J.N.L. College

Khagaul, Patna-801105

(A Constituent Unit of Patliputra University, Patna)

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Principal Office

Ref.No. 457/GS/2024 Date 21/6/2024

Declaration

This is to certify that the data includes in this self-study Report (SSR) are true to the best of my knowledge. This SSR is prepared by the institution after discussion and no part thereof has been outsourced.

I/We am/are aware that the peer team will validate the information provided in this SSR during the peer team visit.

20.6.24

Prof. (Dr.) Nikhil Kumar Singh
IQAC Director
J.N.L. College, Khagaul,
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20/6/24

20.06.2024

Prof. (Dr.) Madhu Prabha Singh
Principal
J.N.L. College, Khagaul,
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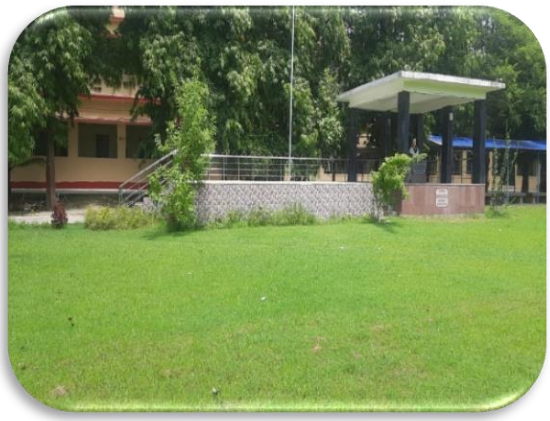
JAGAT NARAIN LAL COLLEGE, KHAGAUL

A constituent unit of Patliputra University

GREEN AUDIT REPORT

Year- 2022



Members of Green Audit Committee

Prof. (Dr.) Madhu Prabha Singh	Chair person Principal J.N.L College Khagaul, Patna
Dr. Pallavi	Co – Ordinator, Assistant Professor and Head, Dept. of Botany, J.N.L College, Khagaul, Patna
Dr. Shubhangi Tripathi	Assistant Professor and Head Department of Chemistry J.N.L College, Khagaul, Patna
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External Expert – Green Audit Committee

Dr, Mehta Nagendra Singh — Geo-Scientist, Environmentalist

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Principal's Message

The term 'Sustainable Development' is in vogue these days with the academia, policy makers and governments around the globe accounting for it in 'all walks of life'.

The concept of 'Sustainability' appears to have slowly but successfully bridged the gap between the pervasive 'thought process' and the 'real time' application as a tool for optimum resource utilization besides taking care not to despoil the environment, irrevocably, in its wake.

As the community of nations, in general and India with its exponential population growth grapple with the issue of 'environmental sustainability', the role of higher educational institutions to create awareness among the denizens and to educate the future generations, has been drawing a lot of attention, of late. The denouement of 'people of wisdom' around the world has been unanimous, given the long-established linkages of the higher educational institutions with the Quaternary sector. It is expected to facilitate the purported ease of transfer of 'game theory' models and tools developed by domain experts, to identify the areas of focus followed by optimization of environmental performance of the educational institutes, on a pilot basis. The army of young fertile minds bubbling with energy and passion can be channelized by their teachers and guides to test , improve, promote and replicate the concepts of energy savings, recycle of waste, reuse, rain water harvesting, to name a few. The process of iteration will fuel learning and institutional memory culled out from the repository of experience will help the higher educational institutes to become vehicles of 'Sustainability' besides providing ready-made solutions for many a woe bedeviling the planet Earth.

"Green Audit" is one such tool developed as a result of the effort put in by the "Green Audit Committee 2021-22" which carried out a survey to identify the eco-friendly and sustainable institutional practices and the areas of concerns on the Anugrah Narayan College campus. The team has rather diligently come up with a roadmap to ameliorate the aforesaid concerns besides strengthening the existing practices and promoting new environmental sustainability approaches by way of its report. I am very happy to present and forward the "Green Audit Report 2021-22" of Anugrah Narayan College campus which shall prove to be a 'lodestar' in its domain.

I must congratulate Dr Pallavi, Co-Ordinator , Green Audit committee and her team for the efforts that has gone in designing and completing this report. I hope the report

will be helpful to all concerned in the Jagat Naraian Lal College campus and will motivate for Greening our educational institutions.

"**I Can Find God**

In Nature,

In Animals, In Birds

And in Environment"

- Pat Bukley

ACKNOWLEDGEMENT

The success and outcome of this report required a lot of guidance and assistance from many people and we are extremely privileged to have gotthis all along the completion of this audit. All that we have done is only due to such facilitation and assistance.

We acknowledge respect and thank Prof. (Madhu Prabha Singh for providing usan opportunity to coordinate the Green Audit 2021-22 in J.N.L College Khagaul and giving us all support and guidance, which made us complete the auditin due time. We are extremely thankful to for providing full support and guidance, although he had a very busy schedule managing the administrative affairs of the college.

We owe our deep gratitude to our Green Audit Committee members who took keen interest on this audit worktill the completion of work by providing all the necessary information for developing a good system andvaluable suggestion.

I am thankful to and fortunate enough to get constant encouragement, support and guidance from all Head of Departments, Teachers, and staffs of college for their timely support in successfully completion of Auditwork.

I heartily thank our students Department of Dept of Botany for their volunteer ship in generating data from all the Departments/Blocks during this Green Audit work.

ABOUT COLLEGE

Established in 1960 through the generous donation of land by the esteemed freedom fighter and Bihar Cabinet minister, Late Jagat Narain Lal, Jagat Narain Lal College has been a beacon of education in the heart of Bihar. Its humble beginnings in the 1950s grew into a pivotal institution situated just 1 km south of Danapur Railway Station and 5 km from the Jay Prakash Narayan International Airport.

Nestled along the picturesque NH-98, about 500 meters from Moti Chowk in Patna, this college was a pioneering force in providing education to the agrarian communities of this semi-urban region. It has remained the sole educational institution offering education up to the post-graduation level, catering specifically to the needs of this area.

Originally affiliated with Bihar University, Muzaffarpur, the college later became a constituent unit of Magadh University, Bodh Gaya, and in 2018, became part of the newly constituted Patliputra University, Patna.

