Green Audit Report (2021-22)
of
SANTAL BIDROHA SARDHA SATABARSHIKI MAHAVIDYALAYA

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1. Introduction:

The results and conclusions and suggestions from a thorough green audit carried out at KASHIPUR MICHAEL MADHUSUDAN MAHAVIDYALAYA are presented in the report that continues. The audit's goals were to evaluate the college's environmental impact and spot areas where sustainability may be improved. The audit addressed topics like journeys, disposal of trash, water use, electricity consumption, and general environmental awareness.

Green Audit Working Team (2021-22):

Sl No	Name of the Members	Designation
1.	Dr. Bibhas Kanti Mandal	Principal
2.	Dr. Suvranshu Pan	IQAC Coordinator
3.	Dr. Poushali Roy	NAAC Coordinator
4.	Dr. Subhrajit Chatterjee	GB Member
5.	Susanta Chand	GB Member
6.	Lakshmi Kanta Mahato	GB Member
7.	Bubai Bera	Member
8.	Partha Sarathi Mahata	Member
9.	Tamal Banerjee	Non-Teaching Member
10.	Bishnu Dey	General Secretary, Student

2. Need for Green Audit:

Green audits, also known as environmental audits or sustainability audits, are becoming more and more necessary in today's society for several reasons:

(a) Environmental Impact: Green audits assist in evaluating and reducing an organization's negative environmental impact. They assess variables like energy use, waste production, water use, and emissions, identifying areas that might be improved to lessen environmental harm.

(b) Regulatory Compliance: Businesses must abide by the environmental laws and standards that have been set in many nations. Green audits assist businesses in complying with regulations and avoiding fines or other legal repercussions for non-compliance.

(c) Cost Reduction: Green audits can reveal inefficiencies and wasteful behaviours within a company, opening up chances for cost savings. Businesses can apply methods to save operational costs and boost overall efficiency by analyzing energy usage, resource consumption, and waste management.

(d) Reputation and Stakeholder Expectations: Consumers and other stakeholders now demand more environmentally conscious company practices. Green audits offer organization transparency and prove its dedication to sustainability, strengthening its reputation and fostering trust among clients, staff, investors, and communities.

(e) Risk Management: Environmental hazards can have serious financial and reputational ramifications for firms, including pollution events, regulatory non-compliance, and supply chain interruptions. By evaluating environmental management systems, ensuring sufficient controls are in place, and putting

preventative measures in place to deal with possible problems, green audits assist in identifying and mitigating these risks.

(f) Continuous Improvement: Green audits encourage a continuing commitment to sustainability rather than being one-time events. Organizations can see trends, set goals, and implement improvement initiatives by routinely evaluating and tracking environmental performance. This iterative process promotes a culture of sustainability and propels long-lasting transformation.

(g) Sustainable Development Goals (SDGs): An international framework for solving urgent environmental and social issues is provided by the Sustainable Development Goals. Organizations can better align their operations with these objectives with the aid of green audits, paving the way for a more just and sustainable future. To evaluate, enhance, and confirm environmental performance, green audits are essential. They allow companies to control risks, comply with rules, cut costs, improve reputations, and support sustainable development.

3. Methodology for Green Audit:

Audits of an organization's environmental performance and practices are known as "green," "environmental," or "sustainability" audits. They entail assessing the company's influence on the environment, resource usage, waste management, and adherence to environmental legislation. Here is a procedure for carrying out a green audit:

(a) Planning:

(b) Identify audit team and resources:

(c) Develop an audit plan: Create a detailed plan outlining audit activities, timelines, responsibilities, and communication channels.

(d) Data Collection:

(e) Gather information:

(f) Conduct site visits and interviews:

(g) Review documentation:

(h) Evaluation and Analysis:

(i) Assess environmental impacts:

(j) Evaluate compliance:

(k) Identify strengths and weaknesses:

(l) Quantify results:

(m) Reporting:

(n) Prepare an audit report:

(o) Communicate results:
(p) Follow-up and Improvement:
(q) Develop an action plan:
(r) Monitor progress:
(s) Continuous improvement:

The methodology adopted to conduct the Green Audit of the Institution had the following components.

