GREEN AUDIT REPORT

2018-22

TURKU HANSDA LAPSA HEMRAM MAHAVIDYALAY
MODIAN, MALLARPUR, BIRBHUM 731216
Date of Audit: 13.05.2023 (Thursday)

Endorsement of the External Green Audit Team Members:

Sl. No.	Name with Designation	Signature and Seal
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4.	Dr. Chandrik Malakar Assistant Professor Department of Zoology Suri Vidyasagar College Contact No: 7501710818 Mail: chandrik.malakar@gmail.com	DR. CHANDRIK MALAKAR ASSISTANT PROFESSOR SURI VIDYASAGAR COLLEGE MOB:- 7501710818 / 7908060836

Endorsement signature by Green Audit Team Members:

Sl. No.	Name with Designation	Signature and Seal
1.	Dr. Amit Kumar Chakrabarty Principal, THLH Mahavidyalay, Mallarpur Email: tlmprincipal@gmail.com Contact No.:	Principal THLH Mahavidyalay Madian, Mallarpur, Gonpur Birbhum, W.B
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ACKNOWLEDGEMENT

Internal Green Audit Committee of THLH Mahavidyalay takes this opportunity to appreciate & thank the management of THLH Mahavidyalay, Mallarpur for giving us an opportunity to conduct green audit for the Institution.

The exercise was a timely exercise as we could feel when we were conducting the survey and discussing with the students and staff. The voices that wanted to be heard welcomed the move. It was absolutely necessary to probe the green balance and the perceptions that prevail within the Institution.

The Green Audit wouldn't have been complete without the help of IQAC of the college who provided the relevant data.

Signature of
an external Member

Principal
Anandananda Mahavidyalaya
Athia, Birbhum

Signature of
an internal Member

Co-Ordinator, IQAC
Turku Hansda Lapsa Hemram Mahavidyalay
Mallarpur, Birbhum, 731216 (W.B.)

Signature of Principal

Principal
THLH Mahavidyalay
Madian, Mallarpur, Gonpur
Birbhum, W.B

AREAS FOR IMPROVEMENT

QR Code System on Tree: While the world seems to be going digital, people lack the time to read books and gather the information they contain. Hence, college can provide QR codes on the trees for its information and to exploit the rapidly growing platform for a unique purpose.

Eco-restoration programmes Frame a holistic campus development plan with long-term eco-restoration programmes for replacing exotic acacia plantations with indigenous trees.

Vehicle pooling: Vehicle pooling should be promoted both among students and faculty and use of bicycles should be promoted as a policy of Institute

OTHER SUGGESTIONS & RECOMMNEDATION

Some of the very important suggestions are:

- Adopt the proposed Environmentally Responsible Purchasing Policy, and work towards creating and implementing a strategy to reduce the environmental impact of its purchasing decisions.
- Increase Awareness of Environmentally Sustainable Development in college campus.
- Practice Institutional Ecology- Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.
- Involve All Stakeholders- Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development.
- Collaborate for Interdisciplinary Approaches- To develop interdisciplinary approaches to curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.
- Implement strategies to increase the practice of reduce, reuse and recycle on campus.
- Develop a butterfly garden that arouses appreciation towards flora and fauna diversity.
- Name all the trees and plants (Plant barcodes) with its common name and scientific name.
- Arrange training programmes on environmental management system and nature conservation.
- Ensure participation of students and teachers in local environmental issues.
- Renovation of cooking system in the canteen to save gas by installation solar water heater system with heat pump.
- Avoid plastic/thermocol plates and cups in the college level or department level functions.

i. Introduction

Green campus is an area of the Organisation or the Organisation as a whole itself contributing to have an infrastructure or development that is structured and planned to incur less energy, less water, less or pollution free, less or no CO_2 emission (Aparajita, 1995). Green Campus Audit is a tool of the environment management system which is used methodologically for protection and conservation of environment and sustenance of the ecosystem. Green campus constitutes the environmental friendly practices and education combined to promote sustainable and eco-friendly practices along with userfriendly technology in the campus. It creates environmental culture, develops sustainable solutions to environmental problems and provides solutions to various social and economic needs (APHA, 1981). It provides the concept of Green building and oxygenated building which in turn provides a healthy atmosphere to the stakeholders.

Green Campus Audit ensures the Organization's campus should be greenish with large diversity of trees, herbs, shrubs, climbers and lawns to reduce the environmental pollution and soil erosion, also useful for biodiversity conservation, landscape management, proper water irrigation, natural topography and vegetation (Gowri and Harikrishnan, 2014). The maintenance of an eco-friendly campus ensures a neat and clean environment. For the benefit of stakeholders, solid state management, recycling of water, disposal of sewage and waste materials including electronic and biomedical wastes, plastic use, etc. should be followed consistently in the organization campus.

Green Campus Audit procedures includes the definition of green audit, methodology on how to conduct Green audit at Educational Institutions and Industrial sectors as per the checklist of Environment Management Systems and International Standards on ISO 14001:2015, Indian Green Building Council, Swachh Bharath Scheme under Clean India Mission to understand the principles and importance of various audits in the context of the organization and risk assessment at 360° views (Gnanamangai et al., 2021). It analyses to help the educational institutions and industries to maintain eco-friendly environment and personal hygiene to various stakeholders and supports the nation as a whole for the noble cause of environmental protection and nature conservation which in turn enhances the quality of life to all living beings (Arora, 2017).

ii. Role of Educational Institutions in India

Educational institutions are playing important role in a nation's growth and development which starts from maintenance of green campus without harming the environment. A clean and healthy environment in an Organization determine effective learning and provides a conducive learning environment to the students. Educational institutions are asked both Central and State Governments to give eco-friendly atmosphere to the stakeholders. In addition, all the Educational institutions are asked to save the environment for future generations and to solve the environmental problems such as recycling of solid wastes and wastewaters, plastics usage, napkin disposal water consumption, water harvesting and storage mechanisms, etc. through Environmental Education. Implementing Swachh Bharath Abhiyan Scheme launched by the Indian Government plays by the Educational institutions plays a major role in terms of giving neat and clean environment to

tribal, rural and urban people across the country, besides, the regular and conventional activities carried out by NSS, NCC, Nature club, Eco club, Science club, Fine Arts club, Flora and Fauna club, You Red cross unit, etc. Seminar, Conference, Workshop, training and awareness programmes on Biodiversity conservation education, environmental awareness programmes, etc. may be conducted periodically by the Management and Administrative people of an Organization to the stakeholders.

Green campus auditing is a systematic process whereby an organization's environmental performance is checked against its environmental policies and compliances of the Government guidelines. This audit process is definitely useful for the Educational institutions to maintain the campus neatly and can give pure atmosphere to the students and staff members including Management people. It is like an official examination of the environmental effects on an organization's campus as per the Government guidelines. The audit report may be useful to improve the organization's campus significantly by following the recommendations and suggestions given in the report.

iii. BACKGROUND OF GREEN AUDIT

Environmental audit or Green audit is a general term that can reflect various types of evaluations intended to identify environmental compliance and management system implementation gaps, along with related corrective actions. In this way they perform an analogous (similar) function to financial audits. The term "Green" means eco-friendly or not damaging the environment. This can acronymically be called as "Global Readiness in Ensuring Ecological Neutrality" (GREEN). "Green Auditing", an umbrella term, is known by another name "Environmental Auditing". There are generally two different types of environmental audits: compliance audits and management systems audits. Compliance audits tend to be the primary type in the US or within US-based multinationals. The term "protocol" in environmental audit means the checklist used by environmental auditors as the guide for conducting the audit activities. Current technology supports many versions of computer-based protocols that attempt to simplify the audit process by converting regulatory requirements into questions with "yes", "no" and "not applicable" check boxes. Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It is based on exercises that can help to measure the risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit. This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. This also helps to monitor the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programmes. The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The methodology include: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations.

It works on the several facets of 'Green Campus' including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity. 'Green Audit' aims to analyze the environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. Green audit is assigned to the criteria 7 of NAAC. There is main three pillars i.e., zero environmental foot print, positive impact on occupant health and performance and 100% graduates demonstrating environmental literacy. The goal is to reduce CO_2 emission, energy and water use, while creating an atmosphere where students can learn and be healthy. The college has to work on the several facets of 'Green Campus' including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity.

iv. METHODOLOGY

In order to perform green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

- Water management
- Energy Conservation
- Waste management
- E-waste management
- Green area management

A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use and method(s) of conservation. Water is used for drinking purpose, canteen, toilets, laboratory and gardening. Loss of water must be checked, neither by any leakages, nor by over flow of water from overhead tanks. The green audit practically involves use of renewable sources, conservation of the energy, rain water harvesting program, and efforts of carbon neutrality, plantation of trees, E-waste management and hazardous waste management.

v. AIMS AND OBJECTIVES OF GREEN CAMPUS AUDIT

- To recognise the initiatives taken towards the green campus by means of gardening by the Organization.
- To identify and provide baseline information to assess threat and risk to the ecosystem due to Organization development.
- To recognise and resolve different environmental threats of the Organization. • To grow a large number of oxygen producing and carbon-di-oxide absorbing plants in the campus to give a pure atmosphere to the stakeholders.
- To ensure proper utilization of resources available in the surrounding areas towards future welfare of the community.
- To set a procedure for disposal of all kinds of wastes and use green cover as a carbon sink for pollution free air.

- To assess the greenish nature of an Organization campus in terms of trees, herbs, shrubs, climbers, twins, lianas, lawns and reflected in reducing the environmental pollution soil erosion, biodiversity conservation, landscape management, natural topography and vegetation.

vi. SCOPE AND GOALS OF GREEN AUDITING

The Management of the Organization (Auditee) should be shown their inherent commitment towards making ecofriendly atmosphere through the green auditing and ready to encourage all types of green activities. They should promote all kinds of green activities such as conduct of environment awareness programmes, campus farming, planting trees, maintenance of greening, irrigation, use of biofertilizers and avoidance of chemical fertilizers and agrochemicals on the campus etc., before and after the green auditing. The management should formulate 'Green and Environment Policies' based on green auditing report. A clean and healthy environment should enhance an effective teaching and learning process and provides a conducive learning environment to the stakeholders. They should create awareness on the importance of environment through environmental education among the student members. Green Audit is the most efficient and ecological way to manage environmental problems.

Green campus audit may be beneficial to the campus in improving the greenery activities which in turn useful to save the planet for future generation. Green campus audit is a kind of professional care and a simple indigenized system about the environment monitoring in terms of planting a large number of trees which is the responsibility of each and every individual who are the part of economical, financial, social, environmental factors. It is necessary to conduct green audit frequently at least once in three years in campus because students and staff members should aware of the green audit and its advantages to save the planet by means of 'Go green concept' and help the institution to set environmental examples for the community, and thereby to educate the young learners. Green audit is a professional and useful tool for an Organization to determine how and where they are maintaining the campus eco-friendly manner. It can also be used to implement mitigation measures is a win-win situation for all the stakeholders and the planet. It gives an opportunity for the development of ownership, personal and social responsibility for the stakeholders.

vii. BENEFITS OF THE GREEN AUDITING

There are several benefits on conduct of green audit by the Organization which may be definitely useful to improve the campus significantly after receiving the report of audit. The green campus audit contained methodology followed and both qualitative and quantitative measurements including physical observation of greeneries in terms of growing of terrestrial and aquatic plants, animals and microflora in the campus. The natural and planted vegetation and their maintenance are also considered in the organization campus through topography, landscape management design and soil erosion control in environment sustainable development. The following are the major benefits of the green auditing.