Today, Jagat Narain Lal College boasts an enrollment of over 4000 students, providing education in three faculties—Science, Arts, and Humanities—up to the Degree Honours level. Moreover, it offers post-graduate programs in History, Political Science, Chemistry, and Zoology, empowering students from economically and socially disadvantaged backgrounds.

The institution has also introduced four vocational courses—B.Sc. in Biotechnology, B.Sc. in Information Technology, B.C.A., and B.Com.—further diversifying its educational offerings.

With a vision to enhance the quality of life for economically, socially, and educationally marginalized sections of society, the college remains steadfast in its commitment to imparting quality higher education.

The college's journey, from its inception with a noble cause to its current stature as a multi-disciplinary educational hub, reflects its unwavering dedication to upliftment through education.

GREEN AUDIT AS A CONCEPT

Green auditing is the process of identifying and determining whether institution's practices are eco-friendly and sustainable through proper reporting and analysis. Green audit regulates all practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an 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. Green audit is assigned to the criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India which declares the institutions as Grade A, B or C according to the scores assigned during the accreditation.

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues. Green auditing is one among them for educational institutions. Once a baseline is established, the data can serve as a point of departure for further action in campus greening. Existing data will allow the college to compare its programs and operations with those of peer institutions, identify areas in need of improvement, and prioritize the implementation of future projects. This data will also provide a basis for calculating the economic benefits of resource conservation projects, by establishing the current rates of resource use and their associated costs. This audit initiative focused initially on educating colleges and universities through workshops, guidebooks, fact sheets and ensuring compliance through inspections and self audits. A very simple indigenized system has been devised to monitor the environmental performance of St. Teresa's College, Ernakulam. It comes with a series of questions to be answered on a regular basis.

This innovative scheme is user-friendly and totally voluntary. The aim of this is to help the institution to set environmental examples for the community, and to educate the young learners.

GOALS OF GREEN AUDIT

University has conducted a green audit with specific goals as:

1. Identification and documentation of green practices followed by the college.
2. Identify strength and weakness in green practices.
3. Analyze and suggest solution for problems identified.
4. Assess facility of different types of waste management.
5. Increase environmental awareness throughout campus
6. Identify and assess environmental risk.
7. Motivates staff for optimized sustainable use of available resources.
8. The long-term goal of the environmental audit program is to collect baseline data of Environmental parameters and resolve environmental issue before they become problem.

OBJECTIVES OF THE GREEN AUDIT

The main objective of the green audit is to promote the Environment Management and Conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations,policies and standards.

As follows :

- To introduce and aware students to real, apprehensions of environment and its sustainability

- To secure the environment and cut down the threats posed to human health by analyzing thepattern and extent of resource use on the campus.

- To establish a baseline data to assess future sustainability by avoiding the interruptions inenvironment that are more difficult to handle and their corrections requires high cost.

- To bring out a status report on environmental sustainability of college campus

GREEN CAMPUS

List of Plant species present on campus

1	Lythraceae	8	Caecalpiniaceae
	Lagerstroemia spiciosa		*Saraca indica*
	Pride of India		Sita Ashok

2	Moraceae	9	Lythraceae
	Ficus benghalensis		*Lawsonia inermis*
	Banyan		Mehndi

3	Rutaceae	10	Moraceae
	Aegle marmelos		*Ficus virens*
	Bel		Pakad

4	Caesalpiniaceae	11	Caesalpiniaceae
	Delonix regia		*Cassia fistula*
	Gulmohar		Golden rain tree

5	Annonaceae	12	Nyctaginaceae
	Polyalthia longifolia		*Bougainvillea glabra*
	Ashok		Paper Flower

6	Anacardiaceae	13	Meliaceae
	Mangifera indica		*Azadirachta indica*
	Mango		Neem
7	Rutaceae	14	Apocynaceae
	Murraya koenigii		*Thevetia neriifolia*
	Curry Patta		Nerium Yellow

15	Verbinaceae	22	Malvaceae
	Tectona grandis		*Hibiscus rosasinensis*
	Teak		China rose

16	Bixaceae	23	Rosaceae
	Bixa orellana		*Rosa indica*
	Sindoor		Rose

17	Cupressaceae	24	Myrtaceae
	Platycladus orientalis.		*Psidium guajava*
	Morpankhi, Thuja		Guava

18	Palmae	25	Myrtaceae
	Phoenix sylvestris		*Callistemon speciosus*
	Date palm		Bottle brush

19	Caesalpiniaceae	26	Rubiaceae
	Bauhinia veriegata		*Ixora coccinia*
	Kachnar		Torch plant
			Flame of the wood

20	Caesalpiniaceae	27	Cycadaceae
	Bauhinia acuminata		*Cycas circinalis*
	Dwarf White Orchid Tree		Cycas

21	Menispermaceae	28	Apocyanaceae
	Tinospora cordifolia		*Tabernaemontana divaricata*
	Tinospora		Pinwheel

29	Euphorbiaceae	33	Euphorbiaceae
	Euphorbia neriifolia		*Phyllanthus emblica*
	Milk hedge		Indian goose balm

30	Apocyanaceae	34	Oleaceae
	Carissa carandas		*Jasminum arborescens*
	Karonda		Chameli
31	Oleaceae	35	Apocynaceae
	Jasminium auriculatum		*Nerivm indicum*
	Juhi		White kaner

32	Malvaceae	36	Oleaceae
	Bombaxceiba		*Gardenia jasminoides*
	Semal		Gandhraj

BUILT-UP ENVIRONMENT

Sl. No.	Department / Block	Building type	Area in Sq. ft	Proper	Fire preventions provisions	Eco-friendliness	Girls Rest Rooms	Toilets for	Remarks
1	**History**	Old		✓	1	Avg.	X	✓	Maintained
2	**Political Science**	Old		✓	1	Avg.	X	✓	Maintained
3	**Economics**	Old		✓	1	Avg.	X	✓	Maintained
4	**Philosophy**	Old		✓	1	Avg.	X	✓	Maintained
5	**Psychology**	Old		✓	1	Avg.	X	✓	Maintained
6	**Botany**	Old		✓	1	Fair	X	✓	Maintained
7	**Zoology**	Old		✓	1	Fair	X	✓	Maintained
8	**Chemistry**	Old		✓	1	Fair	X	✓	Maintained
9	**Physics**	Old		✓	1	Fair	X	✓	Maintained
10	**Mathematics**	Old		✓	1	Fair	X	✓	Maintained
11	**Hindi**	Old		✓	1	Avg.	X	✓	Maintained
12	**Urdu**	Old		✓	1	Avg.	X	✓	Maintained
13	**English**	Old		✓	1	Avg.	X	✓	Maintained
14	**Biotechnology**	New		✓	1	Good	X	✓	Maintained

