



Janata Shikshan Prasarak Mandal's
LOKNETE MARUTRAO GHULE PATIL MAHAVIDYALAYA

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Self Study Report (1st Cycle)



Criteria-VII

Institutional Values and Best Practices

Key Indicator: 7.1

Institutional Values and Social Responsibilities



Submitted to
**NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL
BENGALURU**



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Dahigaon-ne, Tal-Shevgaon, Dist-Ahmednagar

JANATA SHIKSHAN PRASARAK MANDALS'

LOKNETE MARUTRAO GHULE PATIL

MAHAVIDYALAYA,

DAHIGAON-NE, SHEVGAON, AHMEDNAGAR

ENVIRONMENT, ENERGY AND GREEN

AUDIT REPORT

2022-23

JANATA SHIKSHAN PRASARAK MANDALS'



LOKNETE MARUTRAO GHULE PATIL
MAHAVIDYALAYA,

DAHIGAON-NE, SHEVGAON, AHMEDNAGAR

ENVIRONMENTAL GREEN AUDIT REPORT (2022-23)



2022-2023

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ACKNOWLEDGEMENT

with reference to the aforementioned subject would like to thank the whole team of **Loknete Marutrao Ghule Patil Mahavidyalaya, Dahigaon-Ne**, for supporting and supplying us with the necessary data for conducting the Green Analysis. As we sneak into the building performance, we are assured that the building will behave more responsibly towards energy and environment. We would also like to thank entire Environmental Conservation Team of Mahavidyalaya for their continuous support and guidance, without which the completion of the project will not be possible. Last but not the least, we would like to thank to Principal and their allied staff of Loknete Marutrao Ghule Patil Mahavidyalaya for giving us an opportunity to evaluate the environmental performance of the campus.

Thank You,

Periwinkle Enviro Services , Pune

Executive Summary

Green audit is defined as an official examination of the effects a Mahavidyalaya has on the environment. As a part of such practice, internal environmental audit (Green Audit) in Mahavidyalaya conducted to evaluate the actual scenario at the campus. Green audit can be a useful tool for a Mahavidyalaya to determine how and where they are using the most energy or water or resources; the Mahavidyalaya can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. Green auditing and the implementation of mitigation measures is a win-win situation for all the Mahavidyalaya, the learners and the planet. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. Green auditing promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus it is imperative that the Mahavidyalaya evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The baseline data prepared for the **Loknete Marutrao Ghule Patil Mahavidyalaya, Dahigaon (Ne)** will be useful tool for campus greening, resource management, planning of future projects, and a document for implementation of sustainable development of the Mahavidyalaya. Existing data will allow the Mahavidyalaya to compare its programmes and operations with those of peer institutions, identify areas in need of

improvement, and prioritize the implementation of future projects. We expect that the management will be committed to implement the green audit recommendations. We are happy to submit this green audit report to the **Loknete Marutrao Ghule Patil Mahavidyalaya, Dahigaon (Ne)** Ahmednagar

1.0 ABOUT THE ORGANIZATION:

Loknete Marutrao Ghule Patil Mahavidyalaya run by Janata Shikshan Prasarak Mandals' is located at Dahigaon-Ne in Ahmednagar district of Maharashtra. Mahavidyalaya established in 2015. This Mahavidyalaya is affiliated to Savitribai Phule Pune University, Pune. Dahigaon locality is connected by all important roads of the area. Physical facility of communication is available at this place. The Mahavidyalaya is located in close proximity to Shevgaon town and can be easily recognized for its greenery and beauty. The peaceful surroundings make learning possible.

The Mahavidyalaya is offering 3 year duration undergraduate degree programs viz., Bachelor of Science (B.Sc.) with Physics, Chemistry, Botany specializations; Bachelor of Arts (B.A.) with Marathi, Hindi, English, History, Economics specializations and B. Com with Marketing Management & Banking and Finance specializations.

The Mahavidyalaya is also conducting MSCIT course (Maharashtra State Certificate in Information Technology) offered by MKCL (Maharashtra Knowledge Corporation Limited). Our Mahavidyalaya is a recognized ALC (Authorized Learning Centre) of MKCL and there is an overwhelming response for the course from the students.

The Mahavidyalaya has highly experienced and qualified teaching and administrative staff, state-of-the-art laboratories, fully computerized library with a facility for e-books and e-journals,

fully automated office with Campus Management software and computers interconnected with Local Area Network, Biometric finger printing system for recording attendance of the staff, CCTV Camera Surveillance system for improved security, a Diesel Generator set for power backup, spacious playground and well maintained Botanical garden.

The Mahavidyalaya is also running NSS programme and programme in Soft Skill Development for overall development of the students. The Mahavidyalaya has also has an 'Earn and Learn Scheme' to benefit the poor students. It is also providing Post Matric Scholarships offered by the government of India to the SC, OBC, VJNT and SBC caste students, and fee concessions to EBC, Primary & Secondary Teachers' Wards (PTW & STW)

Mission

- ❖ To provide quality higher education to all classes of society.
- ❖ To educate and empower Women.
- ❖ To contribute to nation building by generating a pool and skilled human resources.
- ❖ To promote research culture among the staff and students for the benefit of society.
- ❖ To develop the scientific attitude among the rural student.