3.1. On-site Visit :

The Green Audit Team carried out the five-day field trip. The tour's main goal was to evaluate the Institution's waste management procedures, energy conservation tactics, and other aspects of its green cover. The protocols for sample collection, preservation, and analysis were followed scientifically.

3.2. Focus Group Discussion :

The nature club, staff, and management members participated in focus group discussions on various facets of the green audit. Identification of attitudes and awareness towards environmental issues at the institutional and local levels was the main topic of discussion.

3.3. Energy and waste management Survey:

The audit team evaluated the college's waste generation, disposal, and treatment facilities as well as its energy usage pattern with the assistance of teachers and students. A comprehensive questionnaire survey method was used to carry out the monitoring.

4. Target Areas of Green Auditing:

A process for resource management includes a green audit. The actual usefulness of green audits lies in the fact that they are conducted at predetermined intervals and that the results might show improvement or change over time, even though they are individual events. The concept of an eco-campus primarily emphasizes the effective use of energy and water, the reduction of waste output or pollution, and economic efficiency.

These indications are evaluated during the "Green Auditing of this Educational Institute" procedure. In order to reduce emissions, obtain a reliable and

affordable energy supply, promote personal responsibility, encourage and improve energy conservation, reduce the institute's energy and water use, reduce waste going to landfills, and incorporate environmental considerations into all contracts and services deemed to have significant environmental impacts, Eco-campus focuses on these goals. Water, energy, trash, and green campus are the focus topics for this green audit.

4.1. Energy Consumption:

4.1.1. Lighting: The audit showed that many of the college's lighting fixtures were ineffective and outdated. It is advised to use natural light whenever possible, add occupancy sensors, and swap out conventional light bulbs for energy-efficient LED ones.

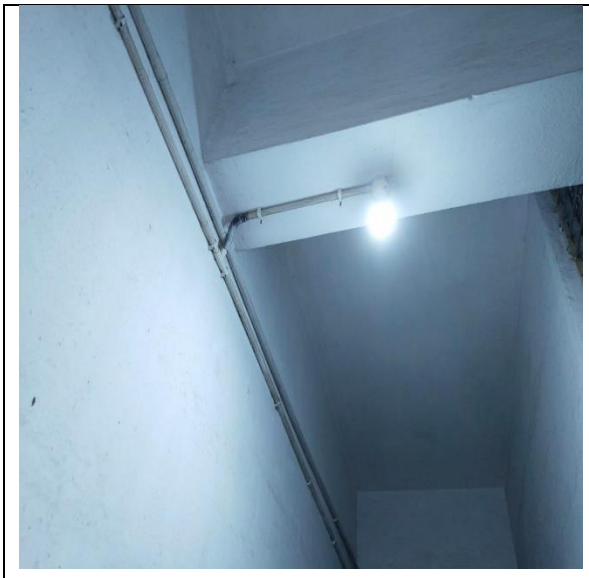
4.1.2. Heating, Ventilation, and Air Conditioning (HVAC):

The HVAC systems were discovered to be working less efficiently than necessary. Energy usage can be considerably decreased by switching to energy-efficient HVAC equipment, using programmable thermostats, and performing routine maintenance.

4.1.3. Energy Awareness: The college should promote energy conservation practices among employees and students. Campaigns, educational activities, and financial incentives for energy-saving projects can all help achieve this.

Electrical device/items	Number	Power (watt)	Usage time (hr/day)
Normal Tubelight	62	90	10:00 am to 5:00 pm
LED Tubelight	06	40	Do
Normal Bulb	2	60	Do
LED Bulb	50	12	Do
Ceiling Fan	125	100	Do
Wall fan	01	100	Do

In many classroom places, we must replace common tubes with low-wattage LED tubes instead. Just behind the head, on a long upright frame, are the tubes that have been set up. As a direct consequence, we obtain sufficient illumination with low-wattage led tubes(6.3). As a result of this, we conserve power.Note: The fact that all of the power switches are on demonstrates that the electrical equipment is being maintained properly.



LED Bulb& save energy	**Performing routine maintenance on electrical fans. The accumulation of dust and debris can hinder the fan's performance. Regular cleaning of the grilles, blades, and motor housing is necessary to maintain optimal operation, ensure smooth airflow& save energy.**

Silent DG sets are designed to generate a very low level of background noise, just as their name suggests. Their structures are constructed to eliminate virtually all noise and vibrations due to careful design. Because of this, they are not harmful to the environment and are ideally suited for use in residential areas.

