P,Chap(28),pp(323-329).
- **UNESCO**. Norms and Standards for Educational facilities. Training materials in educational planning and administration facilities. Division of Educational Policy and planning. EPP/TM.17. 1985.
- **Venkatraman,G,1966,** A note on the occurrence of large scale fish mortality along the Chaliyar River near BeyPore.J.Mar.Biol.Ass.Indian vol:8.