Vision

"To Provide affordable educational environment for meeting society's need making educated, skilled and highly potential masses in rural area."

Over the years, it has steadily evolved itself as one of the leading centres of comprehensive learning with its exposure to and linkages with its peers at national and international levels. With its state-of-the-art infrastructure,

well-equipped laboratories, and highly qualified and dedicated faculty, the Mahavidyalaya is committed to the task of harnessing and cultivating the capabilities of young students with a view to enabling them to carve suitable space for themselves in the modern economic world. During the last few years' plan, the introduction of many learning courses keeping in pace with the changing demands of the society and also for human resources development was planned.

There are three faculties on the Mahavidyalaya Campus viz Arts, Commerce and Science. The Mahavidyalaya Building Campus is categorized mainly into 4 sections. The details of all sections are mentioned in the below:

- Academic section
- Administrative Section
- Gymkhana/sport section
- Recreational area

Academic Buildings	
Building / Blocks	AREA (Sq.Ft.)
Principal office	621
Administrative office	567
Department of Physics	1340
Department of Botany	1340
Department of Chemistry	1340
NSS/SWO	299
Student center (Reading Room)	300
Ladies Room	598
Canteen	460
Gymkhana	800
Botanical Garden	4708

Students (Boys Toilet)	680
Students (Girls Toilet)	680

Area distribution



- Principal office
- Administrative office
- Department of Physics
- Department of Botany
- Department of Chemistry
- NSS/SWO
- Student center (Reading Room)
- Ladies Room
- Canteen
- Gymkhana
- Botanical Garden
- Students (Boys Toilet)
- Students (Girls Toilet)

Modernization and industrialization are the two important outputs of the twentieth century that have made human life more luxurious and comfortable. Simultaneously, they are responsible for voracious use of natural resources, exploitation of forests and wildlife, producing massive solid waste, polluting the scarce and sacred water resources, and finally making our mother Earth ugly and inhospitable. Today, people are getting more familiar with global issues like global warming, greenhouse effect, ozone depletion, climate change, etc. Now, it is considered as a final call by mother Earth to walk on the path of sustainable development. The time has come to wake up, unite and combat together for a sustainable environment.

Considering the present environmental problems of pollution and excessive use of natural resources, the Mission of Swachh Bharat Abhiyan , Loknete Marutrao Ghule Patil Mahavidyalaya and Grants Commission has mentioned the “Green Campus, Clean Campus” mission mandatory for all higher educational institutes. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

Green Audit is the most efficient ecological tool to solve such environmental problems. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area. Through this process, the regular environmental activities are monitored within and outside of the concerned sites which have direct and indirect impacts on the surroundings. A green audit can be one of the initiatives for such institutes to account for their energy, water resource use as well as wastewater, solid waste, hazardous waste generation. The green Audit process can play an important role in the promotion of environmental awareness and sensitization about resource use.

It can create consciousness towards ecological values and ethics. Through the green audit, one can get direction about how to improve the condition of the environment.

GREEN POLICY DOCUMENT

Environmental policies are needed because environmental values are usually not considered in organizational decision making. An environmental policy helps set the tone for an organization, facility, or department regarding environmental protection and sustainability, must be clearly articulated from the top, and must permeate all the way throughout a organization, facility, or department's structure.

Objectives:

- Comply with environmental laws and regulations Pursue environmentally-sound projects
- Manage and reduce environmental burden.
- Promote environmental education and communication related to environmental issues

SCOPE

- The policy applies to the Environment Management Committee, and all the stakeholders of the institution.

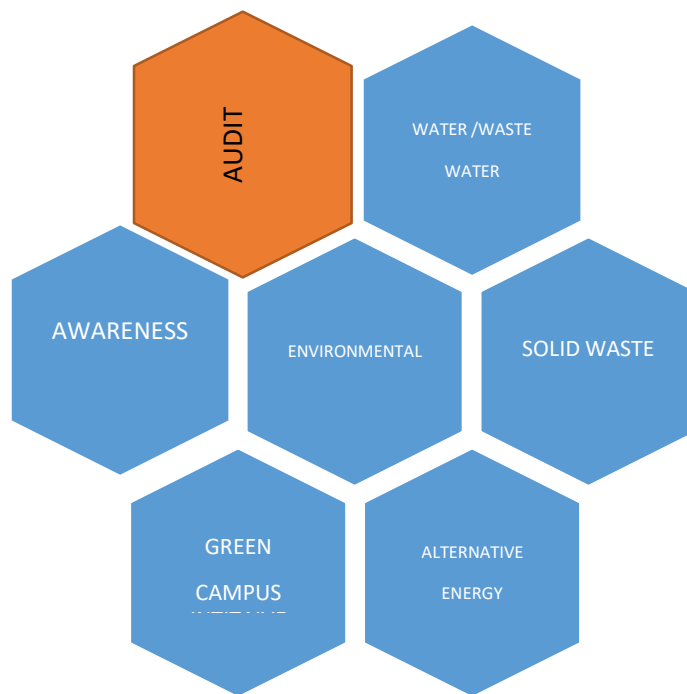
POLICY STATEMENT

- Through implementation of this policy, the Mahavidyalaya will serve as a responsible agency by advancing environmental stewardship within programs and facilities, and in the broader community. Accordingly, the Mahavidyalaya will:

- Continually improve our environmental performance.
- Develop and maintain environmental management programs with objectives and

- targets to minimize adverse environmental impacts.