15	**Dept of Computer App.**	New		✓	1	Good	X	✓	Maintained
16	**Campus Library**	Old		✓	1	Better	X	✓	Very Well Maintained
17	**Canteen/Cafeteria**	Old		✓	N/A	Avg.	X	✓	Maintained
18	**Administrative Block**	New		✓	2	Better	✓	✓	Very Well Maintained
19	**Teacher's Room**	Old		✓	1	Fair	X	✓	Well Maintained
20	**Girl's Hostel**	New		✓	2	Good	✓	✓	Maintained

LANDSCAPE ENVIRONMENT

Sl. No.	Department / Block	Overall Green cover	Native Trees/Plants	Exotic Trees/Plants	Overall Biodiversity	Landscape Management Plan	Natural/Artificial Water Bodies	Other Activity
1	**History**	✓	✓	X	Fair	X	X	R.I
2	**Political Science**	✓	✓	X	Fair	X	X	R.I
3	**Economics**	✓	✓	X	Fair	X	X	R.I
4	**Philosophy**	✓	✓	X	Fair	✓	X	R.I
5	**Psychology**	✓	✓	X	Fair	✓	X	R.I
6	**Botany**	✓	✓	✓	Good	✓	X	MI
7	**Zoology**	✓	✓	✓	Good	✓	ü	MI
8	**Chemistry**	✓	✓	X	Good	✓	X	R.I
9	**Physics**	✓	✓	X	Good	X	X	R.I
10	**Mathematics**	✓	✓	X	Avg.	X	X	R.I
11	**Hindi**	✓	✓	X	Fair	✓	X	R.I
12	**Urdu**	✓	✓	X	Fair	✓	X	R.I
13	**English**	✓	✓	X	Fair	✓	X	R.I
14	**Biotechnology**	✓	✓	X	Good	✓	X	MI

3 15	**Dept of Computer App.**	✓	✓	X	Fair	✓	✓	MI
16	**Campus Library**	✓	✓	✓	Good	✓	X	MI
17	**Canteen/Cafeteria**	✓	✓	X	Good	✓	✓	I
18	**Administrative Block**	✓	✓	X	Good	✓	X	I
19	**Teacher's Room**	✓	✓	X	Good	X	X	MI
20	**Girl's Hostel**	✓	✓	X	Good	X	✓	**I**

MI : Moderate Improvement
RI: Required Improvement
I: Improved

WATER MANAGEMENT

Sl. No.	Department /Block	Wise use of water	Water Leakage	Use of Water/Purification	Rain Harvesting	Use of Water /Cooler	Water Pollution incidence	Water Consumption /day	Water Storage	Watertank Cleaning	Water management Practices	Other Activity
1	**History**	✓	✓	X	X	X	X	08 Lt./day	✓	X	X	Avg.
2	**Political Science**	✓	✓	X	X	X	X	10 Lt./day	✓	X	X	Avg.
3	**Economics**	✓	✓	X	X	X	X	08 Lt./day	✓	X	X	Fair
4	**Philosophy**	✓	X	✓	X	✓	X	08 Lt./day	✓	X	X	Fair
5	**Psychology**	✓	X	✓	X	✓	X	12 Lt./day	✓	X	✓	Avg.
6	**Botany**	✓	X	✓	X	X	X	30 Lt./day	✓	X	X	Better
7	**Zoology**	✓	X	✓	X	✓	X	30 Lt./day	✓	X	X	Better
8	**Chemistry**	✓	X	✓	X	X	X	40 Lt./day	✓	X	X	Better
9	**Physics**	✓	X	✓	X	✓	X	30 Lt./day	✓	X	X	Better
10	**Mathematics**	X	X	✓	X	✓	X	05 Lt./day	✓	X	X	Better
11	**Hindi**	✓	✓	✓	X	✓	X	08 Lt./day	✓	X	X	Fair
12	**Urdu**	X	✓	✓	X	X	X	05 Lt./day	✓	X	✓	Better
13	**English**	X	X	✓	X	X	X	05 Lt./day	✓	X	✓	Better
14	**Biotechnology**	X	X	✓	X	✓	X	0 Lt./day	✓	X	✓	Good

15	**Dept .of Computer App.**	X	X	✓	X	✓	X	08 Lt./day	✓	X	✓	Excellent
16	**Campus Library**	X	X	X	X	X	X	50 Lt./day	✓	✓	✓	Fair
17	**Canteen/Cafeteria**	X	✓	X	X	X	X	100 Lt./day	✓	✓	X	Avg.
18	**Administrative Block**	X	X	✓	X	✓	X	60 Lt./day	✓	✓	✓	Excellent
19	**Teacher's Room**	X	X	✓	X	X	X	50 Lt./day	✓	✓	X	Avg.
20	**Girl's Hostel**	✓	X	✓	X	X	X	100Lt/day	✓	✓	X	Avg.

ENERGY MANAGEMENT

Sl. No.	Department / Block	No. of Tubes and Bulbs	No. of A/C	LCD Projector	No. of Photocopier	Computers/ printers	LEDs	Non Conventional (solar)	Star rating	Duration of Utilization	Energy Management	Other Activity
1	**History**	4	0	X	N/A	0	2	NA	2	6	X	Fair
2	**Political Science**	5	0	X	N/A	0	2	NA	3	8	X	Fair
3	**Economics**	17	0	X	N/A	0	3	NA	3	8	X	Fair
4	**Philosophy**	12	0	X	N/A	0	1	X	2	6	X	Fair
5	**Psychology**	13	0	X	N/A	0	1	X	2	6	X	Fair
6	**Botany**	26	0	X	N/A	1/1	2	X	2	8	X	Fair
7	**Zoology**	25	0	X	N/A	1/1	2	X	2	8	X	Fair
8	**Chemistry**	24	0	X	N/A	1/1	3	X	3	10	X	Fair
9	**Physics**	25	0	X	1	0	4	X	2	10	X	Better
10	**Mathematics**	9	0	X	1	0	2	X	2	8	X	Better
11	**Hindi**	14	0	X	N/A	0	1	X	2	6	✓	Fair
12	**Urdu**	8	0	X	N/A	0	1	X	2	4	X	Fair
13	**English**	12	0	X	N/A	0	1	X	2	6	X	Good
14	**Biotechnology**	18	0	X	N/A	0	2	X	2	10	X	Good