4.2. Waste Management:

4.2.1. Recycling: Although there were recycling containers all across the campus, the audit showed that there was a lack of effective separation and information about recyclable products. Increased recycling rates can be achieved by upgrading signage, giving clear instructions and implementing a comprehensive recycling education programme.

4.2.2. Composting: The institution can set up a composting system to handle the organic waste produced by Hostel members (Boys & Girls Hostel). Composting can help drastically reduce the quantity of garbage dumped in landfills while also producing beneficial compost for campus landscaping and gardening.

Table: Different types of waste generated in the college and their disposal

Types of waste	Particulars	Disposal method
E-Waste	Computers, electrical and electronic parts	Store these in a separate tank, and we can start selling them directly after a certain amount of time.
Plastic waste	Pen, Refill, Plastic water bottles and other plastic containers, wrappers etc	Items made of plastic that are only intended to be used once, such as bottles, jars, and bags. Encourage people to use water bottles and

		other containers that may be reused. Establish distinct recycling containers for plastic garbage, and after a predetermined period of time, we will be able to begin selling the collected recyclables directly.
Solid wastes	Paper waste, Damaged furniture, paper plates, food wastes	Reuse after maintenance energy conversion. Installing composting systems on a college campus will allow for the conversion of discarded food into nutrient-dense compost that may be used in the campus landscaping or in community gardens. Another option is for institutions to form partnerships with farmers in the surrounding area to collect food waste.
Chemical wastes	Laboratory waste	Water should be used to neutralise. When dealing with hazardous garbage, adhere strictly to all safety regulations.
Wastewater	Washing, urinals, bathrooms	Soak pits
Glass waste	Broken glass wares from the labs	Glass debris should be kept separate from other recyclable materials and disposed of in containers that are specifically intended for glass recycling. Make sure that you recycle glass in the correct manner by coordinating with the

		local recycling centers.
Sanitary Napkin	-	Napkin Incinerators

4.3. Water Usage:

4.3.1. Water Fixtures: Numerous locations within the college had outdated and ineffective water fixtures, which caused excessive water use. Water resources can be saved by swapping these fixtures for low-flow models and encouraging staff and students to practice water-saving habits.

Hand Pump, water tank, water boring and Water reservoir.

Water management table:

Water Management Tasks	Frequency	Responsible Party
Routine examination of water	Monthly	Green Audit Working Team

supplies		
Testing for drinking water quality	Half-yearly	Do
Awareness of water conservation	Half-yearly	Green Audit Working Team & various department
Infrastructure for water distribution that needs upkeep and repair	As needed	Caretaker
Reporting and analysis of water use	Annually	Green Audit Working Team & Caretaker
Learn what causes excessive water consumption.	As needed	Caretaker

Tabular data detailing the subject at hand:

Sl No	Parameters	Response
1	Source of water	Kashipur Ponchayet, Underground, Pond (1500 sqft) & Rain Harvesting Water **Note:**The ground's water serves as a drinking water supply for around 4,500 people, including students and staff members.
2	Source of Drinking Water	Ground's water
3	Any treatment for drinking water	Nil **Note:** Water purifiers have been installed in 1in each bulding and are maintained for 3–4 months afterward.
4	What is the total number of motors that are used?	02 numbers
5	What is the total number of water tanks? Capacity of tank	12 numbers@ 1000 liters each
6	Tap water	28 numbers
	Quantity of water pumped every day	18000 liters/per day
7	Do you waste water, and if so, why?	No

8	How much water is required for gardening purposes?	600 liters/per day
9	How many water coolers are there in total?	02
10	Do you have access to rainwater harvesting?	Yes
11	The number of units harvested and the total volume of water	01 number, We have constructed a water canal to connect a college pond that is 1500 square feet and 5,000 liters of tanks to store rainwater.
12	Any leaky taps	None
13	Daily amount of water that is lost.	Not applicable
14	Is there any kind of plan for the management of water?	Raise public awareness regarding the importance of water conservation, the prevention of pollution, and the implementation of sustainable water management practices. Unambiguous water rights and equitable water allocation regulations should be established to ensure that water is distributed fairly among the many different users.
15	Have any methods for conserving water been implemented?	Rainwater Harvesting

4.4. Transportation:

4.4.1. Public Transport: The college's carbon footprint can be significantly reduced by encouraging employees and students to use public transport. Sustainable transport solutions can be promoted by offering cheap bus passes, encouraging carpooling, and supporting bicycle infrastructure.