- Comply with all applicable environmental, health, and safety laws, regulations, and other requirements.
- Implement effective pollution prevention and waste minimization programs to reduce, reuse, and recycle materials.
- Ensure that energy and water are used responsibly and conserved through innovative practices and procedures.
- Provide all institute staff with the knowledge and tools needed to meet the goals of this policy and to actively participate in efforts to prevent negative environmental impacts.
- Measure progress toward our environmental goals.



Coordinator

Seal

Principal

Environmental Conservation and awareness

Sr No.	Name of the Teacher	Designation
1	Dr. Kharat N.P.	President
2	Mr. Veer G.D.	Secretary
3	Mr. Agale G.A.	IQAC Member
4	Mr. Neel B.R.	Member
5	Mr. Thorat V.A.	Member
6	Mrs. Neel Y.R.	Member
7	Mrs. Gadekar S.B.	Member
8	Mr. Ghule D.S.	Member

Committee

3.1 Why Green Audit

Green auditing is the process of identifying and determining whether an institution's practices are eco-friendly and sustainable. Traditionally, we are good and efficient users of natural resources. However, over the period of time excess use of resources like energy, water, chemicals are become habitual for everyone especially, in common areas. Now, it is necessary to check whether our processes are consuming more than the required resources? Whether we are handling waste carefully? Green audit regulates all such 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

them into green and clean ones. The green audit provides an approach for it. It also increases overall consciousness among the people working in institutions towards an environment.

3.2 Goals of Green audit

Mahavidyalaya has conducted a green audit with specific goals as:

- Assess facility of different types of waste management.
- Increase environmental awareness throughout campus.
- Identification and documentation of green practices followed by Mahavidyalaya
- Identify strengths and weaknesses in green practices.
- Conduct a survey to know the ground reality about green practices.
- Analyse and suggest solutions for problems identified from the survey.
- Identify and assess environmental risk.
- The long-term goal of the environmental audit program is to collect baselinedata of environmental parameters and resolve environmental issues.
- To motivate staff for optimized sustainable use of available resources.

Objectives of Green audit

- To examine the current practices which can impact the environment such as resource utilization, waste management, etc.

- To prepare an Environmental Statement Report on green practices followed by different departments, support services, and administration building.
- To set goals, vision, and mission for Green practices on the campus.
- To identify and analyse significant environmental issues.

- To establish and implement Environmental Management Plan in various departments.
- To assess for better performance in green practices and its valuation.

3.3 About Criteria 7 of NAAC

National Assessment and Accreditation Council (NAAC) is a self-governing organization that rated the institutions according to the scores assigned at the time of accreditation of the institution. Green Audit has become a mandatory procedure for educational institutes under Criterion VII of NAAC. The intention of the green audits is to upgrade the environmental condition inside and around the institution. It is performed by considering environmental parameters like water and wastewater accounting, energy conservation, waste management, air, noise monitoring, etc. for making the institution eco-friendlier.

Students are the major strength of any academic institution. Practicing green action in any educational institution will inculcate the good habit of caring for natural resources in students. Many environmental activities like plantation and nurturing saplings and trees, Cleanliness drives, Bird watching camps, no vehicle day, Rainwater harvesting, etc. will make the students good citizens of the country. Through Green Audit, higher educational institutions can ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

3.4 Benefits of Green Audit to an Educational Institute

There are many advantages of green audit to an Educational Institute.

- It would help to protect the environment in and around the campus.
- Recognize the cost-saving methods through waste minimization and energy conservation.

- Empower the organization to frame a better environmental performance.
- It portrays a good image of the institution through its clean and greencampus.
- More efficient resource management
- To create a green campus
- To enable waste management through reduction of waste generation, solid andwaste
- To create plastic-free campus and evolve health consciousnessamong the stakeholder
- Recognize the cost-saving methods through waste minimizing and managing
- Authenticate conformity with the implemented laws
- Empower the organizations to frame a better environmental performance
- Enhance the alertness for environmental guidelines and duties
- Impart environmental education through systematic environmentalmanagement approach and Improving environmental standards
- Benchmarking for environmental protection initiatives
- Financial savings through a reduction in resource use
- Development of ownership, personal and social responsibility for theMahavidyalaya and its environment
- Developing an environmental ethic and value systems in youngsters.
- Green auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programs of the Mahavidyalaya.
- Finally, it will help to build a positive impression through green initiatives.