15	**Dept of Computer App.**	15	2	X	N/A	12/1	2	X	2	10	X	Better
16	**Campus Library**	30	2	X	1	13/1	13	X	2	8	X	Good
17	**Canteen/Cafeteria**	10	0	X	N/A	0	3	X	2	9	X	Fair
18	**Administrative Block**	48	5	✓	5	6/4	10	X	3	12	X	Fair
19	**Teacher's Room**	16	2	X	1	1/1	4	X	2	8	✓	Excellent
20	**Girl's Hostel**	40	0	X	N/A	0	7	X	3	8	X	Fair

WASTE MANAGEMENT

Sl. No.	Department / Block	Food / Organic Waste/Month	Non Plastic dry Waste/Month	Plastic, Thermocol, Glass Wares/Month	Other (e-waste)	Dustbin in Dept./Blocks	Management of Organic waste	Management of other waste	Waste dumping Pit	Vermi-composting Unit	Waste management Practices
1	**History**	2%	Medium	Min	X	1/5	X	X	X	X	Fair
2	**Political Science**	2%	Medium	Min	X	1/5	X	X	X	X	Fair
3	**Economics**	2%	Medium	Min	X	1	Fair	X	X	X	Fair
4	**Philosophy**	2%	Med-Max	Min	X	2	X	X	X	X	Avg.
5	**Psychology**	2%	Med-Max	Min	X	1	X	X	X	X	Avg.
6	**Botany**	25%	Med-Max	Max	X	4	Fair	Dump as Garbage	X	X	Good
7	**Zoology**	25%	Med-Max	Med	X	4	Fair	Dump as Garbage	X	X	Good
8	**Chemistry**	25%	Med-Max	Max	X	6	Fair	Dump as Garbage	X	X	Good
9	**Physics**	15%	Med-Max	Max	X	3	Fair	Dump as Garbage	X	X	Good
10	**Mathematics**	10%	Med-Max	Medium	X	2	X	Dump as Garbage	X	X	Good
11	**Hindi**	5%	Medium	Min	X	1	X	Open	X	X	Fair
12	**Urdu**	2%	Min	Min	X	1	X	Open	X	X	Fair
13	**English**	2%	Medium	Min	X	1	X	Open	X	X	Fair
14	**Biotechnology**	30%	Max	Max	✓	4	Fair	Dump as Garbage	X	X	Better

15	**Department of Computer App.**	10%	Max	Max	✓	1	Fair	Dump as Garbage	X	X	Better
16	**Campus Library**	10%	Med-Max	Med-Max	X	2	X	Dump as Garbage	X	X	Good
17	**Canteen/Cafeteria**	75%	Max	Max	X	3	Fair	Dump as Garbage	X	X	Fair
18	**Administrative Block**	50%	Max	Max	✓	3	Avg.	Dump as Garbage	X	X	Good
19	**Teacher's Room**	15%	Med-Max	Max	X	1	Fair	Dump as Garbage	X	X	Fair
20	**Girl's Hostel**	25%	Med-Max	Max	X	**6**	Fair	Dump as Garbage	X	X	Fair

OBSERVATIONS AND RECOMMENDATIONS

GREEN AREA

This includes the plants, greenery and sustainability of the campus to ensure that the blocks/buildings confirm green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programmes.

Observations

Various tree plantation programs are being organized during the month of rainy seasons at college campus through Botany Department, NSS unit and by volunteers of students. This program helps in encouraging eco- friendly environment which provides pure oxygen within the institute and awareness among students, teachers and staff of the college. The plantation program includes various types of indigenous species of ornamental and medicinal wild plant species.

Recommendations

- Reviews periodically the list of trees planted in the garden, allot numbers to the trees and keep records. Give scientific names to the trees. Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service.

- Create awareness of environmental sustainability among college students from all the departments and takes actions to ensure environmental sustainability.

- Establish a College Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy including advice and guiance to staff and students on how to implement this Policy.
- Ensure that an audit is conducted annually, and action is taken on the basis of audit report,recommendation and findings.

- Celebrate every year **'Environment Day', 'Earth Day', World Water Day'** and plant trees on these day to make the Campus Greener and spread the message among students.

WATER MANAGEMENT

This indicator addresses water consumption, water sources, storing of water, appliances and fixtures. A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use in the campus and utility.

Observations

The study observed that bore well is the one of the major sources of water. Water is used for drinking purpose, canteen, toilets, laboratory and gardening. During the survey, minimum loss of water is observed, leakage of water from taps was almost not found in any of the department nor over flow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 5000 L/day, which include 1,000 L/day for domestic purposes 3000 L/day for gardening and 1,000 L/day for different laboratories. One rain water recharging unit in Environment and Water Management Departmentwas also functional for storing reutilization of water. Gardens are watered by using pipe/drip/sprinkler system to save water. It was a unique step towards greening practices. In Fountain Garden recycled water pump with filter was used to maintain the water quality and beautification of the garden.

Recommendations

- There is an essential need of regular monitoring; controlling overflow and periodical supervision drills should be arranged. In campus various small, medium and large scale, **Reuse/ Recycle of Water System** is necessary. In this context, designing and pertaining Rain Water harvesting, could be a better idea.

- Minimize wastage of water and use of electricity can be done during water filtration process such as at the time of RO filtration process, outlet of all the units could connected with a common discharge unit and further it can be transferred to main water recharge unit of the campus. The regular services of equipment should be done to avoid high electricity consumption and wastage of water.

- Ensure that all cleaning products used by college staff have a minimal detrimental impacton the environment, i.e. are biodegradable and non-toxic. Monitoring of Laboratories taps/water dispenser units should be maintained quarterly andon the basis that a departmental progress report should be available for future feasibility.

ENERGY MANAGEMENT

This is one of the prime indicator which addresses energy consumption, energy sources, energy monitoring, lighting, and appliance. Energy use is clearly an important aspect of campus sustainability and thus requires explanation for its inclusion in the assessment.

Observations:

Energy source utilized by all the departments and common facility centre is fully based on electricity supply by South Bihar Power Distribution Co. Ltd. only. Total energy consumption is determined approximately 1200 KWH/month by all departments.