- Know the status of development of internal and external Green campus audit procedures and implementation scenario in the Organization.

- Establishment Green campus objectives and targets as on today as per the Green and Environment Policy', 'Indian Biodiversity Act' and 'Wildlife Protection Act of the Ministry of Environment, Forests and Climate Change, New Delhi and World & Indian Green Building Council concepts.
- Assigning the roles and responsibilities of Environmental Engineer and Agriculture Staff to give to improve green initiatives.
- Development of ownership, personal and social responsibility for the Organization and its environment and developing an environmental ethic and value systems to young generations.
- Enhancement of the Organization profile and reach the global standards in proving the green campus and eco-friendly atmosphere to the stake holders.
- Improving drinking water / RO water / Bore well water / Open well water / Pond water / Municipal or Corporation water quality through the analysis of Physico-chemical properties of water.
- Creation of wastewater treatment facility and solid waste management provision in the campus for recycling of wastewater and solid wastes to minimize the air, water and soil pollution.
- Suggested of availability of Biogas plant to the management to restrict the usage of fossil fuel in cooking purposes.
- Implementing status of the rain harvesting system, water reservoirs, percolation pond, etc. in the campus to increase the ground water level.
- Establishment of terrace garden, herbal garden, kitchen, zodiac, ornamental gardens, etc. for enhancing teaching and learning and commercial exploitation.
- Treated water consumption towards plant cultivation, canteen, hostel, machinery cleaning, transport, toilet use and etc. on water consumption and per capita water consumption per day calculation.
- Studying the campus flora by making complete data on total number of both terrestrial and aquatic plants, herbs, shrubs, climbers, twins and grasses.
- Survey of campus fauna by conducting the number living and visiting animals, insects, flies, moths and worms in the campus.
- Documentation of the number of oxygen producing and carbon dioxide absorbing plants planted in the campus to give pure atmosphere to the stakeholders.
- Operation of water irrigation, drip and sprinkler irrigation methods to improve the green campus.
- Studying biodiversity conservation through Life Sciences and Biological Sciences people to conserve economically important, rare and endangered plant and animal species in the campus ecosystem.
- Recommendation in use of biofertilizers, organic and green manures, cow dung manures and farmyard manures for the cultivation of plants to protect the environmental health.
- Conduct of outreach programmes for dissemination of Green Campus motto and Green pledge initiatives to rural, tribal and urban people through Eco club, Nature club, Science club, Fine Arts club, Youth Red Cross unit, NCC and NSS bodies.
- Academic credentials like major and minor Projects, Dissertations and Thesis work on green campus, environment protection and nature conservation by the students and staff members.

- The plants available in the campus must be tagged with their common name and Botanical name for the stakeholders to impart the knowledge on medicinal and ornamental, economic and food values of plant varieties.
- MoU may be signed with Government and non-Governmental Organizations (NGOs) to utilize the resources for nature conservation and environmental protection.
- Implementation of Government schemes (Swatch Bharath Abhiyan under Clean India Mission) to give pure and safe water to rural people and teach the importance of cleanliness of toilets and restrooms.
- Conduction of awareness programmes and cultural activities on global warming, environmental changes and ecosystem maintenance to the stakeholders.
- Steps taken for organic, inorganic, toxic, e-waste, biomedical, food, sewage waste management, segregation of wastes and reuse methods.
- Public transport, low-emitting vehicles and control of car smokes and exhaust towards carbon accumulation in the campus by carbon footprint studies.
- Implementation of advanced methods for watering plantations (Drip irrigation, Sprinkler irrigation, etc.) and use of metering for water utility, IoT based watering, automation, water device, remote water lines, etc.
- Percentage of Organization's budget for environment sustainability efforts and green campus initiatives planning and efforts.
- Campus facilities for disabled, special needs and or maternity care including security, safety and health infrastructure facilities for stakeholder's wellbeing.
- More efficient resource management provide basis for improved sustainability and creation of plastic free campus to evolve health consciousness among the stakeholders.
- Impart environmental education through systematic environmental management approach and improving environmental standards by making a benchmark for environmental protection initiatives.
- Best practices followed on green campus initiatives in the Organization listed and disseminated among the stakeholders.
- Recommendations for improving the green initiatives, planning and efforts in the campus after audit report to improve further.

viii. Target Areas of Green Auditing:

Green campus audit is nothing but a professional tool to assess the greenery activities in the educational institutions and give a value addition to the campus and considered as a resource management process. Eco-campus concept mainly focuses on the efficient use of energy and water; minimize waste generation or pollution and also economic efficiency. Green campus audit process may be undertaken at frequent intervals and their results can illustrate improvement or change over time. Eco-campus focuses on the reduction of carbon emissions, water consumption, wastes to landfill and enhance energy use conservation to integrate environmental considerations into all contracts and services considered to have significant environmental impacts.

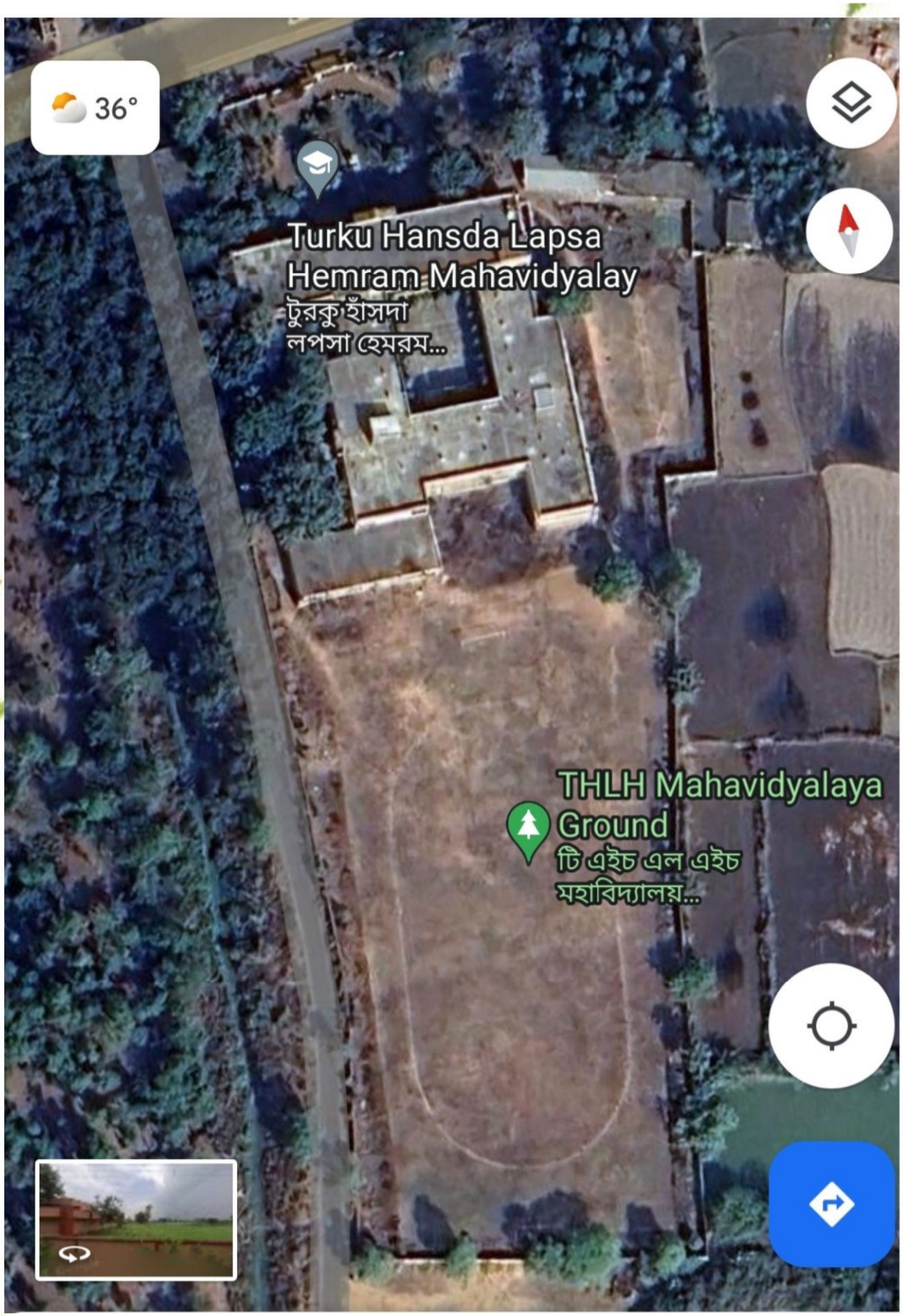
There are several target listed in the Green audit process in which a few are taken into consideration as per the Indian scenario is concerned. They are water use efficiency, energy use efficiency, solid, e-waste biomedical, food, sewage waste management and reuse methods, planting of oxygen producing and carbon dioxide absorbing plants, landscape management, topology, vegetation, soil erosion control, carbon footprint due to use of vehicles, electricity and fossil fuels. drinking water quality supply, Biogas plant, rain harvesting system, water reservoirs, percolation pond, establishment of various herbal, terrace and ornamental, gardens, campus and flora fauna, water irrigation, implementation of Government schemes, conduction of awareness programmes management, public transport, low-emitting vehicles and control of car smokes and exhaust, Organization's budget for greenery activities, campus facilities for disabled, special needs and or maternity care, security, safety and health infrastructure facilities for stakeholder's wellbeing.

ix. Study area of Flora and Fauna diversity

THLH Mahavidyalay Campus is situated on the Centre of Coimbatore city. College campus is considered as one of the Green Educational Institution in Mallarpur with a rich flora and faunal diversity. The campus is quite clean, green and has much less pollution to the rest of the city. The College campus is important not only from education point of view but also as green lung. It is frequently visited by several nature enthusiasts to study the floral and faunal aspects. Biodiversity provides a useful measure of the quality of the environment and ecological studies are important aspects of environment, in view of the consideration of environmental quality and protection of natural flora and fauna.

x. Topography

THLH Mahavidyalay consists of an environment of moist dry land at an altitude of 39.72 m mean sea level, 87.69 E of longitude and 24.07 N latitude.



CAMPUS SATELLITE VIEW

College Campus Diagram



Green Audit Information

1. GENERAL INFORMATION

1.1 Year of Establishment of college:

THLH MAHAVIDYALAYA, established on 1ST August in 2006, is the general degree college in Mallarpur, Birbhum district.

1.2 History behind the establishment of the college (pl include following records):

a. Details of the College

Our college under the Green Canopy of Shal & Mahuya Forest, named after the two great tribal leaders of Birbhum, Turku Hansda & Lapsa Hembram. THLH Mahavidyalay was established on 1st August, 2006 with a view to catering higher education to the aspiring students of a wide area surrounding Mallarpur, Birbhum. THLH Mahavidyalay of Birbhum District in West Bengal is situated in a plot of 5 acre land on the Raniganj-Suri-Moregram National Highway 60 and is well-connected with the District Head Quarter Suri and nearest Sub-Divisional Town Rampurhat. The college is linked by road & rail with the rest of the state and the country.