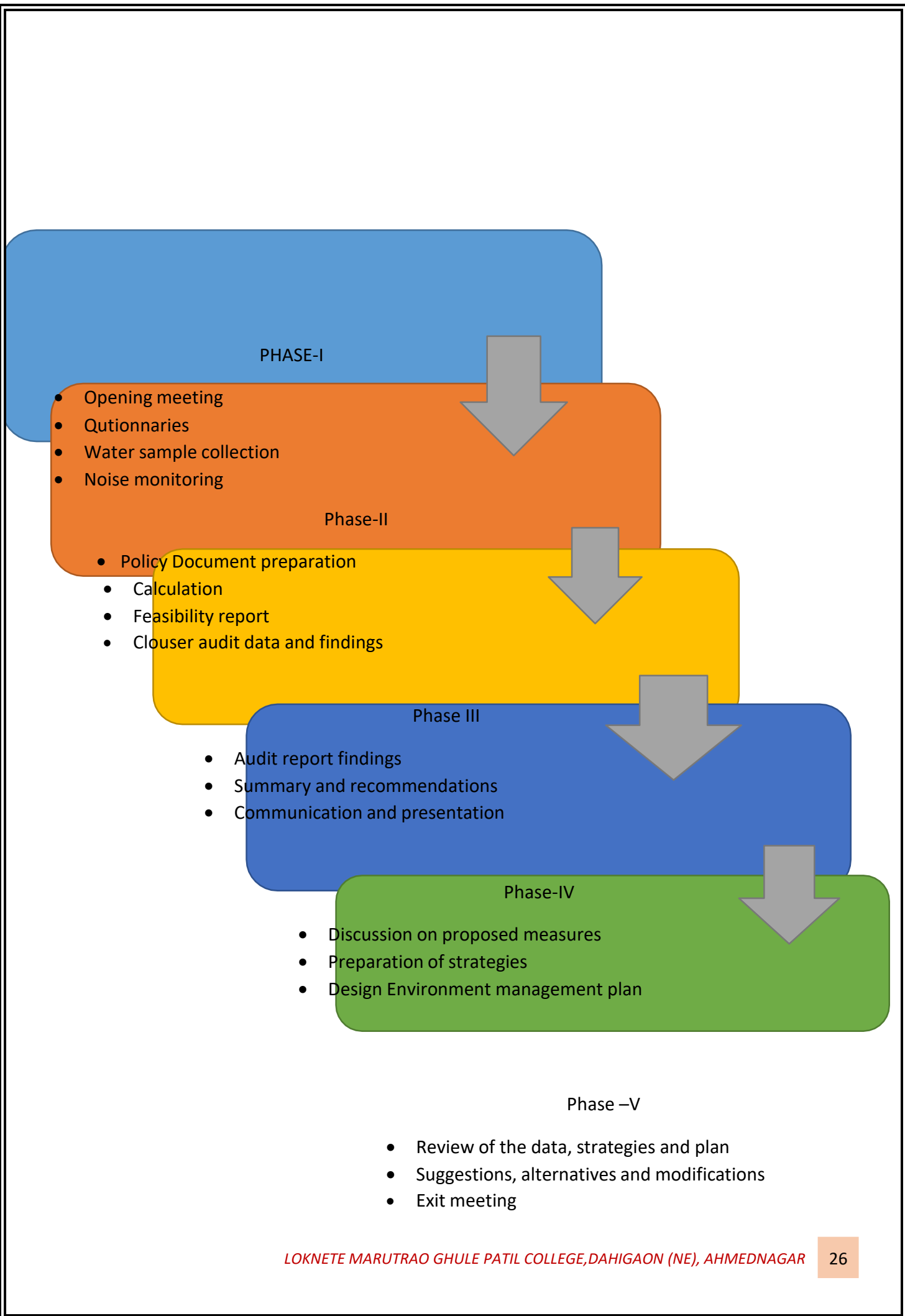
MAHAVIDYALAYA CAMPUS: The total area of the Mahavidyalaya is 6.27 sq.ft and it is used for academic purpose only viz. administrative area, learning area , open and indoor recreational area, botanical garden and play ground 65000sq.ft.



Aerial View of Mahavidyalaya Campus

The campus has a very vast and beautiful Botanical Garden. There is a Botanical garden in about 4708 sq.Ft of land within the Mahavidyalaya campus. Developmental work of the garden was started in 2017- and completed in 2022. The Botanical garden is now becoming a point of attraction for the inhabitants of the campus

About 689 different plant species (like Medicinal plants, Palm, Economically Important plants, Fruit, Ferns, Orchid, xerophytes, and other species) are available in the garden. The maintenance of the garden is done by the Botany Department in collaboration with the Mahavidyalaya Property Cell of the Mahavidyalaya under the guidance of the Campus Committee.



4.0 GREEN AUDIT

4.1 Pre Audit Stage

A pre-audit meeting provided an opportunity to reinforce the scope and objectives of the audit and pre-audit discussions were held on the basis of green initiatives taken and the current scenario of the Loknete Marutrao Ghule Patil Mahavidyalaya campus. This meeting is an important prerequisite for the green audit because it is the first opportunity to understand the concerns. It was held with the concerned person of the Mahavidyalaya regarding initiatives taken by the Loknete Marutrao Ghule Patil Mahavidyalaya and regarding the last NAAC Green Audit conducted by the Mahavidyalaya. The meeting was an opportunity to gather the information that the audit team can study before arriving on the site. The audit protocol and audit plan were handed over at this meeting and discussed in advance of the audit itself. The pre-audit meeting was conducted successfully and necessary documents were collected directly from the Loknete Marutrao Ghule Patil Mahavidyalaya before the initiation of the audit processes. The actual planning of audit processes was discussed in the pre-audit meeting. An Audit team was also selected in this meeting with the help of staff and the Loknete Marutrao Ghule Patil Mahavidyalaya management. The audit protocol and audit plan were handed over at this meeting and discussed in advance of the audit itself.