	**Students**	**Employee**	**Total**
	Average numbers over 6 days in a peak session		
Bicycles are being used as modes of transportation for getting to and around the college by students, non-teaching staff and teaching staff.	Girls- 275 Boys-184	20	479

4.4.2. Electric Vehicles: To aid in the switch to electric transport, the college may choose to invest in infrastructure for charging EVs. Additionally, encouraging the use of electric vehicles through awareness programs and incentives can help lower the emissions produced by on-campus transportation.

Scooter with an electric motor that is utilized by a member of the college's faculty. There are large numbers of electric motor cycles that both our pupils and our employees use.

4.5. Overall Environmental Awareness:

4.5.1. Curriculum Integration: The institution can integrate environmental awareness and sustainability into its curriculum across various subject areas. This strategy will guarantee that students receive instruction and training in environmental stewardship, encouraging sustainable thinking.

Environmental awareness across different subjects	Parameters	Program time
Language Arts	Discuss texts from literature that are in some way connected to topics concerning the environment, such as conservation or environmental advocacy. Compose poetry or essays that argue for the protection of the environment and use persuasion. Conduct research on a variety of environmental topics, then present your findings. Through various awareness programs, they understand the environmental laws and regulations that apply on the local, national, and international levels. Discuss the roles that governments, NGOs, and people play in the effort to solve environmental problems. Investigate the environmental concerns from both a historical and cultural point of view.	Whole year
Arts	Investigate the causes of climate change and possible solutions to the problem.Analyse the impact that human activities have had on different landscapes as well as the distribution of natural resources. Studies should be done on urbanization, logging, and industry's impact on the natural environment. Investigate geographical approaches to resolving environmental issues, such as environmentally responsible land management planning.	Whole year
Pure Science	Conduct studies on environmental issues, such as assessing water quality, soil analysis, power consumption or	Half-yearly/ each program

	recycling.To better comprehend environmental patterns and forecasts, consider using mathematical models. Investigate the repercussions of environmental actions on the economy, such as doing cost-benefit analyses for environmentally friendly projects.	
Bio-Science	Study subjects include ecosystems, biodiversity, and the interconnectedness of all living things.	Whole year
Physical Education	Encourage students to develop an appreciation for the natural world by having them participate in outdoor sports and activities. Talk about the significance of physical activity for both one's own health and the health of the environment (for example, taking bike instead of the car).	Whole year
NSS	To enhance the amount of green cover and fight deforestation, organizing tree-planting events in local communities and educational institutions is important. To combat littering and to encourage a clean environment, it is important to organize routine clean-up efforts in public places like parks and beaches.To educate both students and members of the general public about environmental issues such as climate change, waste management, renewable energy, and conservation, workshops and seminars should be organized. It should be a priority to create opportunities for individuals to engage with the natural world and develop a sense of ownership over its preservation through participating in hikes and other outdoor activities. To raise awareness about environmental issues and motivate people to take action, you might use social media, posters, and booklets.	Whole year

Plantation Programmes

4.5.2. Student Engagement: A culture of sustainability can be promoted among students by supporting student-led projects, creating environmental groups, and holding awareness events and workshops.

5. Green Campus:

5.1.Floral Diversity:

The following are some actions to take into account when setting up a plantation programme at your college:

-Organise a group of academics, employees, and students who are interested in managing the plantation programme. Assign roles and duties to make the execution go smoothly.

-Consult with local forestry professionals or environmental groups to discover native or adapted tree species that are well-suited to the climate, soil, and goal of the plantation programme. Research and choose suitable tree species.

-To obtain the necessary approvals or permits for planting trees on campus or in the neighborhood, check with the college administration or other appropriate authorities.

- Look into possible funding options, including grants, sponsorships, or collaborations with nearby companies or environmental organizations. This will aid in defraying the price of buying trees, equipment, and other required supplies.