The small rural town Mallarpur is located on Howrah-Burdwan-Sahibganj loop line (ER) railway route. The college is located at a distance of 3 Km from both Mallarpur Railway Station (MLV) and Bus Stop (Bahina More) and about 17 Km from Rampurhat and 33Km from Suri by National Highway 60. At the west of it flows the irrigation Canal adjacent to the green of the Shal and Mahuya of Gonpur Forest.

Twin villages-Madian and Mehednagar-exist at the south of the college and along the northern boundary of it runs 60 National Highway from Panagar to Moregram. The east is open towards the horizon with the sometime green and sometime golden crops of the villagers.

b. Initial and Present UG/PG subjects

1. Bengali	4. Geography	7. Political Sci.	10.Mathematics
2. English	5. Santali	8. Philosophy	11. Chemistry
3. History	6.Sanskrit	9. Physical Education	12. Physics

c. Records on NAAC grading, if any

Our college is recognized by NAAC on the recommendation of the duly appointed peer team with a CGPA of 2.13 on a seven point scale at B grade, which is valid till November 04, 2021.

d. Hostels, if any

YES, we have a small hostel with two rooms for SC & ST male students.

e. Project related to environment, if any YES

1.3 Total campus area:

24417.61 sq. m

1.4 Total built up area:

12078.8 sq. m

1.5 Total open space area:

12399.47 sq. m

1.6 Total green area:

1486 sq. m

1.7 Whether the college is implementing the Green Policy for the first time:

The college had already implemented the Green Policy on FEB 17, 2018.

1.8 Whether green audit is followed annually, if so, please produce the year-wise recommendations of the auditor along with report: NO

1.9 Whether college has constituted the "College Environmental Committee",

YES, college has constituted "Green Campus Committee"

1.9.10 Name of the Committee members

Dr. Amit Kumar Chakrabarty, Principal,(Chairperson)
Prof. WASHIM RAJA, Department of Chemistry (Convener)
Prof. ASRAFUL HOSSAIN, Department of History
Prof. SUJAY DUTTA, Department of Geography
Prof. MANU MARDI, Department of Santali
DIPAK GHOSAL, Cashier

1.9.2 Number of meetings conducted so far:

36 meetings were arranged during 2018-22 session.

1.9.3 Resolution of the meetings:

Attached as Annexure A.

1.9.4 Action taken by the Committee

Promote student involvement: It was discovered that student community, which is a reliable internal backbone of college as well as our society, should be encouraged more to get more accustomed to the environment.

❖ Expert opinion, hiring, consultation and analysis: It was additionally discovered that an expert input would be very helpful in terms of ensuring a robust routing, assessment, and assessment of the information gathered. This is because tested procedures would be used appropriately, resulting in an efficient process. This cooperation would be successful in obtaining improved concepts, guidelines, and assistance for carrying out, assessing, and constantly monitoring the process.

Objectives: The following are the key areas that the Green Audit procedure concentrated on:

• To foster a healthy environment in the campus

• To raise understanding of environmental obligations and regulations.

• To find ways to reduce costs by eliminating and efficiently managing wastes

1.9.5 Future programmes of the Committee

Here's a future programes for the **Green Campus Committee** that incorporates various sustainable initiatives:

1. **Rainwater Harvesting and Purification**:
    - Install modern equipment to collect Pollution-free rainwater from rooftops.
    - Use advanced filtration techniques to make the collected rainwater **drinkable**.
    - Educate students and staff about the importance of rainwater conservation.
2. **Rooftop Solar Panels**:
    - Set up **grid-connected solar panels** on the campus rooftops.
    - Generate clean energy from sunlight to power campus buildings.
    - Promote renewable energy awareness and encourage solar adoption.
3. **Sparrow Conservation Area**:
    - Create designated areas with nesting boxes and feeding stations for sparrows.

- Monitor and protect sparrow populations by providing suitable habitats.
- Conduct awareness campaigns to involve the campus community in sparrow conservation efforts.

4. **Vermicomposting Area**:
   - Establish a vermicomposting facility on campus.
   - Use organic waste (such as food scraps and garden trimmings) to produce nutrient-rich compost.
   - Educate students about composting and encourage them to participate.
5. **Solar Hot Water Setup**:
   - Install solar water heaters in hostels, cafeterias, and other common areas.
   - Use solar energy to heat water for bathing and other purposes.
   - Reduce reliance on conventional electric geysers.
6. **Electricity Central Control Setup**:
   - Implement an intelligent central control system for electricity usage.
   - Monitor energy consumption in real-time and optimize usage patterns.
   - Integrate with smart meters and automate energy-saving measures.
7. **Continuous Air Quality Monitoring device and Noise Meter**:
   - Deploy continuous air quality monitoring equipment (high-value sampler) to assess indoor and outdoor air quality.
   - Measure pollutants and particulate matter levels.
   - Install noise meters to monitor noise pollution levels on campus.

1.9.6 Policy enforcement strategies

Policies are adopted according to:

1. Environment (Protection) Act of 1986
2. Water (Prevention and Control of Pollution) Act of 1974, amended in 1988
3. Air (Prevention and Control of Pollution) Act of 1981, amended in 1987
4. Fire Prevention and Fire Safety Act of 2005

Green policy enforcement strategies that colleges has implemented on its premises to promote sustainability and environmental consciousness by:

1. **Clean Campus Initiatives**:
    - Regular cleanliness drives involving students and staff members to raise awareness about cleanliness and hygiene.
    - Encouraging staff members to participate in campus cleanliness drives.
    - Removal of waste materials like broken furniture and unusable equipment.
2. **Landscaping Initiatives**:
    - Planting trees and maintaining green spaces on campus.
    - Creating a pleasant and eco-friendly environment through landscaping.
3. **Infrastructure Improvements**:
    - Installing a **solar street-lamp** to harness renewable energy.
    - Using energy-efficient equipment.
    - Implementing a **rainwater harvesting system** for water conservation.
4. **Waste Management Processes**:
    - Managing solid waste, e-waste effectively.
    - Encouraging recycling and waste reduction.
5. **Awareness Initiatives**:
    - Establishing environment-centric student societies and department activities.
    - Conducting regular **green audits** and **energy audits** to assess sustainability efforts.
    - Striving to make the campus **plastic-free**.
    - Minimizing paper usage through e-governance policies.

1.10 Whether college has conducted any awareness/responsibility programme among the staff members:

YES, we arrange programmes like observation of Energy Conservation Day, Plastic Free Day, Recycling Day every year to bring awareness among the staff members.

1.11 Whether all the departments/teachers/non-teaching members/students are aware about the need of the environmental protection and audit:

YES, all stakeholders are concerned about it.

1.12 Whether college has involved the students as volunteers in greening programmes:

YES, College has NSS & NCC who take care of plantation drive for greening our college premises and performing the community services in nearby locality.

1.13 Whether construction/demolition/repairing are in compliances with

green standard:

Yes, College has renovated rain-water harvesting storage body, composting area, Also college has reconstructed ground water recharge system and installed some new solar street lamps.

1.14 Whether college has conducted any workshop/seminar/lecture on environmental awareness programme inside and/or outside the campus:

Yes, Green Campus Committee conducted following programmes about it:

1. No Smoking Day
2. World Recycling Day
3. Plastic Free Day
4. World Environment Day
5. World Car Free Day
6. World Energy Conservation Day
7. International Bio-Diversity Day

1.15 Whether the institute has department of Law/Environmental Science/3-Year degree Course/Course curriculum

Yes, College has Environmental Study course in curriculum. Environmental Study is mandatory for all SEM I students.

1.16 Whether college provides any community services, if so, give details (as Annexure):

Yes, our NSS wings and NCC unit are performing community services. Details are given in Annexure E.

Name of the activity	Year of the activity
5 Days NSS Special Camp	14-02-2019 to 18-02-2019
Swachha Bharat Abhiyan	02-10-2019
Special Awareness Camping on "Clean Village Green Village"	06-12-2021
Community development programme on "Sal Leaves in Sustainable Plate Making by Tribal Women"	29-12-2021
Swach Bharat Swach Gram on "Hum Sabke Ek Hi Nara Hara Bhara Ho Gram Hamara"	24-03-2022
Community development programme on "Biodegradable Ieaf Plates: A Sustainable Livelihood Option for Tribal Women", Managerpara	11-04-2022
Community development programme on "Tribal Community Devlopment and Women Empowernment through Biodegradable Shaal Ieaf Plate Making"	18-04-2022
Social Forestry programme on "World Environment Day" at College campus	06-06-2022
Yoga programme on "The International Day of Yoga"	21-06-2022

1.17 Whether the students are aware about the use of medicinal plants

Yes, students are aware about medicinal plant, different type of awareness has been done such as lecture, field visiting and seminar by Green Campus Committee with collaboration of other departments.

1.18 Comments on the following:

1.18.1	**Plantation program:**	Y
1.18.2	**Formation of Natural club/Eco club:**	Y
1.18.3	**Management of natural resources, wildlife, conservation of species:**	N
1.18.4	**Any project sponsored by national funding agency/NGO, independent project related to environmental issues:**	N
1.18.5	**Is there any incidence of burning of plastics containing garbage within the campus for necessary reduction:**	Y
1.18.6	**Celebration of 5th June, Ozone Day, Earth Day etc.:**	Y

1.18.7 **Number of field visits/survey records:**

Number of Field visits by Geography department are 03 form 2019 to 2022

1.18.8 **Campus biodiversity register**

Yes, our college follows biodiversity register annually form 2018.

1.19 General aspects

1.19.1 **Campus cleanliness**

The campus cleanliness awareness and programme is an annual event held on October 2nd, coinciding with the birth anniversary of Mahatma Gandhi. Our college continued the tradition of organizing a comprehensive cleanliness drive to promote awareness and encourage active participation among students and staff. The primary objective of the programme was to instil a sense of responsibility towards maintaining cleanliness in and around the campus. It aimed to educate participants on the importance of cleanliness for a healthy environment and to foster a culture of cleanliness that extends beyond the college premises.

1.19.2 **Rainwater harvesting**

Rainwater harvesting is a sustainable practice that has been implemented in our college to conserve water and reduce the dependency on ground water supply. This report outlines the setup and benefits of the rainwater harvesting system installed in our college premises. The college has built large-capacity artificial pond to store the harvested rainwater. The rainwater harvesting system has proven to be a valuable asset for our college. It not only conserves water but also promotes environmental sustainability and provides a learning platform for students.

1.19.3 **Solar street-lamps**

The solar street-lamps installed at our college since May 8, 2015 and some were installed from 2022. The initiative aimed to provide sustainable and cost-effective lighting solutions for the college premises. Total 6 solar street-lamps were installed in Main pathways, Medicinal Garden, Canteen area and in the top of 'মুক্তধারা' . The use of renewable energy has contributed to the college's sustainability goals by reducing carbon emissions.