4.2 Management Commitment

The Management of the Loknete Marutrao Ghule Patil Mahavidyalaya has shown a commitment towards green auditing during the pre-audit meeting. They were ready to encourage all green activities. It was decided to promote all activities that are environmentally friendly such as awareness programs on the environment, campus farming, planting more trees on the campus, etc., after the green auditing. The management of the Loknete Marutrao Ghule Patil Mahavidyalaya was willing to formulate policies based on a green auditing report.

4.3 Objectives

- ✚ Environmental education through a systematic environmental management approach.
- ✚ Improving environmental standards.
- ✚ Benchmarking for environmental protection initiatives. Efficient
- ✚ utilization of resources.
- ✚ Financial savings through a reduction in resource use. Curriculum
- ✚ enrichment through practical experience.
- ✚ Development of ownership, personal and social responsibility for the Loknete Marutrao Ghule Patil Mahavidyalaya and its environment.
- ✚ Developing environmental ethics and value systems in young people. Providing certain
- ✚ recommendations based on environmental audit reports.

4.4 Methodology

The Management of the Loknete Marutrao Ghule Patil Mahavidyalaya has shown a commitment towards green auditing during the pre-audit meeting. They were ready to encourage all green activities. It was decided to promote all activities that are environmentally friendly such as awareness programs on the environment, campus farming, planting more trees on the campus, etc., after the green auditing. The management of the Loknete Marutrao Ghule Patil Mahavidyalaya was willing to formulate policies based on a green auditing report. In order to perform green audits, the methodology included different tools such as preparation of questionnaires, 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 environmental management on the campus:

- ❖ Energy Management
- ❖ Waste Management
- ❖ Environment Management


4.5 Survey by Questionnaire


Baseline data for green audit report preparation was collected by questionnaire survey method. Questionnaires are prepared to conduct the green audit in the Mahavidyalaya Campus. Most of the guidelines and formats are based on broad aspects of campus. Therefore, using guidelines and formats, combinations, modifications, and restructuring were done and sets of questionnaires were prepared for solid waste, energy, water, and hazardous waste.

4.6 QUESTIONNAIRE

Which of the following are available in your Mahavidyalaya?

- 1) Garden area –Yes
- 2) Play Ground - Yes
- 3) Kitchen - No
- 4) Toilets (number) -11
- 5) Garbage dumping area-3
- 6) Laboratory - Yes
- 7) Canteen - Yes
- 8) Other (specify)

 Is there a garden in your Mahavidyalaya? Yes.

 Do students spend time in the garden? Yes

 List the plants with approx. numbers of each species.

- ✚ Give the List of plants in campus with Scientific Name and Family. List the species
- ✚ planted by the students, with numbers

WASTE

✚ Does your Mahavidyalaya generate any waste?

- If so, what are they?

If so, what are they?

- Garden waste,
- Papers,
- Plastic,
- Computer accessories,
- Batteries,
- Drums,

5.1 Energy Management:

1. List ways that you use energy in your Mahavidyalaya. (Electricity, electric stove, kettle, microwave, LPG, firewood, Petrol, diesel and others).

2. Are there any energy saving methods employed in your Mahavidyalaya? No.

3. How many CFL bulbs has your Mahavidyalaya installed? Mention use (Hours used/day for how many days in a month)

4. Energy used by each bulb per month? (for example- 60 watt bulb x 4 hours x number of bulbs = 3150kwh).

5. How many LED bulbs are used in your Mahavidyalaya? Mention the use (05 hr/day 26 days in a month)

6. Energy used by each bulb per month? (1350kwh).

9. How many fans are installed in your Mahavidyalaya? 80. Mention use (05hr /day 26 days in a month)

10. Energy used by each fan per month? (33000kwh)

11. How many air conditioners are installed in your Mahavidyalaya? 01 Mention use (02Hours /day, 4 days in a month)

12. Energy used by each air conditioner per month? (60000kwh).

13. How many electrical equipment including weighing balance are installed yourMahavidyalaya?

06. Mention the use (30 Min /day 20 days in a month)

14. Energy used by each electrical equipment per month? (153000kwh).

15. How many computers are there in your Mahavidyalaya? 43. Mention the use (05Hours /day 26 days in a month)
16. Energy used by each computer per month? (33000kwh)

17. How many cooling apparatuses are in installed in your Mahavidyalaya? 03. Mention use (10 Hours /day 26 days in a month)
18. Energy used by each cooling apparatus per month? (66000kwh) Mention use(10Hours /day 26 days in a month)
19. Energy used by each inverter per month? (kwh)