All the departments and common facility centres are equipped with CFL lamps. Approximately 140 CFLs (Capacity) are counted during survey. Besides this Solar Panels/Lights are also installed in the campus for night shifts. Equipments like Computers are used with power saving mode. Also, campus administration runs switch –off drill on regular basis. In science department like Physics, Chemistry, Mathematics, Botany and Zoology laboratories equipments and electricity was shut downed after occupancy time. It was found one of the best parts of green practices for energy conservation.
Use of Clean energy is being promoted by using Solar Energy for a part of energy consumption.

Recommendations:

- Support renewable and carbon-neutral electricity options on any energy purchasing consortium, with the aim of supplying all college properties with electricity that can beattributed to re-new able and carbon-neutral sources.

- Appreciate that it is preferable to purchase electricity from a company that invests in newsources of renewable and carbon-neutral electricity.

- In classrooms of most of the departments the switch boards can be painted/marked with no. of Tube-lights, LED's, Fans like T1, L1, F1 to avoid unnecessary energy load on the particular departments.

- In Department of Sciences, the laboratories equipments and instruments should hand over with Annual Maintenance Contracts for the safeguards of machinery and consumable cost of electricity. Old and heavy equipments as well as electricity consuming appliances should be replacedto save power.

WASTE GENERATION

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass, dust etc and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current management practice of solid waste generated in the campus. The different solid wastes collected as mentioned above.

Observations

The total solid waste collected in the campus is approx. 40Kg/day. Waste generation from tree droppings and lawn management is a major solid waste generated in the campus. The waste is segregated at source by providing separate dustbins for Bio-degradable and Plastic waste. Segregation of chemical waste generated from various science laboratories and professional course department laboratories is also practiced. In most of the departments, single sided used papers reused for writing and printing which was observed a very good practice for green concept. Important and confidential reports/ papers are sent for pulping and recycling after completion of their preservation period. Minimal plastic wastes almost 1Kg/day is generated by the college campus which are categorized and segregate for recycling point. Metal waste and wooden waste is stored and given to authorized scrap agents for further processing. Few glass bottles are reused in the laboratories.

Recommendation

- Reduce the absolute amount of waste that if produces from college students, Teachers and Staffs'.
- Use of separate Dustbins (Biodegradable/Non-Biodegradable) should be followed very promptly.
- Make full use of all recycling facilities provided by City Municipality and private suppliers, including glasses, cans, white, coloured and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture including laboratories broken glass-wares, Chemical containers, other toxic lab wastes.

E-WASTE GENERATION

E-waste can be described as consumer and business electronic equipment that is near or at the end of its useful life. This makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment.

Observations:

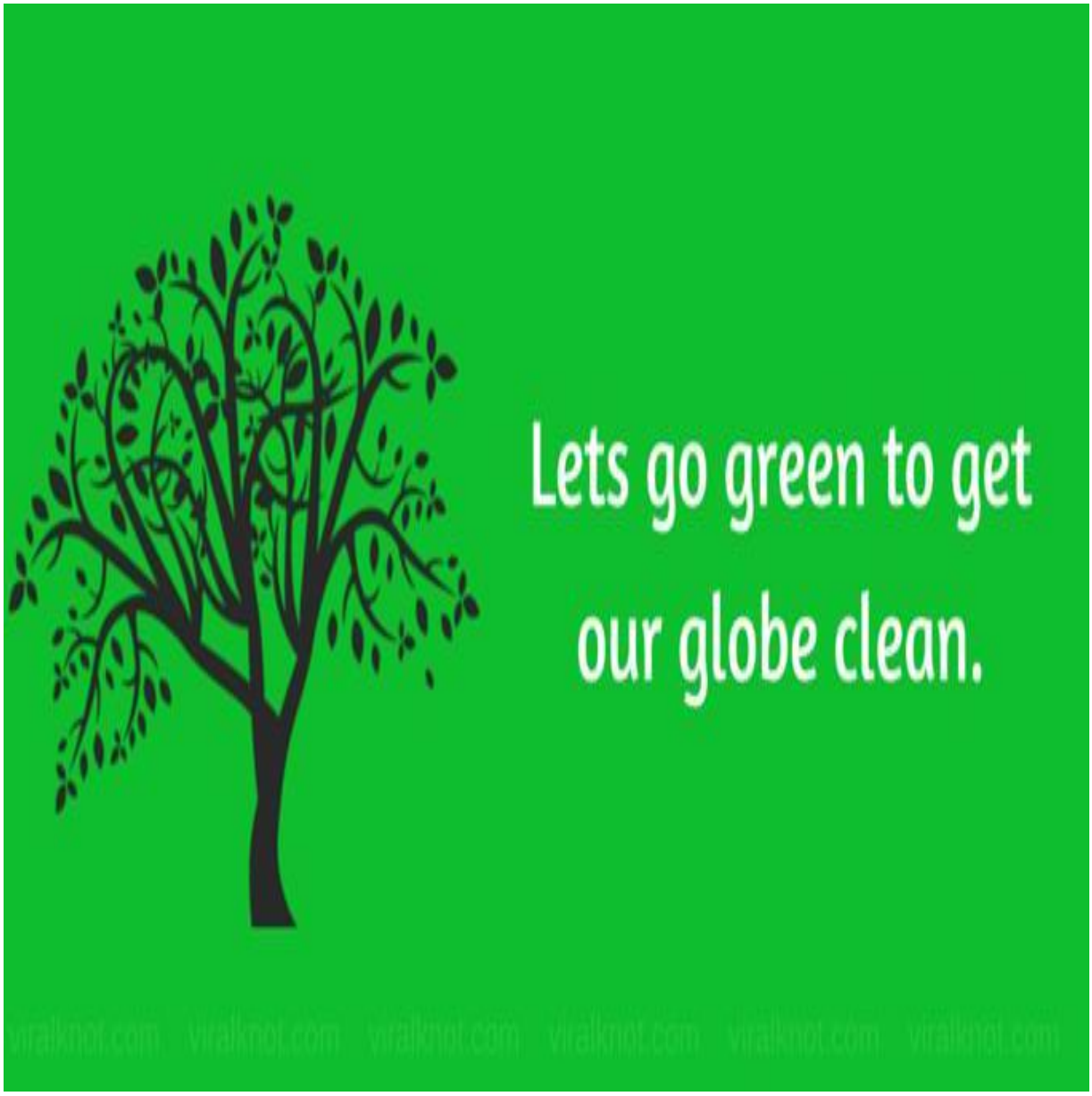
The quantity of E-waste generated in the college is very less in amount. The cartridges of printers are refilled through outsource policy of the college. The E- waste and defective item from departments and computer laboratory is being stored properly. The college has taken major step to contact Government agencies and approved private agencies for the E-waste management and disposal facility to dispose it in scientifically.