1.19.4 **Carbon dioxide neutrality on the campus by developing greenery**

Our college campus is achieving carbon dioxide neutrality through the development of greenery:

- Planting trees and creating green spaces to offset our carbon emissions.
- Encouraging car-lite campuses and promoting green transportation options.
- Achieving carbon neutrality involves a holistic approach, considering various aspects like energy usage, transportation, and green infrastructure.

We are actively creating green spaces, planting trees, and implementing sustainable practices to achieve carbon dioxide neutrality and contribute to a more environmentally friendly future

1.19.7 **Man-made nest to attract some birds to maintain ecological balance**

NA

1.19.8 **Restriction in use of plastic and plastic products**

We are committed to creating a cleaner and more sustainable environment. As part of this effort, our college has implemented strict restrictions on plastic usage. Our college prohibits the use of single-use plastics within the institution's premises, and hostels. Our college actively participates in 'PLASTIC FREE DAY' on May 25, every year.

1.19.9 **Culture of some ducks, swans etc., for scenic beauty in pond or any water body resources (if available)** NA

1.19.10 **Green monitoring by green committee/volunteers/team**

NA

1.19.11 **Training on vermicomposting**

NA

1.19.12 **Celebration of 'No vehicle Day' on a particular day**

On September 22 each year, our college enthusiastically observes "No Vehicle Day". This initiative aims to reduce carbon emissions and promote the use of public transportation. By encouraging students,

faculty, and staff to leave their vehicles at home for a day, we collectively contribute to a cleaner environment and raise awareness about sustainable commuting options.

1.19.13 **Dams inside the campus to meet the demand for water**

NA

1.19.14 **Installation of fire safety instruments in all the buildings/departments**

Our college has taken a significant step towards ensuring the safety of everyone on campus. All buildings are now equipped with fire safety instruments. These installations will play a crucial role in preventing and managing fire incidents, safeguarding lives, and protecting property.

1.19.15 **Toilets/separate toilets for differently abled students**

We are pleased to announce that our college has taken significant steps to ensure accessibility and inclusivity for differently-abled students. As part of our commitment to providing equal opportunities. Our construction plans prioritize creating a disabled-friendly environment. This includes installing ramps, rails, and other necessary modifications to ensure smooth mobility and independent functioning for differently-abled individuals.

1.20 Overall noise level

We have randomly selected the following data from the student's survey on noise level in campus area.

Sl no	Inside campus area	Outside campus	Classroom	Lawn	Office	Laboratory	Canteen
1.	64.5 dB	74.5 dB	32.1 dB	64.1 dB	65.7 dB	62.4 dB	70.9 dB
2.	67.5 dB	77.5 dB	35.3 dB	66.2 dB	67.9 dB	61.3 dB	65.4 dB
3.	66.9 dB	76.9 dB	34.6 dB	65.8 dB	70.6 dB	40.8 dB	64.3 dB

1.21 Is there any device (preferably HVS: High Volume Sampler) for measuring ambient air quality in the campus

NO

2. **WATER MANAGEMENT**

2.1	**Whether college has an efficient and hygiene water storage mechanism to minimize the loss of water during storage**	YES
2.2	**Whether college is using water filter with RO, Aqua Guard and/or large water filter with cooler at the strategic locations in the college. If so, are they under AMC:**	

- Yes, Aqua Guards and/or large water filter with coolers are working condition, which are maintained by college development fund.

2.3	**Whether college has its own mechanism in repairing of water leakage:**	NO
2.4	**Is there any rainwater harvesting unit in college:**	

- YES, there is a rainwater harvesting unit in college. Some members of the Eco Club and Green Volunteers belong to this Unit. The Logbooks of uses of the rainwater are given in Annexure F.

2.5	**Whether college has developed any reuse and recyclable of water system:**	NO
2.6	**Is there any scope of measurement of water quality parameters used in hostel, lab, office, canteen, tap water**	YES
2.7	**Lab-wise water consumption (lt/d)**	
	Chemistry	7-10
	Physics	00
	Computer	00
	Geography	4-5
2.8	**Whether college has sufficient/adequate drainage system:**	YES

3. ENERGY CONSERVATION

3.1 Reduction of energy consumptions, especially fossil fuel energy

3.1.1 Total electric consumption amount is 12561 KWH/Yr

3.1.2 Average electrical consumption in a month is 1046.75 KWH

3.1.3 Total No. of

i)	LED	177
ii)	CFL	10
iii)	Tube lights	187
iv)	Incandescent lamps	00
v)	Fans	210
vi)	Air conditioners/Air Coolers	04

3.1.4 Whether college has any provision/choice of renewable and carbon-neutral electricity options: NO

3.1.5 Whether college has planned to install solar panels:

- The initiative taken by our college to embrace renewable energy by planning the installation of solar panels on our campus. We have formally applied to the WBSEDCL authorities for the necessary approvals and support in this endeavour. The APPLICATON DATE for the solar panel is: 26/07/2019 . However, we regret to inform you that the implementation of this project has encountered a temporary setback due to a fund crisis. The financial constraints have led to an unforeseen delay in the process.

3.1.6 Whether college has efficient water heating system: NO

3.1.7 Whether the staff members of all sectors are concerned in turning off electrical appliances when not in use in both commercial and residential area: YES

3.1.7 Is there any monitoring system – like put off the main switch where there is no need of electricity?

- Yes, Multi-Chip Package (MCP) is installed in every floors as well as for every department.

3.1.8 Whether the users follow the appropriate and measurable targets for a reduction of energy, such as, computer, printers, electrical equipment when not in use: YES

3.1.9 Is there any options for equipment's running on standby mode:

- Yes, all electronic gadgets have set as automatic standby mode, which

saves power.

3.1.10 **Whether college has taken initiative to purchase efficient and environmentally sound appliances in order to fulfill the green budget:** YES

3.1.11 **Whether college has its own mechanism in repairing of electrical fault:** YES

3.1.12 **Whether the class rooms are with sufficient illumination in day time and ventilation:** YES

Number of lights & fans in class room (average):

- Number of LED Tube Lights are 04 per class and Fans are 04 per class.

Use of light & fans in the day time (average hours):

- Average time in use of Lights are 03 hr/D and Fans are 04 hr/D

Number of windows per class: 02

Natural light source in day time (in hours) (average per class):

- 12 hr/Class

3.1.13 **How many (%) e-notice generated by the college for academic/administrative purposes in a month**

- All notices are circulated by e-governance.

3.1.14 **How many (%) paper-notice generated by the college for academic/administrative purposes in a month**

- Some urgent and important notice are generated by college for academic/administrative purposes in a month.

3.1.15 **Total number of computer, printer, Laptop, Xerox machine**

Computer: 26 Printer: 09 Laptop: 05 Xerox: 02

3.1.16 **Whether college has organized lectures on energy conservation in order to give awareness to the students:** YES

3.2 Energy conservation strategies

3.2.1 **Whether the architectural design for college is based upon use of natural lighting & ventilation, to save extra power for bulbs and fans:**

- Yes, as per Government Green Standards.

3.2.2 **Whether florescent bulbs are replaced with CFL bulbs/LEDs:** YES

3.3 Minimize the use of unsustainable transport

3.3.1 **What are the available/maximum transport facilities used by the staff members/students etc., - mention the number (in average per day):**

- Used Public Transport by students, teachers, and staff to minimize the vehicular emission. All faculties and staff are used personal bike and bicycle some of them uses. PUBLIC TRANSPORT line BUS, Train, TOTO

3.3.2 **Whether college has any common car sharing/carpool among the students and faculty:** NO

4. WASTE MANAGEMENT

4.1 Maximization of the process of wastes & minimization of non-renewable refuse

4.1.1 Is there any method of segregation of waste materials?

: Yes, college followed as CPCB prescribed waste guideline.

College is following zero organic waste protocol. Food waste generated by students and staffs are taken by them to their own home, so that, minimum waste is generated inside the campus. The chemicals from laboratories are disposed in a sealed tank along with water.

4.1.2 Total amount of solid waste generated in the campus (including tree droppings & Lawn wastes)

Total number of staff 50

Per capita production per day

: 0.5 Kg to 1 kg

4.1.3 Whether college arrange any workshop/seminar/conference for awaring the students/staff for specific arrangements for recyclable wastes: YES

4.1.4 Whether college follow specific disposal method for solid or liquid waste in specific manner: YES

4.1.5 Whether the recycling/collection facilities are provided by the city Municipality and/or private suppliers YES

4.1.6 Whether college has any composting ground/vat or any collection unit etc.: YES

: College has Composting ground. 95% of Biodegradable waste is undergone composting and 99% of Non-biodegradable plastic waste is incinerated.

4.1.7 Is there any mechanism of treatment/uses of domestic influent in the college campus: NO

4.1.8 Minimize use of chemical pollutants NA

Sl No.	Department	Name of the waste			Total (a+b+c)	Characterization (if any)	Method of disposal	Agency if any
		Chemical (a)	Biological waste (b)	Microbial waste (c)				
	NA	NA	NA	NA				

4.1.9 Records of dustbins/collection bins inside the campus

Sl no.	Location of dustbin	No. of dustbins			Quantity of collection (per day)	Disposal time	Cleaning by ecofriendly product Y/N
		Biodegradable	Non-biodegradable	Plastic waste			
1	Ground Floor	02	02	10	1 kg/day	After end of class	Y
2	1st Floor	01	01	03	500 g/day	After end of class	Y
3	2nd Floor	01	00	01	200 g/day	After end of class	Y
4	Canteen	01	00	01	500 g/day	After end of class	Y
5	Office	02	00	02	100 g/day	After end of class	Y

4.1.9 **Whether the cleaning products used by the college staff are ecofriendly and under the COSHH (Control of Substances Hazard to Health) regulations:** YES

4.1.10 **Whether the college is using fertilizers, pesticides for any purposes, if so, amount used per month and places of uses**

- YES, Fertilizers are used approximately 50 kg/month in garden and vegetable field.