- Establish the plantation event's date, time, and venue. Plan the delivery of the trees, tools, and equipment to the planting location. Make sure that safety

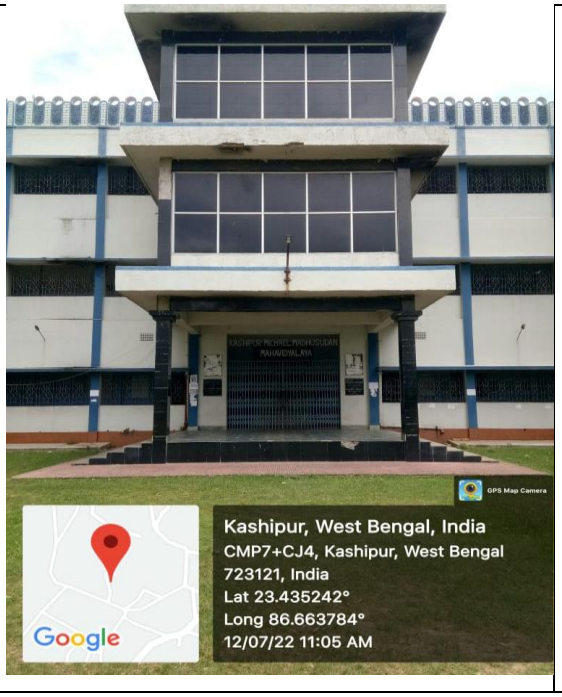
precautions are in place, including appropriate instruction on planting methods and equipment use.

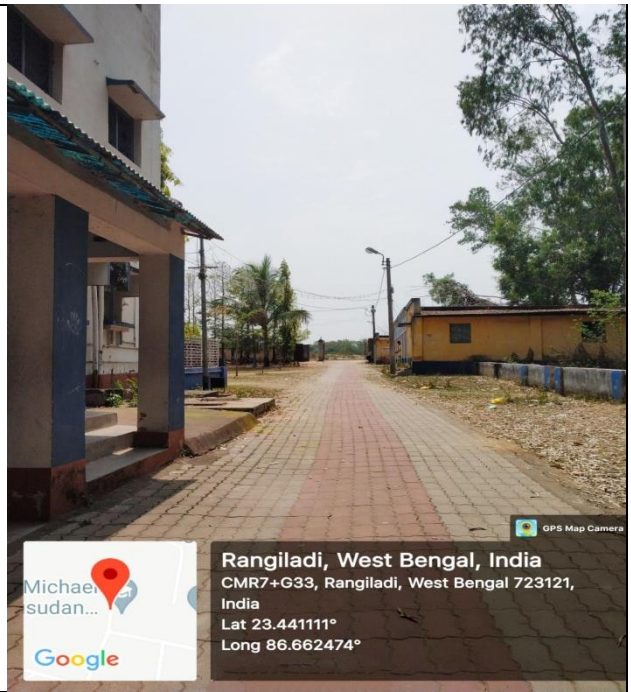
-Promote the planting programme within the campus community by using various communication channels, such as posters, social media, emails, and word-of-mouth, in order to raise awareness and find volunteers. Encourage everyone to volunteer, including alumni, faculty, staff, and students.

-Volunteers should be gathered at the planting site on the appointed planting day. Give them the equipment, instructions, and direction they need to plant trees correctly. Foster a sense of accomplishment and community pride while fostering teamwork.