Recommendations:

- Recycle or safely dispose of white goods, computers and electrical appliances.
- Use reusable resources and containers and avoid unnecessary packaging where possible.
- Always purchase recycled resources where these are both suitable and available.

CONCLUSION

It is noteworthy that in this higher educational institution, an undergraduate and post graduate school of learning, the faculty and its students have taken a ‘leap of faith’ and have exhibited their propensity for environmental research activity. It is hardly surprising that their missionary zeal has been fuelled by significant early environmental initiatives like utilization of solar lights for lighting up the campus in evenings and nights, water harvesting / water recharging units, paperless work system, Phyto-rid sewage treatment unit and vermin-composting practices on the campus. Environmental awareness programs, in the past, organized by the college administration have helped the campus in its march towards ‘go green’. The recommendations on management of waste using eco-friendly and scientific techniques show the way ahead to the development of a prosperous Green Campus in particular and the community at large.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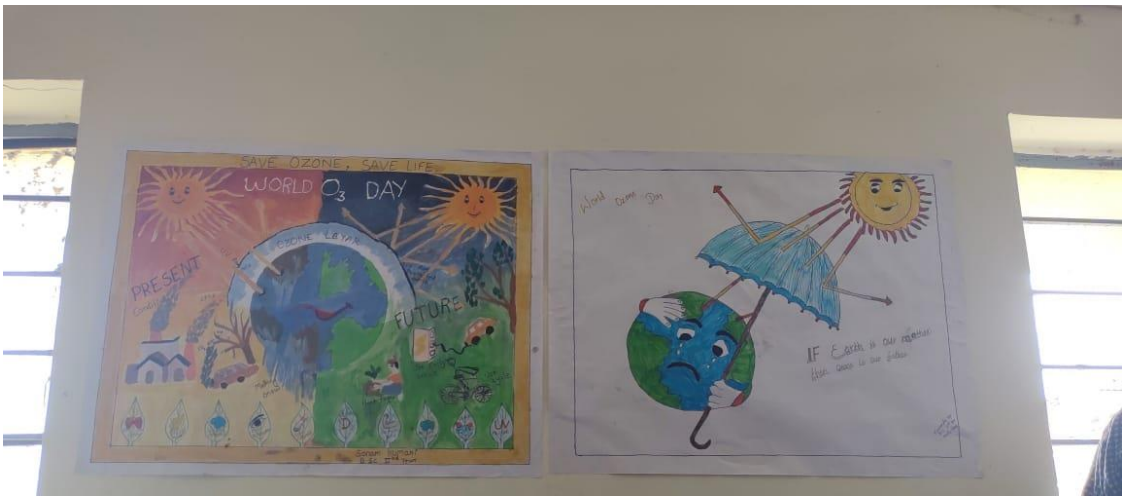