4.1.11 **Use of public transport:** YES

5. E-WASTE MANAGEMENT

5.1 Quantity of e-waste generated:

- 50 KG/Y

5.2 Number of cartridge used month-wise:

- 6 Pieces/ Month

5.3 Number of cartridge disposed in a year (average):

- 35 Pieces

5.4 Number of times refilling & reusing method of disposal of e-waste (if any) — One

5.5 Whether college has conducted any awareness programme on e-waste management: — NA

5.6 Is there any means of disposal of unused computers, printers and electronic wastes through authorized agents: — YES

5.7 Disposal methods

Sl No.	Location	Amount of generation	Method of disposal	Name of the Agency (if any) for disposal
1.	ROOM NO. 119	85 Kg	Recycle/ Repair	BMS COMPUTER

6. GREEN AREA MANAGEMENT

6.1 Is there any garden in the college campus/outside the campus under college custody: — YES

6.2 Whether the garden is watered by using drip/sprinkler irrigation system: — NO

6.3 Is there any mechanism of review of periodical monitoring of tree species: — YES

6.4 Whether the college has taken any programme for plantation of some fruit trees which can attract birds, bees etc. — YES

6.5 Flora diversity in College Campus

Sl No.	Name of the place	Type of plant	Local Name	Species Scientific Name	Name of the Family	Density of species
1	Campus Area	Exotic	রীঠাগাছ	Sapindus Saponaria	Sapindaceae	0.1%
2	Campus Area	Medicinal	Bhnui-Akra	Evolvulus Nummularius	Convolvulaceae	1.5%
3	Campus Area	Indigenous	Ghash	Urochloa Mutica	Poaceae	24.7%
4	Campus Area	Medicinal	Amaranth	Gomphrena Serrata L.	Amaranthaceae	1.1%
5	Campus Area	Medicinal	Nila	Indigofera Tinetoria L.	Fabaceae	0.8%
6	Campus Area	Indigenous	Tin Pata	Eleutherocccus Trifoliatus L.	Araliaceae	0.2%
7	Campus Area	Indigenous	Mouse-Ears	Cerastium Mutans	Caryophyllaceae	0.1%
8	Campus Area	Indigenous	Peering Sak	Trifolium Mutans	Fabaceae	2.2%
9	Campus Area	Medicinal	Thankuni Pata	Centella Cordifolia	Apiaceae	0.1%
10	Campus Area	Medicinal	Pudina	Mentha Suaveolens	Lamiaceae	0.1%
11	Campus Area	Medicinal	Tulsi	Ocimum Gratissimum	Lamiaceae	0.2%
12	Campus Area	Medicinal	Shon	Crotalaria Prostrata	Fabaceae	0.8%
13	Campus Area	Indigenous	Velvet Pata	Callicarpa Pendunculata	Lamiaceae	0.2%
14	Campus Area	Medicinal	অলিসান্দার	Smyrnium Olusatrum L.	Apiaceae	3.6%

15	Campus Area	Medicinal	Tridhara	Tridax Procumbens L.	Asteraceae	2.5%
16	Campus Area	Exotic	Dudhi	Euphorbia Granulata	Euphorbiaceae	5.9%
17	Campus Area	Exotic	Jangli Badam	Trifolium Scabrum	Fabaceae	6.2%
18	Campus Area	Indigenous	Bilati Jhau	Causonis Trifolia	Vitaceae	0.6%
19	Campus Area	Indigenous	বনমাল্লিকা	Sida Cordata	Malvaceae	1%
20	Campus Area	Indigenous	Shola	Aeschynomene Brasiliana	Fabaceae	0.1%
21	Campus Area	Indigenous	Bon Tepari	Physalis Longifolia	Solanaceae	0.1%
22	Campus Area	Indigenous	Tele Kochu	Bryonia Dioica	Cucurbitaceae	0.5%
23	Campus Area	Ornamental	Noyontara	Catharanthus Roseus	Apocynaceae	0.7%
24	Campus Area	Ornamental	Malva	Malva Olbia	Malvaceae	0.2%
25	Campus Area	Ornamental	Chandra Mallika	Chrysanthemum Indicum	Asteraceae	0.7%
26	Campus Area	Ornamental	Rongon	Ixora Coccinea	Rubiaceae	0.1%
27	Campus Area	Ornamental	Petunia	Petunia x Atkinsiana	Solanaceae	2.1%
28	Campus Area	Ornamental	Golap	Rosa Rugosa	Rosaceae	0.4%
29	Campus Area	Ornamental	Golap	Rosa ‘Ingrid Bergman’	Rosaceae	0.2%
30	Campus Area	Ornamental	Desi Golap	Rosa ‘Eglantyna’	Rosaceae	0.1%
31	Campus Area	Ornamental	Golap	Rosa Rubiginosa	Rosaceae	0.2%
32	Campus Area	Ornamental	Dalia	Dahlia Pinnate	Asteraceae	0.4%
33	Campus Area	Medicinal	Tridhara	Tridax Procumbens L.	Asteraceae	2.6%

34	Campus Area	Medicinal	Hazar Moni	Phyllanthus Urinaria	Phyllanthaceae	0.3%
35	Campus Area	Exotic	Mili	Euphorbia Milii	Euphorbiaceae	0.3%
36	Campus Area	Exotic	Nil Kolmi	Calystegia Pubescens	Convolvulaceae	1.3%
37	Campus Area	Ornamental	Nostarcium	Tropaeolum Minus L.	Tropaeolaceae	1.2%
38	Campus Area	Medicinal	Rhoeo Discolor	Tradescantia Spathacea Sw	Commelinaceae	1.1%
39	Campus Area	Ornamental	Snake Plant	Dracaena Trifasciate	Asparagaceae	0.5%
40	Campus Area	Ornamental	Ganda	Tagetes Erecta	Asteraceae	1.2%
41	Campus Area	Ornamental	Ganda	Tagetes Nelsonii	Asteraceae	1.2%
42	Campus Area	Ornamental	Rakta Ganda	Tagetes Patula	Asteraceae	1.2%
43	Campus Area	Exotic	চীনা খুয়া	Platycladus Orientalis	Cupressaceae	0.1%
44	Campus Area	Ornamental	Hari Tulsi	Ocimum Tenuiflorum	Lamiaceae	0.3%
45	Campus Area	Ornamental	Pignut	Mesosphaerum Suaveolens	Lamiaceae	0.3%
46	Campus Area	Indigenous	Tulsi	Cantinoa Plectranthoides	Lamiaceae	0.4%
47	Campus Area	Indigenous	Ghas	Cvnodon Dactylon	Poaceae	10.6%
48.	Campus Area	Herb	threeawn	Aristida adscensionis L.	Poaceae	--
49.	Campus Area	Herb	Crab grass	Cynodon dactylon (L.) Pers.	Poaceae	--
50.	Campus Area	Herb	Swollen fingergrass	Chloris barbata Sw.	Poaceae	--
51.	Campus Area	Herb	Little Lovegras	Eragrostis minor Wolf	Poaceae	--
52.	Campus Area	Herb	Asian Crabgrass	Digitaria bicornis Haller	Poaceae	--

53.	Campus Area	Herb	Creeping Panic Grass	Bracharia reptans (L.) C.A.Gardner & C.E.Hubb	Poaceae	--
54.	Campus Area	Herb	Yellow foxtail	Setaria pumila (Poir.) Roem. & Schult.	Poaceae	--
55.	Campus Area	Herb	Egyptian crowfoot grass	Dactylodtenium aegyptium (L.) Willd.	Poaceae	--
56.	Campus Area	Herb	Musal grass	. Iseilema laxum Hack.	Poaceae	--
57.	Campus Area	Herb	Buffel Grass	Cenchurus setiger Vahl	Poaceae	--
58.	Campus Area	Herb	Kaavattam Pillu	Andropogon pumilus Roxb.	Poaceae	--
59.	Campus Area	Herb	Purple nut sedge	Cyperus rotundus L	Cyperaceae	--
60.	Campus Area	Herb	Umbrella Sedge	Cyperus alternifolius Rottb	Cyperaceae	--
61.	Campus Area	Herb	Prickly chaff flower	Achyranthus aspera L	Amaranthaceae	--
62.	Campus Area	Herb	Muskmelon	Cucumis maderaspatanus (L.) M.Roem.	Cucurbitaceae	--
63.	Campus Area	Herb	Aloe	Aloe vera (L.) Burm.f.	Asphodelaceae	--
64.	Campus Area	Herb	Indian acalypha	Acalypha indica L.	Euphorbiaceae	--
65.	Campus Area	Herb	Neem Tree	Azadiracta indica A.Juss.	Meliaceae	--
66.	Campus Area	Herb	Sensitive plant	Mimosa pudica L.	Fabaceae	--
67.	Campus Area	Herb	Erect spiderling	Boerhavia erecta L	Nyctaginaceae	--
68.	Campus Area	Herb	Holy basil	Ocimum tenuifolium L.	Nyctaginaceae	--
69.	Campus Area	Herb	European black nightshade	Solanum nigram L.	Lamiaceaec	--
70.	Campus Area	Herb	Turkey Berry	Solanum torvum Sw.	Solanaceae	--

71.	Campus Area	Herb	Purple Fruited Pea Eggplant	solanum trilobatum L.	Solanaceae	--
72.	Campus Area	Herb	Gale of Wind,	Phyllanthus amarus Schumach. & Thonn.	Solanaceae	--
73.	Campus Area	Herb	Madras Leaf Flower	Phyllanthus maderaspatensis L.	Phyllanthaceae	--
78.	Campus Area	Herb	Asthma Weed	Euphorbia hirta L.	Phyllanthaceae	--
79.	Campus Area	Herb	Spreading hogweed	Boerhavia diffusa L.nom. cons.	Euphorbiaceae	--

6.6 Records of Plantation programmes

Sl No.	Programme conducted	Date of functioning	No. of tree planted	Present status of the species	Documentation(if any)
1.	World Environmental Day	June 5, 2018	53	03	Y
2.	World Environmental Day	June 5, 2019	107	26	Y
3.	World Environmental Day	June 5, 2022	31	10	Y

Flora Diversity in College campus



Sapindus Saponaria



Evolvulus nummularius



Urochloa mutica



Gomphrena Serrata L.



Indigofera tinetoria L.



Eleutherocccus trifoliatus L.



Cerastium mutans



Trifolium mutans



Centella cordifolia



Mentha suaveolens



Ocimum gratissimum



Crotalaria prostrata



Callicarpa Pendunculata



Smyrnium olusatrum L.



Tridax Procumbens L.



Euphorbia Granulata



trifolium scabrum



Causonis trifolia



Sida cordata



Aeschynomene brasiliana



Physalis longifolia



Bryonia dioica



Catharanthus Roseus



Malva Olbia



Chrysanthemum Indicum



Ixora Coccinea



Petunia x Atkinsiana



Rosa Rugosa



Rosa ‘Ingrid Bergman’



Rosa ‘Eglantyna’



Rosa Rubiginosa



Dahlia Pinnate



Tridax Procumbens L.



Phyllanthus Urinaria



Phyllanthus Urinaria



Euphorbia Milii



Calystegia Pubescens



Tropaeolum Minus L.