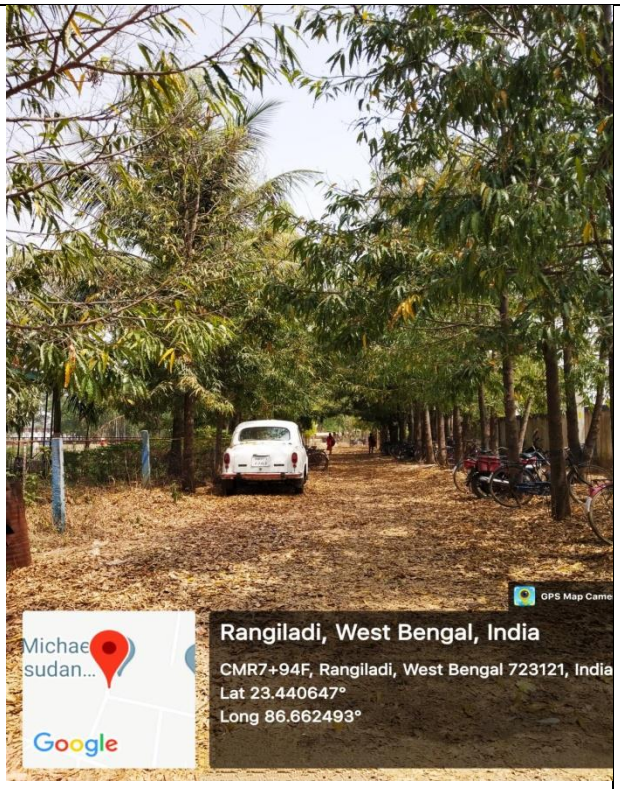
-Stress the significance of taking care of the freshly planted trees. This could entail routine weeding, mulching, watering, and pest or disease inspection. To guarantee the long-term well-being and survival of the trees, think about setting up a system for volunteers or staff members.

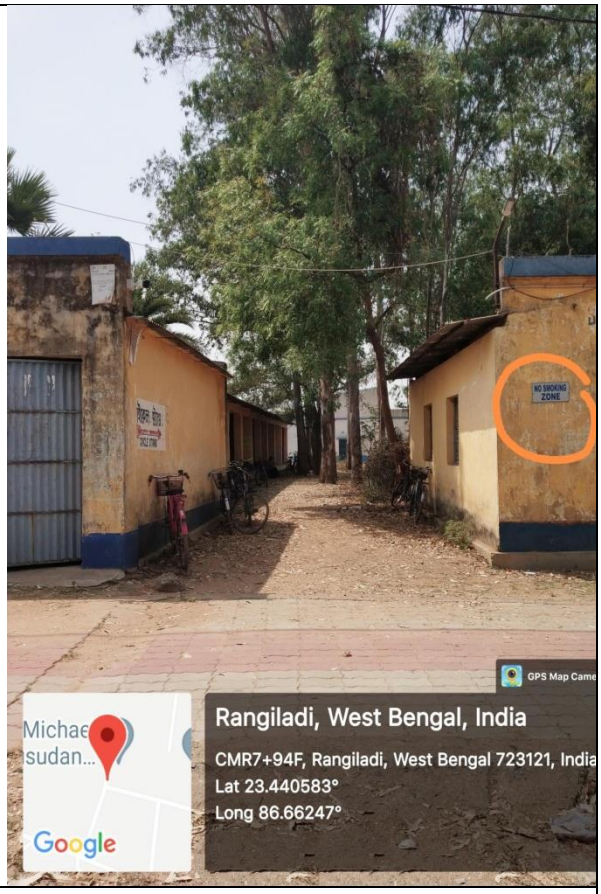
-After the plantation programme, evaluate the impact and accomplishment of the effort. Keep an eye on the trees' growth and survival rate. To determine areas for improvement and to organize upcoming plantation programmes, collect participant and stakeholder input.



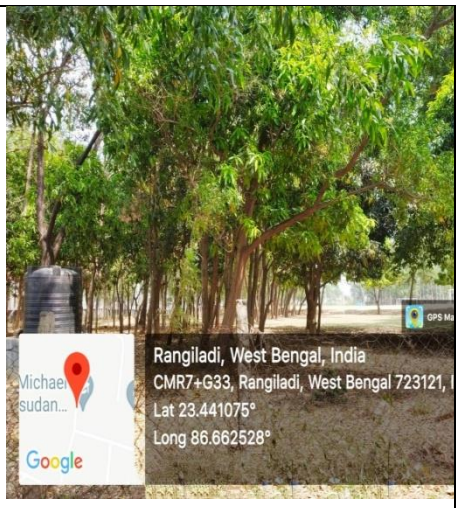


Floral Diversity of the Campus





Cycle and car stand, No smoking zone



Encourage participation from the pupils at the institution, faculty, and staff in the upkeep and preservation of the grassland. Volunteer programmes, instructional workshops, and awareness campaigns are all excellent avenues for accomplishing this goal. A wide variety of plant and animal species can thrive on grasslands. A grassland encourages biodiversity on campus by serving as a habitat for various plant and animal species, thereby contributing to the maintenance of ecological equilibrium.