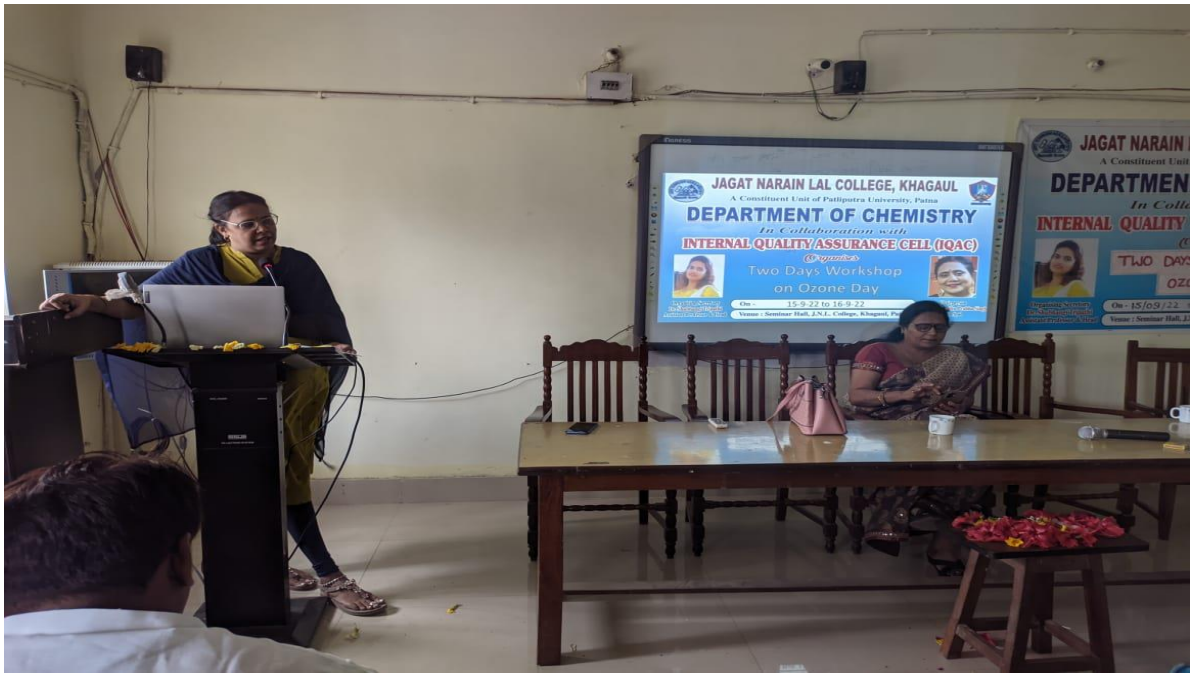

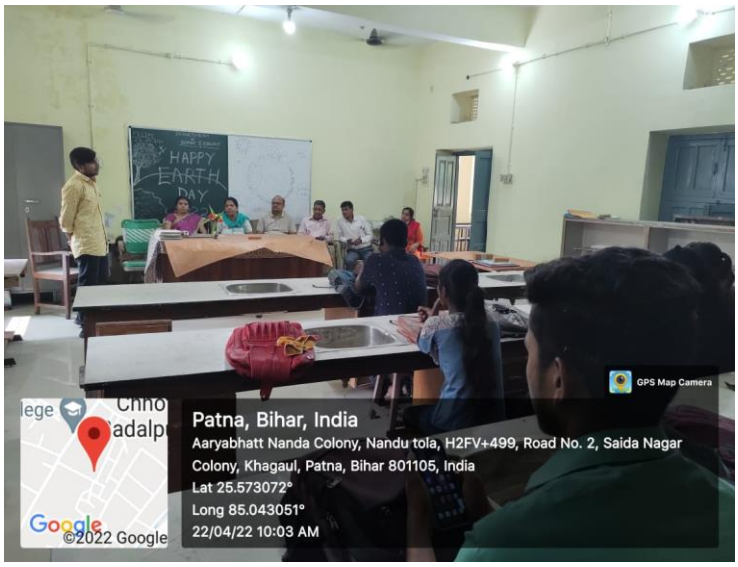
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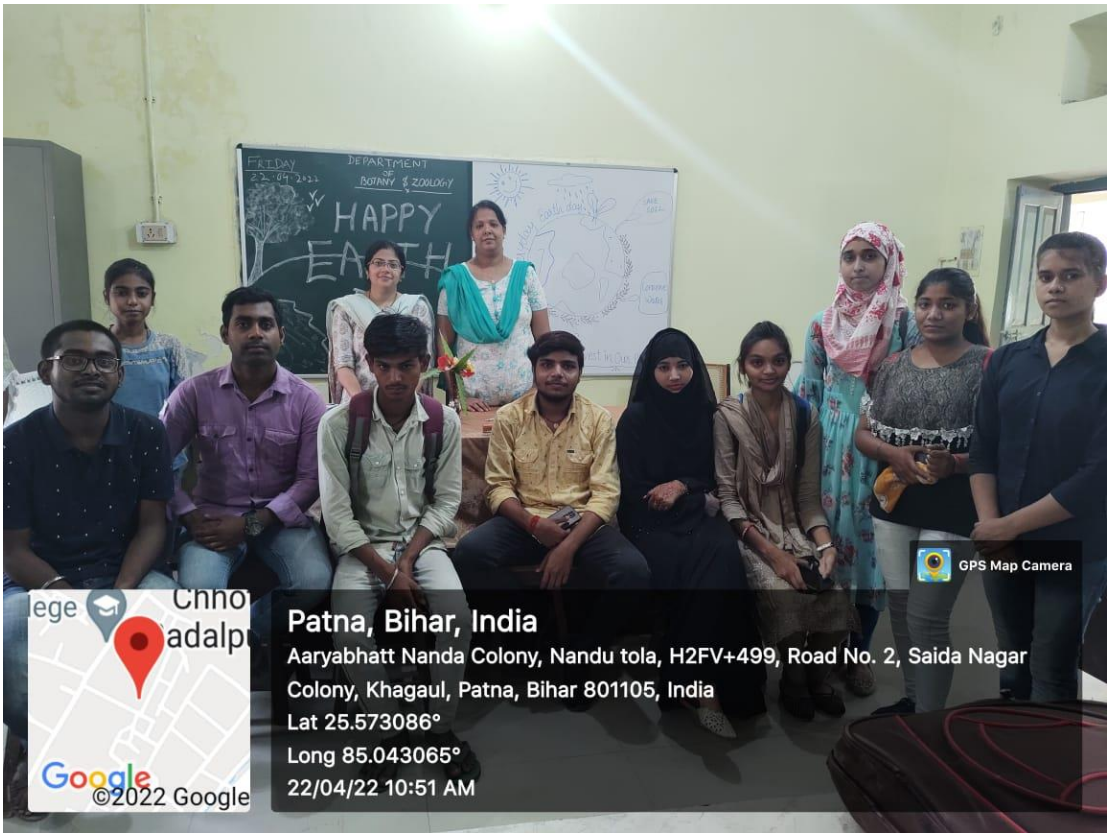
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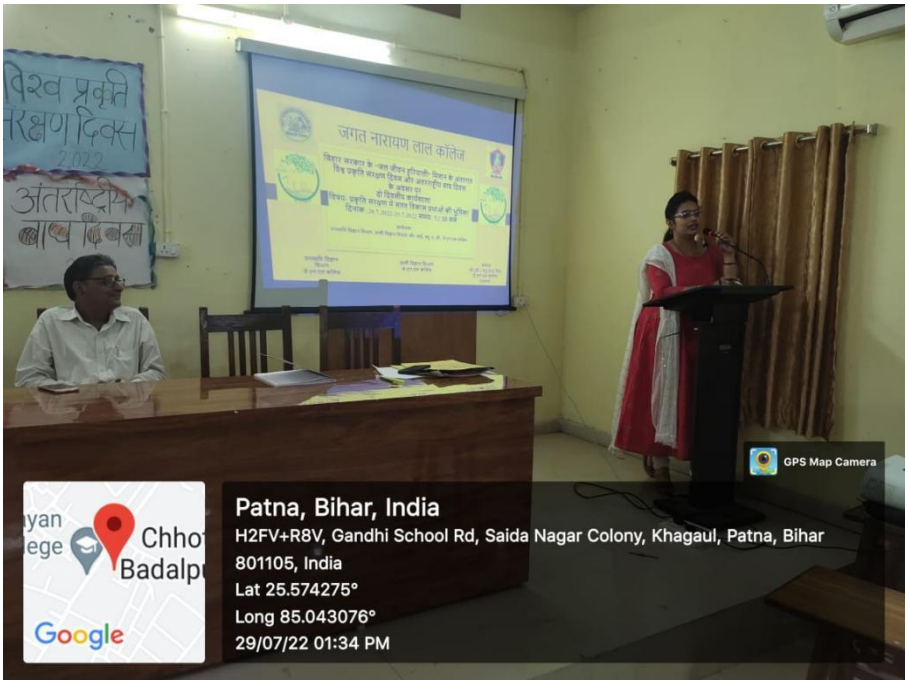