Tradescantia Spathacea Sw



Dracaena Trifasciate



Tagetes Erecta



Tagetes Nelsonii



Tagetes Patula



Platycladus Orientalis



Ocimum Tenuiflorum



Mesosphaerum Suaveolens



Cantinoa Plectranthoides



Cvnodon Dactylon

Sample of Survey on Biodiversity Mapping

Biodiversity Mapping Format (1): Area: [illegible] Method: Random sampling (Quadrats)

Sl. No.	Name of Species	Presence in different quadrate										Total presence in quadrate (A)	Frequency (A/10)
		1	2	3	4	5	6	7	8	9	10		
1.	Aloe barbadensis miller	+								+	+	3	0·3
2.	Kalanchoe blossfeldiana	+	+		+							3	0·3
3.	Ocimum basilicum		+	+		+						3	0·3
4.	Clitoria ternatea			+			+					2	0·2
5.	Calotropis gigantea				+	+					+	3	0·3
6.	Eucalyptus globulus						+					1	0·1
7.	Mentha spicata							+			+	2	0·2
8.	Lavandula spica L.				+	+						1	0·1
9.	Tinospora Cordifolia				+							1	0·1
10.	Foeniculum vulgare						+					1	0·1
11	Zingiber officinale								+			1	0·1
12.	Withania Somnifera									+	+	2	0·2

Signature:

Date: 29·12·22

Biodiversity Mapping Format (2): Area : সাহিত্যিকী ভাগার Method: Random Sampling

Sl. No	Name of Species	Numbers in different quadrate										Total No. of individual (A)	Density (A/10)
		1	2	3	4	5	6	7	8	9	10		
1.	Aloe barbadensis miller	3								2	1	6	0·6
2.	Kalanchoe blossfeldiana	2	3		2							7	0·7
3.	Ocimum basilicum		1	2		1						4	0·4
4.	Clitoria ternatea			1			1					2	0·2
5.	Calotropis gigantea				1	1					2	4	0·4
6.	Eucalyptus globulus						2					2	0·2
7.	Mentha spicata							5			3	8	0·8
8.	Lavandula spica L.					8						8	0·8
9.	Tinospora Cordifolia				2							2	0·2
10.	Foeniculum vulgare						3					3	0·3
11.	Zingiber officinale								8			8	0·8
12.	Withania Somnifera									4	3	7	0·7

Signature:

Date: 29·12·22

Plants and Trees in the Campus:

Sl No.	Local Name	Botanical Name	Family
1.	Amm gache (Mango)	Mangifera indica	Anacardiaceae
2.	Pakur gache (Peepul)	Ficus religiosa	Moraceae
3.	Neem gache	Azadirachta indica	Meliaceae
4.	Bot gache (Banyan Tree)	Ficus benghalensis	Moraceae
5.	Sishu gache	Dalbergia Sissoo	Fabaceae
6.	Gamhar gache	Gmelina arborea	Lamiaceae
7.	Jam gache	Syzygium cumini	Myrtaceae
8.	Amloki gache	Phyllanthus emblica	Phyllanthaceae
9.	Segun gache (Teak Tree)	Tectona grandis	Lamiaceae
10.	Sona jhuri	Acacia auriculiformis	Mimosaceae
11.	Mehegoni gache	Swietenia mahagoni	Meliaceae
12.	Bandarlathi gache	Cassia fistula L.	Fabaceae
13.	Polash gache	Butea monosperma	Fabaceae
14.	Krisnachura gache	Delonix regia	Fabaceae
15.	Radhachura gache	Peltophorum pterocarpum	Fabaceae
16.	Chalta gache	Dillenia indica L.	Dilleniaceae
17.	Debdaru gache	Monoon longifolium	Annonaceae
18.	Chatim gache	Alstonia scholaris (L.)	Apocynaceae
19.	Ata gache	Annona squamosa L.	Annonaceae
20.	Dumur gache	Ficus racemosa L.	Moraceae
21.	Kodom gache	Neolamarckia cadamba	Rubiaceae



Mangifera indica



Ficus religiosa



Azadirachta indica



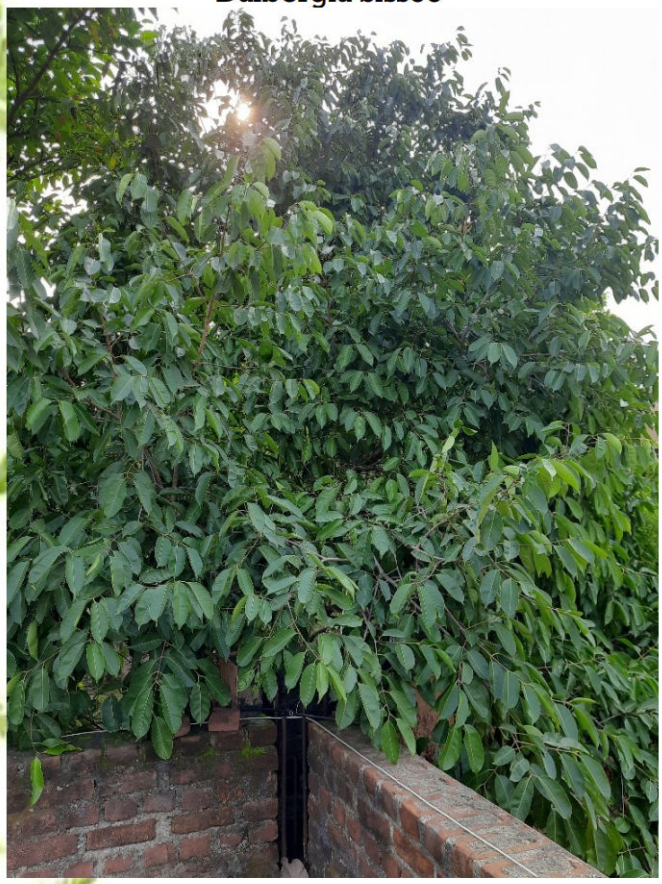
Ficus benghalensis



Dalbergia Sissoo



Gmelina arborea



Syzygium cumini



Phyllanthus emblica



Tectona grandis



Annona squamosa L.



Swietenia mahagoni



Cassia fistula L.



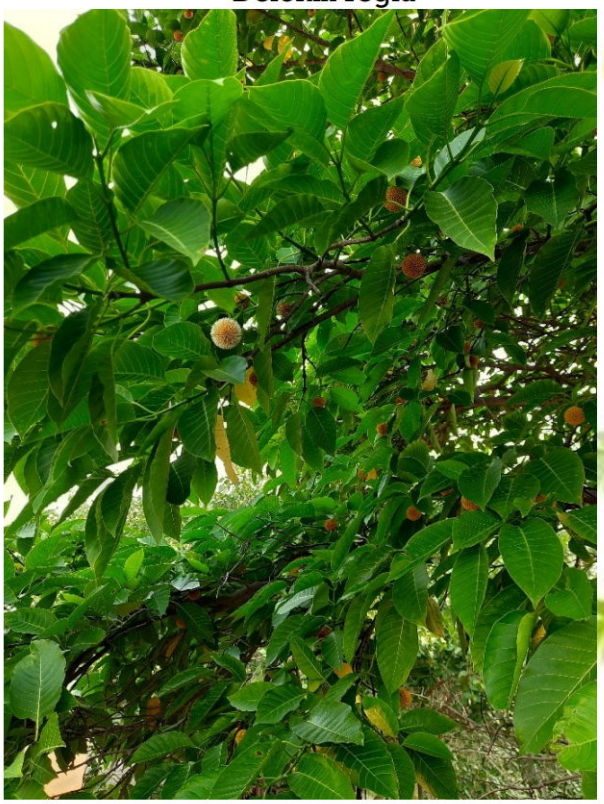
Butea monosperma



Delonix regia



Monoon longifolium



Neolamarckia cadamba

5. Fauna Diversity in THLHM campus

5.1 Birds Diversity in THLHM campus

The observations on fauna diversity indicated that the THLHM campus has a large number of living as well as visiting animals, birds, reptiles and insects including termids. A total number of 32 birds belonging to the 12 species were recorded from different habitats during winter and summer, of them one of which were endemic to the western Ghats like purple rumped sunbird. Total number of 32 bird species, out of them 3 species were migrant, 6 species were local migrant during winter and summer season because of unfavour environment and low availability of food resources. Migratory bird species like Red winged creased cuckoo, Indian cuckoo, forest wag tail, Yellow browed bulbul, Paddy field warbler, small green billed malkhoa, Alexadrine parakeet, Rose ringed parakeet and red whiskered bulbul.

Table 5.1a: Birds Diversity in Campus

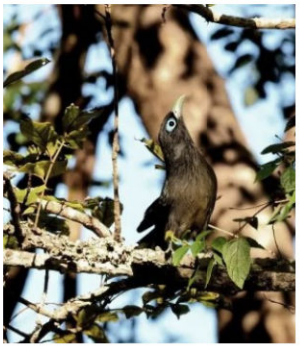
Sl. No.	Local Name	Species Scientific Name	Name of the Family
1.	Bay backed shrike	*Lanius isabellinus*	Laniidae
2.	Black drango	Dicrurus macrocercus	Dicruridae
3.	Blue face malhova	Phaenicophaeus viridirostris	Cuculidae
4.	Chestnut bee eate	Merops leschenaultia	Meropidae
5.	Common Kingfisher	*Halcyon smyrnensis*	Alcedinidae
6.	Common myna	Acridotheres tristis	Sturnidae
7.	Eurasian collared dove	Streptopelia decaocto	Columbidae
8.	Golden oriole	Oriolus oriolus	Oriolidae
9.	Green bee eater	Merops orientalis	Meropidae
10.	Grey wagtail	Motacilla cinerea	Motacillidae
11.	Savanna Nightjar	Caprimulgus affinis	Caprimulgidae
12.	House crow	Corvus splendens	Corvidae
13.	Indian roller	Coracias benghalensis	Coraciidae
14.	Lotens sunbird	Cinnyris loteniusduc	Nectariniidae
15.	Oriental magpie robin	Copsychus saularis	Muscicapidae
16.	Purple rumped sunbird	Leptocoomo zeylonica	Nectariniidae
17.	Purple sunbird	Cinnyris asiaticus	Nectariniidae
18.	Red rumped swallow	Cecropis daurica	Hirundinidae
19.	Rock pigeon	Columba livia	Columbidae
20.	Rufous treepie	Dendrocitta vagabunda	Corvidae