20. How many electrical equipment are used in different labs of your Mahavidyalaya?Mention the use (Hours used/day for how many days)
21. Energy used by each equipment per month? (kwh)

24. No of street lights in your Mahavidyalaya? 0

25. Energy used by each street light per month? (kwh)

26. No of TV in your Mahavidyalaya and hostels? 0

27. Energy used by each TV per month? (0kwh)

28. Any other item that uses energy (Please write the energy used per month)Mention the use (Hours used/day for how many days in a month)
29. Are any alternative energy sources/nonconventional energy sources employed / installed in your Mahavidyalaya? (photovoltaic cells for solar energy, windmill, energyefficient stoves, etc.,) Specify.
30. Do you run "switch off" drills at Mahavidyalaya? If yes then specify

31. Are your computers and other equipment put on power-saving mode?

32. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby mode most of the time? Yes, 08 hours?

33. What are the energy conservation methods adapted by your Mahavidyalaya? By using Sensor bulbs.

39. How many boards displayed for saving energy awareness? 0

40. Write a note on the methods/practices/adaptations by which you can reduce the energy use in your Mahavidyalaya campus in future.

5.2 WATER CONSERVATION

1) List four uses of water in your Mahavidyalaya (in Litre)

1) Drinking - 3200 Lit/Day

2) Toilets - 12000 Lit/Day

3) Gardening -

2) How does your Mahavidyalaya store water? Is there any water saving techniques followed in your Mahavidyalaya? Yes /No What are they?

3) If there is water wastage, specify why.

Drinking Water Tank- Uses of above Water for Drinking & Used of their waste water for Botanical Garden. How can the wastage be prevented / stopped?

4) Locate the point of entry of water and point of exit of waste water in your Mahavidyalaya.

Where does your water come from? (source) Water comes from Bore -well(Quantity-2) & Maharashtra Shasan Pani Purvatha Yojana

Where does the waste water go? Botanical Garden

5) Write down four ways that could reduce the amount of water used in your Institute.

1) Record water use from the Mahavidyalaya water meter for six months (record at the

same time of each day). At the end of the period, compile a table to show how manyliters of water have been used.

Does your Institution harvest rain water? Yes 01 Unit.

5.3 Auditing for Water Management

1. List uses of water in your Mahavidyalaya. Drinking, Toilet, Botanical Garden as well ascampus Trees.
2. No. of motors used for pumping water from each well? One Water PumpingMotors in each Boar-well.
3. What is the total horse power of each motor 5HP.
4. How does your Mahavidyalaya store water? 4 Water tanks on different place.
5. Quantity of water stored in your overhead water tank? (in litres) 50,000 lit.
6. Quantity of water pumped every day? (in litres) 20,000.
7. What are the uses of waste water in your Mahavidyalaya? Botanical Garden.
8. What happens to the water used in your labs?
9. Whether it gets mixed with ground water?
10. Is there any treatment for the lab water? If yes give the name of treatment.No.
11. Whether green chemistry methods are practiced in your labs? No.

12. Record water use from the Mahavidyalaya water meter for six months.

3,60,000

13. No. of water coolers. Amount of water used per day? (in litres)

14. No. of water taps. Amount of water used per day?

15. No. of bath rooms in staff rooms, common, hostels, amount of water used per day? 0

1. No. of water taps in laboratories. Amount of water used per day in each lab? 20 Water taps in Laboratories. 30 Lit.

2. Is there any water used for agricultural purposes? No.

3. How many of the taps are leaky? Amount of water lost per day? 05 taps are leak and 35 Lit. water lost per day.

19 Are there signs reminding people to turn off the water Yes / No 37.

20 Is there any waterless toilets? _____ No.

21 Is drip irrigation used to water plants outside? YES

22. How often is the garden watered?

23 Quantity of water used to watering the ground? 500Lit.

24 Quantity of water used for cleaning? (litres per day) Area of the Mahavidyalaya land without tree/building canopy 500 Lit.

25 Is there any water management plan in the Mahavidyalaya? No.

26 Are there any water saving techniques followed in your Mahavidyalaya? What are they? No.

27 Please share Some IDEA for how your Mahavidyalaya could save more water?

5.4. On-site visit and observations

After the collection of secondary data, the reviews related to each environmental factor were taken by the green audit team. The data were tabulated, analysed and graphs were prepared. Depending upon the observations and data collected, interpretations were made. The lacunas and good practices were documented. The Environmental Management Plan (EMP) was prepared for the next academic year in order to have better environmental sensitization. Finally, all the information was compiled in the form of the Green Audit Report.

5.5 WATER & WASTE WATER AUDIT

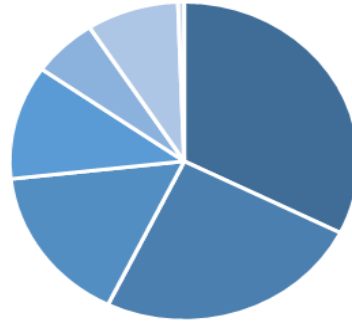
Water is a precious natural national resource available with a fixed quantum. The availability of water is decreasing due to the increasing population of the nation; as per capita availability of utilized water is going down. Due to the ever-rising standard of living of people, industrialization, urbanization, demand for freshwater is increasing day by day. The unabated discharge of industrial effluent in the available water bodies is reducing the quality of these ample sources of water continuously.