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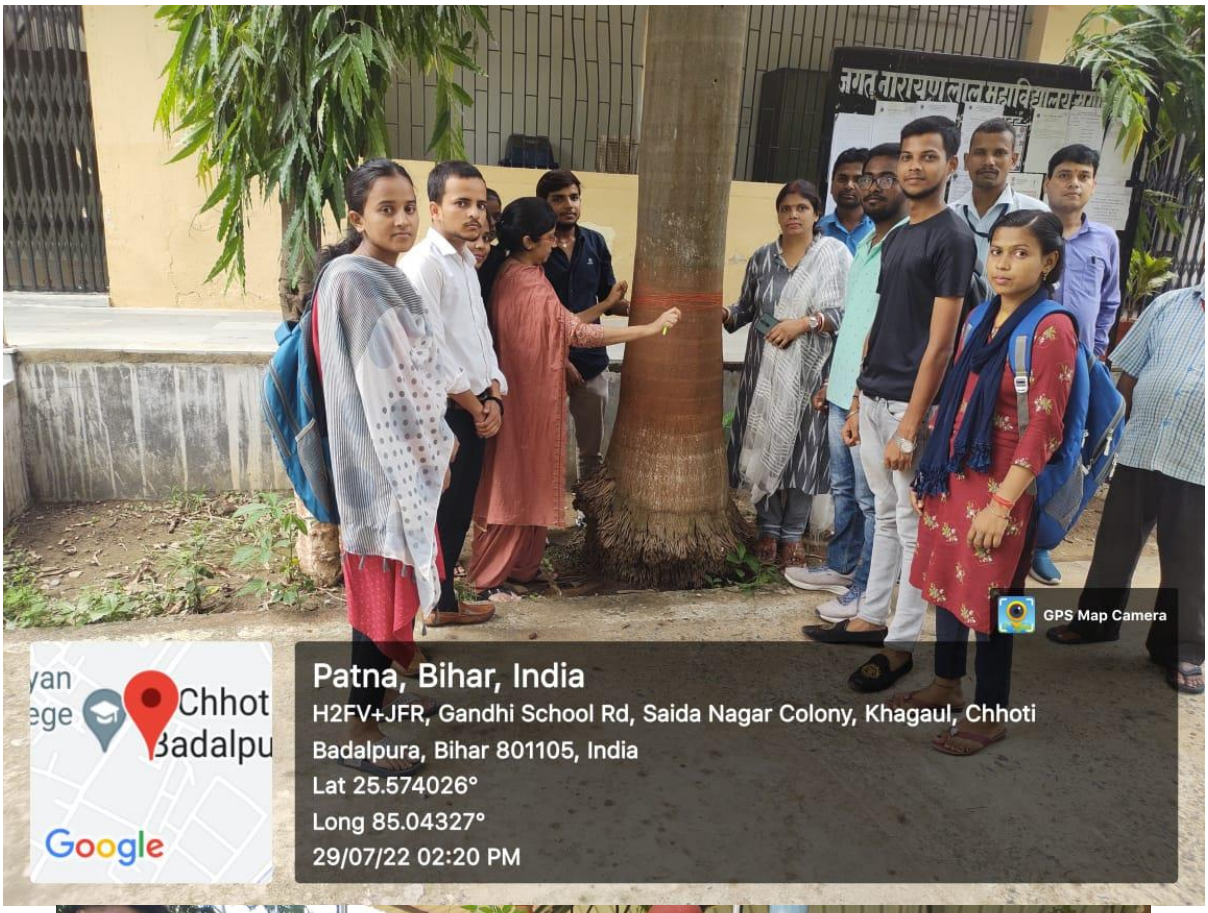
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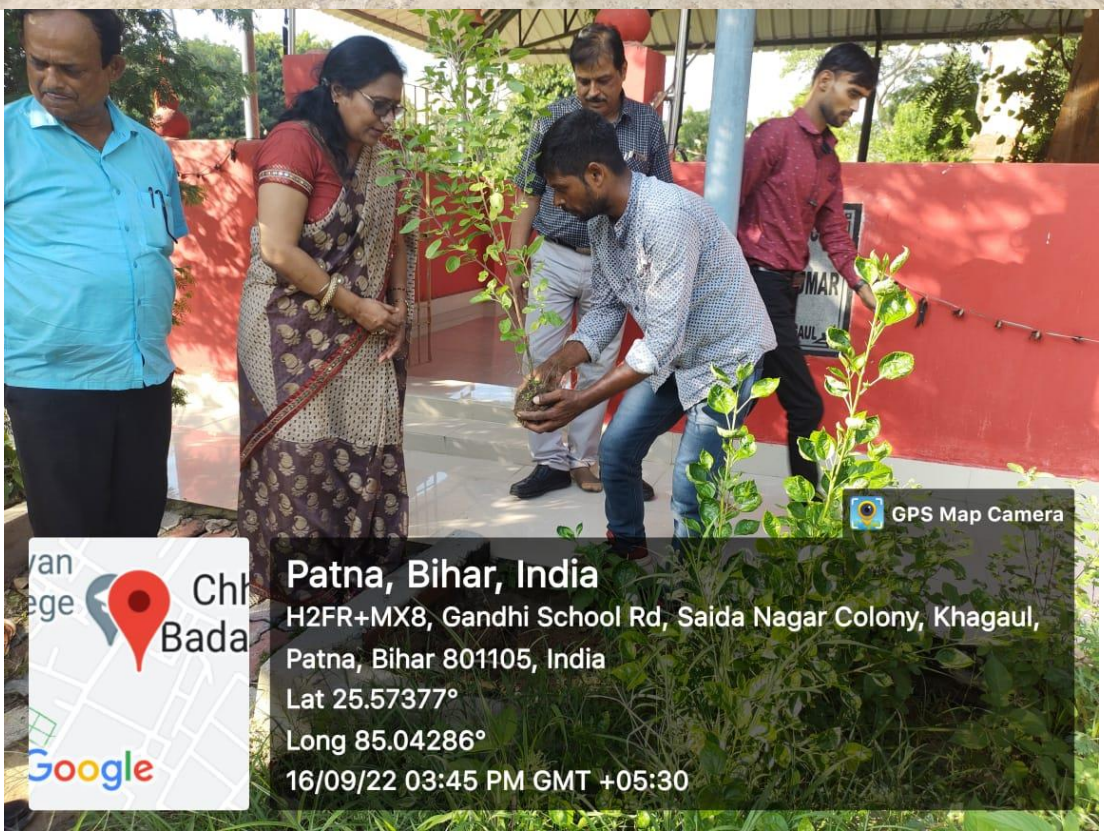
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