Oriolus oriolus



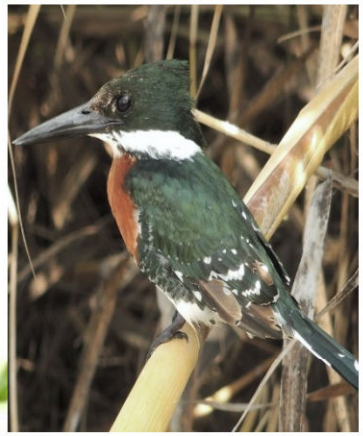
Merops orientalis



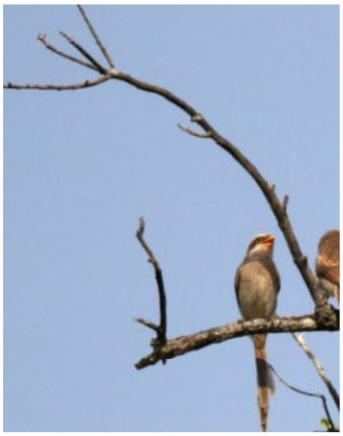
Phaenicophaeus viridirostris



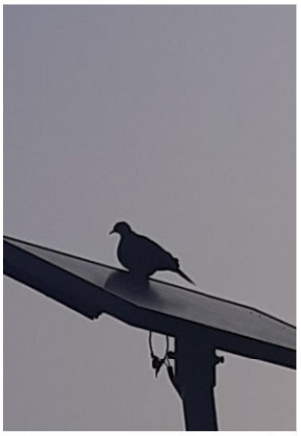
Merops leschenaultia



Halcyon smyrnensis



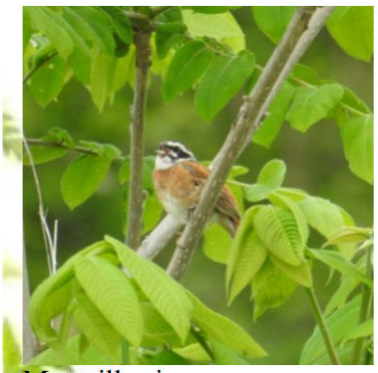
Lanius isabellinus



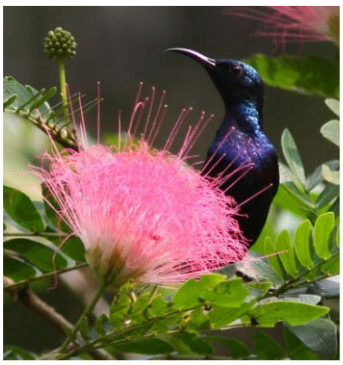
Streptopelia decaocto



Corvus splendens



Motacilla cinerea



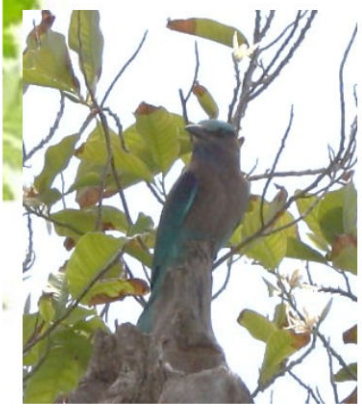
Cinnyris asiaticus



Leptocoomo zeylonica



Dicrurus macrocercus



Coracias benghalensis



Dendrocitta vagabunda



Acridotheres tristis



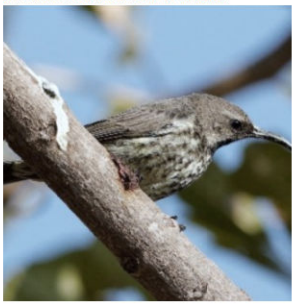
Columba livia



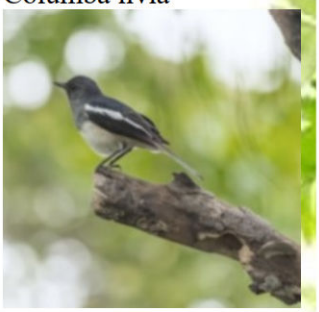
Cecropis daurica



Caprimulgus affinis



Cinnyris loteniusduc

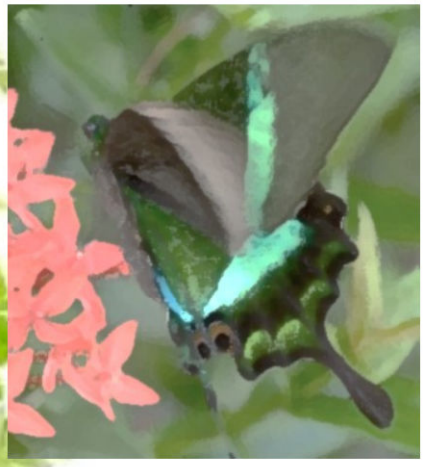


Copsychus saularis

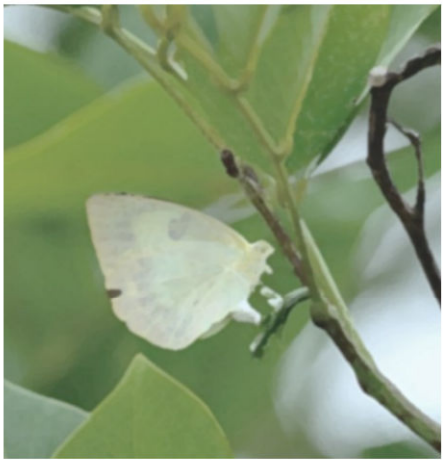
5.2 Butterfly diversity in THLH Mahavidyalay

THLH Mahavidyalay campus has three family level diversities such as Papilionidae, Pieridae and Hesperiidae in which Common butterflies species such as Mormon, Rose, Birdwing, Emigrant, Grass yellow, Gull Wanderer.

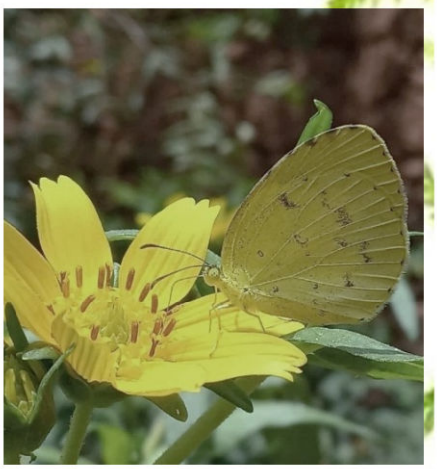
Sl. No.	Common Name	Scientific Name
1.	Common banded peacock	Papiliocrino
2.	Common Emigrant	Catopsiliapomona
3.	Common Grass Yellow	Euremahecabe
4.	Common Sailor	Neptishylasinara
5.	Crimson Rose	Pachliopta hector
6.	Silver Line	Spindasisvulcanus
7.	Small Salmon Arab	Colotis amata
8.	Stripped Tiger	Danausgenutia
9.	Tamil Yeoman	Cirrochroathais



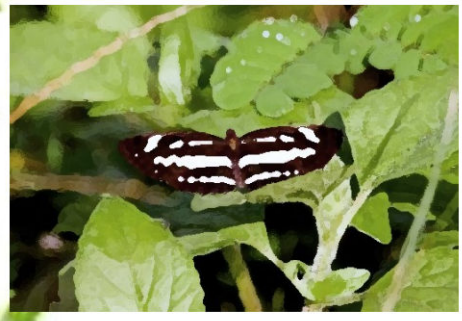
Papiliocrino



Catopsiliapomona



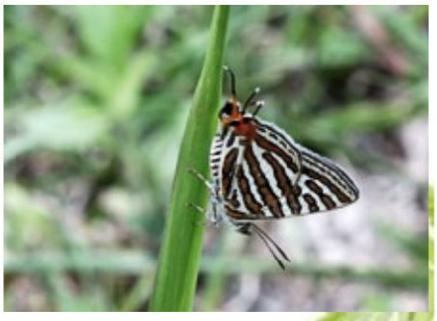
Euremahecabe



Neptishylasinara



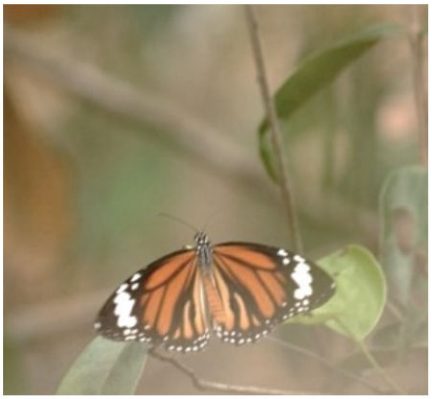
Pachliopta hector



Spindasisvulcanus



Colotis amata



Danausgenutia



Cirrochroathais

6. **Establishment of Herbal Garden, 'SANJIBONY', in College Campus**

Growing herbal plants having medicinal importance in the campus becomes more attractive and useful if concept gardens are maintained. Medicinal plant gardens can contain the locally available medicinal plants, RET (Rare Endangered Threatened) listed plants and those plants are most useful in terms of economic importance. In the tree gardens, trees as linings all over the campus can act as oxygen corridors. Native trees along with trees like Azadirachta, Pongamia and Ficus species can be cultivated at the maximum as these plants are used to remove the dust particles and carbon lead from the air and purifies the air considerably. Similarly, the ornamental plants with beautiful flowers can be maintained in the frontage gardens of campus for attraction and good ambience. This will give an overall aesthetic look and also provide fresh air for healthy respiration to the stakeholders.





Medicinal Garden



Lumbini Garden (Butterfly Garden)

7. Rainwater Harvesting System and Percolation Pond

Rainwater harvesting system is a traditional old practice not only in drought prone areas and also in areas having seasonal rainfall. The Indian traditional rainwater harvesting is being practiced in various parts of the country to improve the ground water status. Now the threatening features of the lower ground level of water has created a revamp of newly featured rainwater harvesting systems. Indian traditional rainwater harvesting systems are constructed based on three modes either direct pumped, indirect pumped or by gravity alone in the campus. In addition, lakes, bonds, water channels and any other water reservoir methods are considered as the rainwater harvesting system. The green campus should have adopted any of the above said modes of rainwater harvesting or any new methods that has the benefit of conserving the water resource as well. A big rectangle shaped pit constructed near the building in which rainwater harvested from the roof of the building using a pipe. During the audit, there are a big pond developed for rain harvesting. Rainwater harvesting structures and recharge wells have been commissioned in the campus at different locations.





Rainwater Hervesting Area (ANUTOYA Water-Body)

8. Importance of Biodiversity Conservation

The campus should be a mini biodiversity conservation area, wherein, more greenery due to native plant species, medicinal plant garden, concept gardens, flowering plants that attract bees, birds, beetles and other animals like squirrels should be monitored as ecosystems. Shade giving trees in the paths, flowering trees in the avenues and fruit trees at the back yards also would attract birds, bees, butterflies and squirrels. Maintaining small ponds/open water sources and reservoirs will attract these small harmless animals to the campus. THLH Mahavidyalay campus is free of harmful plants that cause threat to the natural vegetation. It is like a mini bio-reserve rich in native species and endemic plants. A complete data on the soil type, water holding capacity and soil nutrition in the campus is being thoroughly studied internally or with the Visva-Bharati agriculture departments. It is useful for cultivation of various native and wild plant species and also helps in choosing the proper irrigation system.

Acharya
SRI NARENDRA MODI
Upacharya
Prof. Sanjoy Kumar Mallik

VISVA-BHARATI
FOUNDED BY
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ghoshgk1@gmail.com
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PALLI SIKSHA BHAVANA
(*Institute of Agriculture*)
Soil Testing Laboratory

Date: 16.05.2024

From
Prof. Goutam Kumar Ghosh
Prof. (Department of Soil Science and Agricultural Chemistry)
In-Charge Soil Testing Laboratory, Palli Siksha Bhavana
Visva-Bharati, Sriniketan