Water audit can be defined as a qualitative and quantitative analysis of water consumption to identify means of reducing, reusing, and recycling water. Water Audit is nothing but an effective measure for minimizing losses, optimizing various uses, and thus enabling considerable conservation of water in the irrigation sector, domestic, power, and industrial sectors. A water audit is a technique or method which makes it possible to identify ways of conserving water by determining any inefficiency in the system of water distribution. The measurement of water losses due to different uses in the system or any utility is essential to implement water conservation measures in such an establishment.

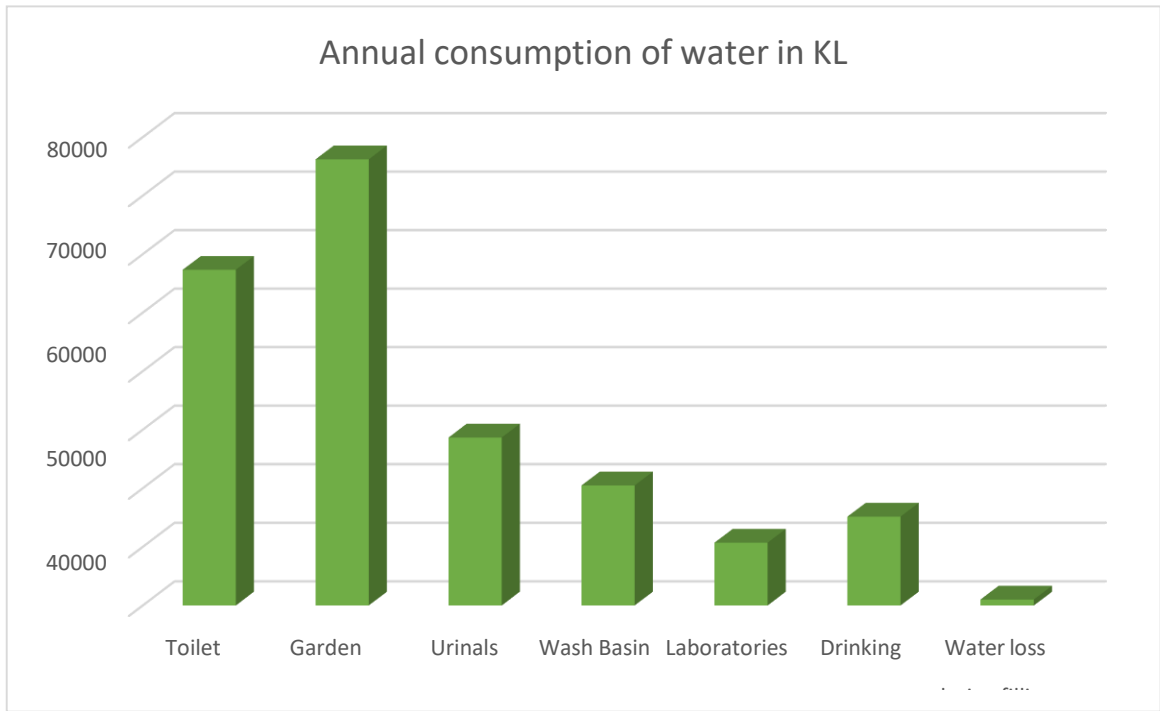
5.6 Water Consumption:

Sr. No.	Sector	Total Daily Use (liter)	Total Monthlyuse (lit)	Total yearly use(kl)
2	Toilet (14lit* 210d)	9100	273000	57330
3	Garden (10lit/plant*52)	6960	208800	76212
4	Urinals (6.92lit)	4500	136500	28665
5	Wash Basin (5lit)	3250	97500	20475
6	Laboratories (10lit)	1700	51000	10710
8	Drinking (3.7lit)	2405	72150	15151
9	Water loss during filling	160	4800	1008
Total		28075	843750	209551

Daily Use (liter)



- Toilet (14lit* 210d)
- Garden (10lit/plant*52)
- Urinals (6.92lit)
- Wash Basin (5lit)
- Laboratories (10lit)
- Drinking (3.7lit)
- Water loss during filling