Grasslands can remove carbon dioxide from the air and store it in their soil, which contributes to the fight against climate change by lowering overall levels of greenhouse gases.

The aesthetic attractiveness of the college campus is enhanced by a football field with lush grassland, which makes the institution more welcoming and appealing to students, professors and visitors.

Ponds are extremely important to the campus's ability to sustain a healthy ecological balance. They help to reduce erosion, contribute to the recharging of groundwater supplies, and support the surrounding ecology by providing a habitat for a wide range of plants and animals.

6. Plantation of Wild type Medicinal plants:

Two medicinal gardens were developed at our college premises. Many wild medicinal plant varieties were lost daily due to anthropogenic activities and pollution. After identifying these plants, we conserve these through propagation in our medicinal gardens. Any interested people or agencies can access it through the proper channel. Medicinal garden is a specific area inside the grounds of a college that is dedicated to the cultivation and upkeep of a wide range of different sorts of medicinal plants. As an educational and research resource, it makes it possible for students, faculty members, and researchers to investigate and gain knowledge on medicinal plants' varied qualities and applications. Culturing a medicinal garden on a college campus can confer major value and benefits to the surrounding academic community and society.

Figure: Our medicinal garden (114 numbers of medicinal plants)

Title of the R&D Project:

Development of a wild varieties medicinal plants garden and its management for conservation of Semi Urban development

PI: Mr. Bubai Bera, Assistant Professor of Botany

Total approved Budget: RS. 680000/-

First Sanctioned G. O. No.: 254(sanc)-ST/P/S&T/1G-30/2018 Dated 25/2/2019

Final year (2nd year) Sanctioned G. O. No.: 1316(sanc)-STBT-11012(11)/43/2021-ST SEC Dated 14/3/2022.

Area: Medicinal garden at college premises which coved about 7520 sq.ft +1320 sq.ft = Total 8840 sq. ft.

List of Floral groups:

Name of Plants at our APC College premises			
Sl	**Scientific name**	**Common name**	**Family**
1.	*Samanea saman* (Jacq.) Merr.	Shirish	Fabaceae
2.	*Swietenia mahagoni* (L.) Jacq.	Mehagoni	Meliaceae
3.	*Alstonia scholaris* L.R.Br.	Chhatim	Apocynaceae
4.	Polyalthia lingifolia (Sonn.) Thwaites	Debdaru	Annonaceae
5.	Tectona grandis L.f.	Segun	Verbanaceae
6.	Terminalia arjuna (Roxb)Wight& Arn	Arjun	Combretaceae
7.	Acacia auriculiformis A.Cunn.ex.Benth	Sonajhuri	Fabaceae
8.	Dalbergia sisoo Roxb.	Shisoo	Fabaceae
9.	Ficus religiosa L.	Ashwattha	Moraceae
10.	Psidium guajava L.	Peyara	Myrtaceae
11.	Mangifera indica L.	Aam	Anacardiaceae
12.	Syzygium cumini (L.) Skeels	Jam	Myrtaceae
13.	Mimusops elengi L.	Bakul	Sapotaceae
14.	Neolamarckia cadamba (Roxb.)Bosser	Kadam	Rubiaceae
15.	Bambusa ventricosa Mc. Clure	Ghati bansh	Poaceae

16.	Cocos nucifera	Narkel	Arecaceae
17.	Citrus limetta Risso	Lebu	Rutaceae
18.	Ziziphus mauritiana Lam.	Kul	Rhamnaceae
19.	Nerium oleander L.	Karabi	Apocynaceae
20.	Hibiscus rosa-sinensis	Joba	Malvaceae

7. Conclusion:

The KASHIPUR MICHAEL MADHUSUDAN MAHAVIDYALAYA's green audit identifies some areas that should be improved to advance sustainability initiatives on campus. Reduced energy use, better waste management, optimized water use, sustainable transportation options, and raised environmental awareness can all result from implementing the suggested solutions. KASHIPUR MICHAEL MADHUSUDAN MAHAVIDYALAYA can set an example of environmental stewardship for its students and contribute to a cleaner future by implementing these improvements.