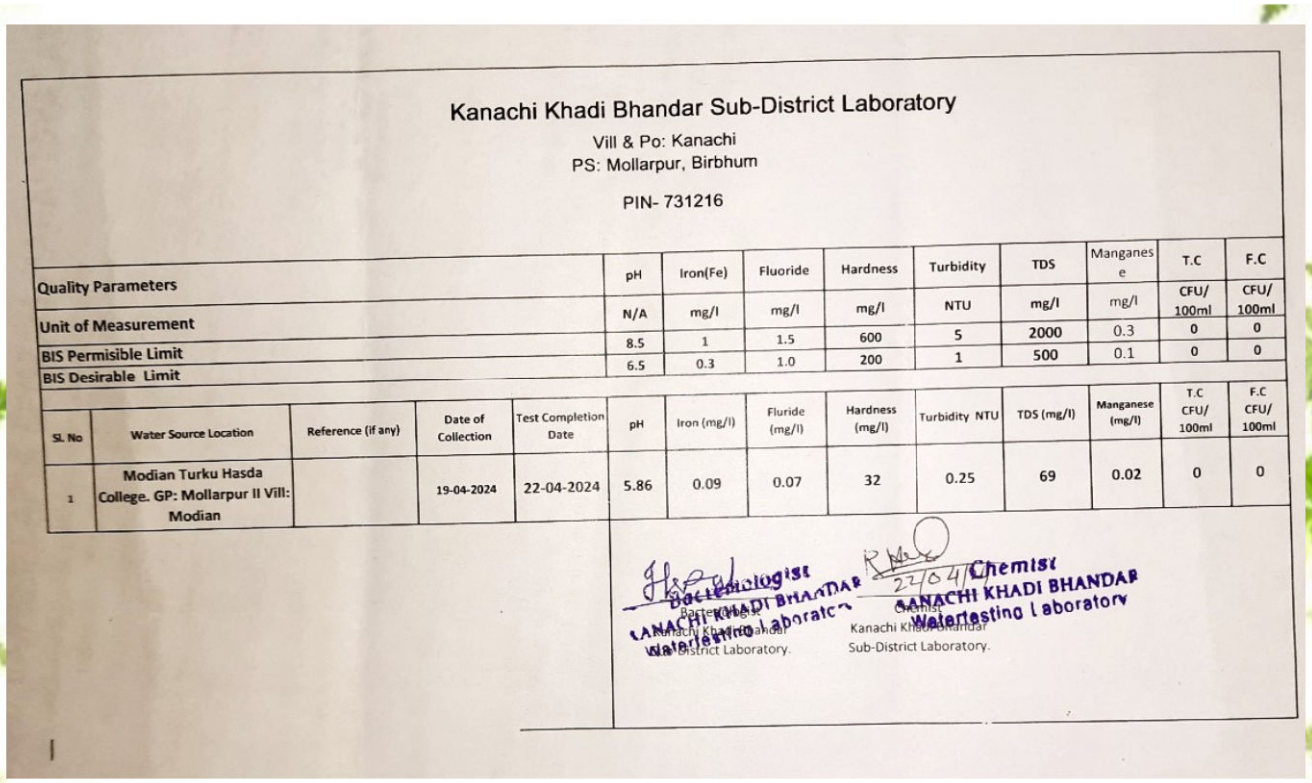
To
Turku Hansda Lapsa Hemram Mahavidyalay
Vill - Maidan, Mallarpur
P.O. - Ganpur, Birbhum
Pin - 731216, West Bengal

2 nos. Soil Sample Analysis Report

Sample	pH (1:2)	EC (dS m^{-1})	Organic Carbon (%)	Nitrogen (kg/ha)	Phosphorus (kg/ha)	Potassium (kg/ha)	Sulphur (ppm)	Boron (ppm)	Zinc (ppm)	Iron (ppm)	Copper (ppm)	Manganese (ppm)
Orchard Ground	5.46	0.17	1.28	778.68	784.90	132.72	6.65	0.24	1.96	5.56	1.90	16.88
Flower Garden	5.72	0.13	0.88	323.68	96.77	212.24	46.79	0.35	2.48	6.59	1.74	20.80

16.05.2024
(G. K. Ghosh)
PI
Soil Health & Fertility Scheme under RKVY
&
In-Charge Soil Testing Laboratory
Palli Siksha Bhavana, Visva-Bharati

Soil Analysis Report



Kanachi Khadi Bhandar Sub-District Laboratory

Vill & Po: Kanachi
PS: Mollarpur, Birbhum

PIN- 731216

Quality Parameters	pH	Iron(Fe)	Fluoride	Hardness	Turbidity	TDS	Manganese	T.C	F.C
Unit of Measurement	N/A	mg/l	mg/l	mg/l	NTU	mg/l	mg/l	CFU/ 100ml	CFU/ 100ml
BIS Permisible Limit	8.5	1	1.5	600	5	2000	0.3	0	0
BIS Desirable Limit	6.5	0.3	1.0	200	1	500	0.1	0	0

Sl. No	Water Source Location	Reference (if any)	Date of Collection	Test Completion Date	pH	Iron (mg/l)	Fluride (mg/l)	Hardness (mg/l)	Turbidity NTU	TDS (mg/l)	Manganese (mg/l)	T.C CFU/ 100ml	F.C CFU/ 100ml
1	Modian Turku Hasda College. GP: Mollarpur II Vill: Modian		19-04-2024	22-04-2024	5.86	0.09	0.07	32	0.25	69	0.02	0	0

Bacteriologist
KANACHI KHADI BHANDAR
Water testing Laboratory
Kanachi Khadi Bhandar
Sub-District Laboratory.

22/04/24
Chemist
KANACHI KHADI BHANDAR
Water testing Laboratory
Kanachi Khadi Bhandar
Sub-District Laboratory.

Water test report

Sample Of Survey Done By Students

8. Conduct of Outreach programmes for dissemination of Green Campus motto and Green pledge initiatives by Eco club, NCC and NSS bodies in Green Campus initiatives

Professional implementation of all the Eco plans in the campus should be done through the Eco clubs, Green Volunteers, NCC (National Cadet Corps) and NSS (National Service Scheme). Conducting frequent seminars, conferences, workshops, awareness rallies, etc. on topics relevant to the environment is necessary to educate and create awareness among the students and staff members. In addition, clubs and forums should be the first hand receivers of all the new plans proposed by the Government such as Swachh Bharath Abhiyan and Jal Shakti Abhiyan under Clean India Mission and implement the same in the campus. The THLH Mahavidyalay has well developed NSS, Swacht Bharath Abhiyan under Clean India Mission. These bodies are actively involved in tree planting programmes and cleaning the surrounding areas of tribal, rural and urban people across the college campus. THLH Mahavidyalay is conducting a large number of activities to conserve the nature and to teach about the importance of environment to rural, tribal and urban people.

Awareness programmes on the green campus initiatives and dissemination of green motto and pledges are accounted in a sustainable manner. Its benefits and self-sustainability are being projected for wider centric on earth and Ecology conservation. Innovative practices that add up credentials in implementing the green campus which needs to be promoted in the awareness programme to the students and staff members including public domain. THLH Mahavidyalay has taken sufficient attempts to disseminate the green campus motto and green pledge such as 'Don't use plastic bags', 'Don't waste waters', 'Plastic Free Zones' and 'Preserve the Natural Resources' and etc. among the students and staff members in the campus. THLH Mahavidyalay helps to develop social commitment and to expose the students to get sensitized to social realities and to build a link between the student community and the wider community. It enhances the social interaction, interpersonal communication skills and develop emotional maturity of students. It also helps students in total and integrated personality development. THLH Mahavidyalay facilitates to prepare the students for future life, by developing qualities such as cooperation, team spirit, leadership, discipline and development of creative talents including to boost the self-confidence of students.

World Earth Day

April 23, 2018









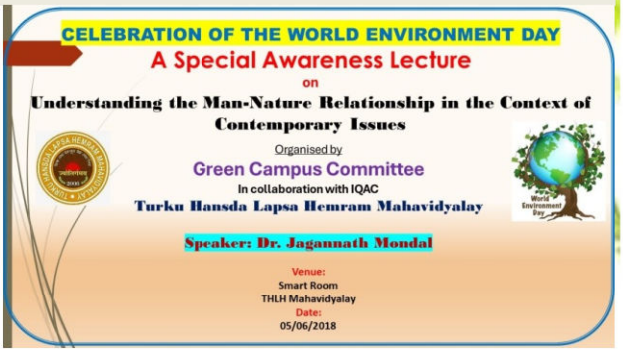


Seminar on Environment Day









Lecture by Dr. Jaganath Mondal

9. Best practices followed on Green Campus initiatives in the Organization

1. It is observed that THLH Mahavidyalay is maintaining more than 55% of the green cover area after building construction as per the guidelines to provide a healthy environment and ecofriendly atmosphere to the stakeholders.
2. THLH Mahavidyalay campus provide pure atmosphere to the stakeholders under natural environment, topology, landscape and soil erosion. The campus is established with the artificially created topography like pathways and parking areas.
3. THLH Mahavidyalay has established rainwater harvesting models, percolation pond to recharge the borewells by collecting rainwaters from the building roofs, open areas and playgrounds including unexplored areas which are channelized to flow of rainwaters to increase the ground water level.
4. The campus has a maximum number of more oxygen producing and carbon-di-oxide absorbing plants such as Areca Palm, Money plant, Neem tree, Arjun tree and Pongam trees including some of the shrub and herbal plants.
5. Department of Biotechnology and Microbiology, THLH Mahavidyalay is being offering various courses in Regulation 2019 related to biodiversity conservation, environmental safety and safeguard, environmental pollution, natural disaster management and waste management and environmental impact assessment and green auditing to the students.

10. Recommendations for Greening

- The name board may be kept in each plant species in which the common name along with binomial name may be mentioned. The year of planting and economic importance with medicinal values if any may be mentioned in some plants so that the oldest as well as useful herbal plants may be identified in the campus.
- Honey Bee hives may be kept in the campus which is free from student's mobilization. Honeybees are natural pollinators helps to increase the yield potential of plants (flowers, fruits and vegetables) upto 55%.
- A complete data on the soil parameters such as pH, electrical conductivity, water holding capacity, total organic carbon, available nitrogen, exchangeable potassium, available phosphorus in the campus may be studied which may be useful for the cultivation of various native and wild type plant species.
- A complete data on the water quality parameters such as pH, TSS, BOD, COD, dissolved oxygen and dissolved carbon dioxide and macro and micro elements like iron, nickel, chromium, ferric and ferrous ion concentrations may be studied for which bore well, open well, corporations, municipal RO, Aquaquad, Millipore. Distilled water rain water and may be used. It may be analysed which may be useful for the plant growth as well as to the stakeholders.
- Vermicompost production may be increased substantially using tree leaf litter, kitchen wastes and biodegradable waste materials available in the campus. The vermicompost manure can be used for plant cultivation and the excess amount of vermicompost may be sold in the local market as consultation work.
- The matured trees may be subjected to do white wash upto 3 feet height with limestone and neem oil mix to prevent the pests and diseases attack.
- Automatic water irrigation systems like drip and sprinkler irrigation methods adopted may be extended in the entire green area of the campus which in turn are useful to reduce the operation costs under energy conservation policy.
- It is recommended to develop 'Purchase Policy' for not allowing the non-degradable plastic covers during the packing of goods with respect to nature conservation and environmental protection.

11. Conclusion

In the two decades of service to higher education, THLH Mahavidyalay has made significant progression in teaching learning and consultancy, innovation, community service and value education. THLH Mahavidyalay is a well-established govt aided college in Birbhum which imparts quality education to rural, tribal and urban people across the district. This Organization is excellent in terms of academic activities and providing an eco-friendly atmosphere to the stakeholders. The Organization has taken enormous efforts to maintain green campus to the students, staff members and parents in a sustainable manner which reflects the importance of the environment and stakeholders. It is conducting a large number of activities for the benefit of rural and tribal community people without disturbing the environment, topology, landscape management and vegetation. THLH Mahavidyalay has their own Green Campus and Environment policy with respect to nature conservation and environmental protection. The natural topography and very good landscape design without disturbing the artificial vegetation are being maintained by the THLH Mahavidyalay. A maximum number of more oxygen producing and carbon-di-oxide absorbing plants are being maintained to provide pure atmosphere to the stakeholders. The installation of a rainwater harvesting system, ground water recharge system to conserve rainwater and ground water are noteworthy in the campus. THLH Mahavidyalay has created 'Herbal Gardern'. This Organization has very good floral biodiversity. Similarly, very good faunal biodiversity. This may lead to a prosperous future in the context of a significant Green campus and providing a sustainable environment to the stakeholders.

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