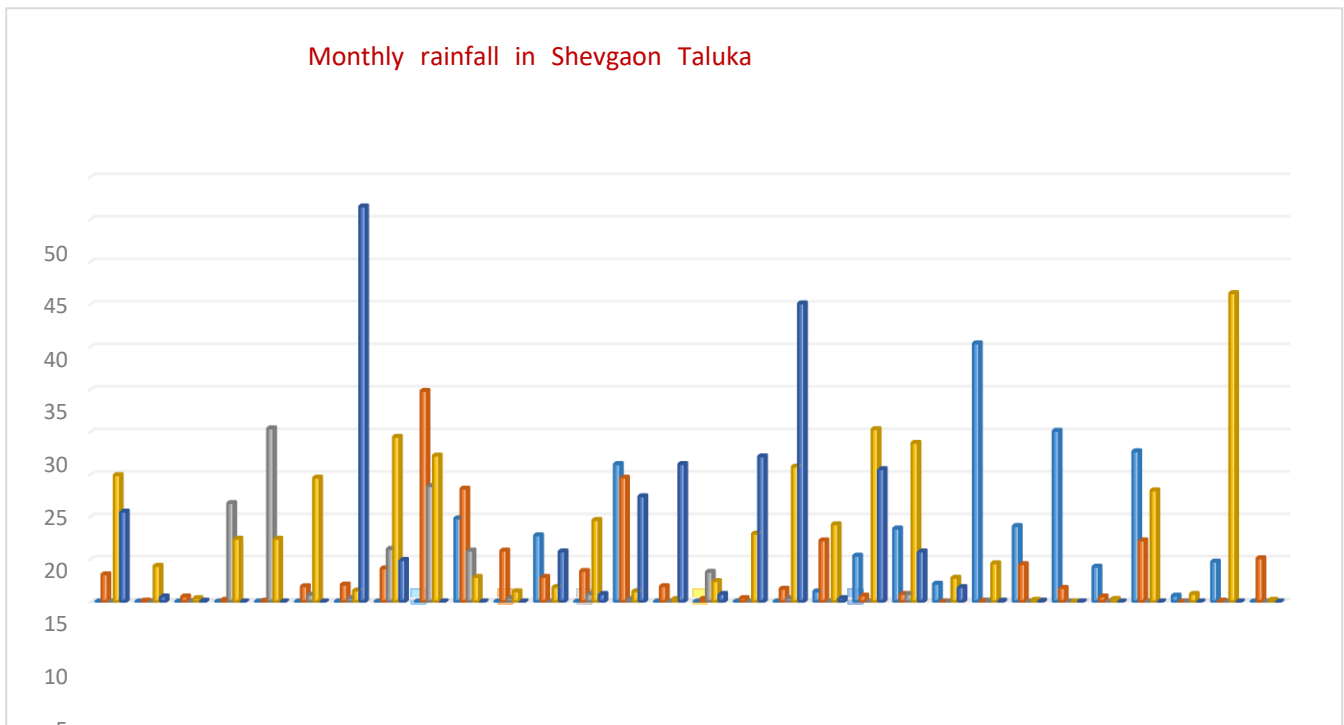
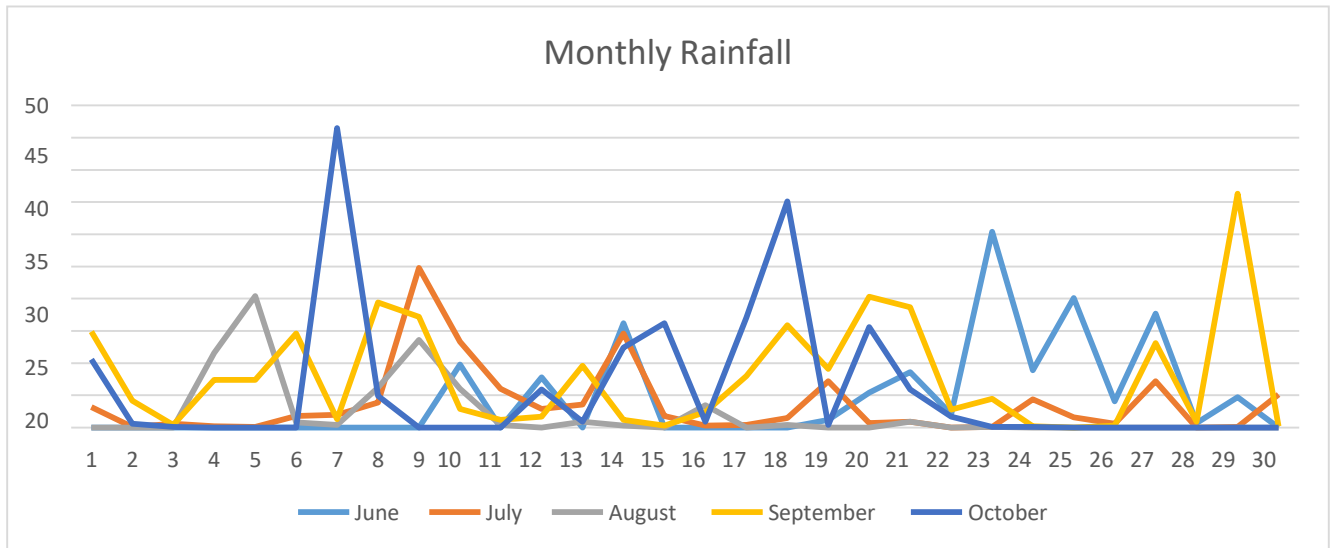
6.0 Rain Water Harvesting

The underground water table is decreasing day by day & minute by minute. The reason is that no attempt is made to replenish the groundwater table with rainwater during the monsoon & other rainy days. Rainwater harvesting is the simple collection or storing of water through scientific techniques from the areas where the rain falls. It involves the utilization of rainwater for domestic or agricultural purposes. The method of rainwater harvesting has been in practice since ancient times. It is as far the best possible way to conserve water and awaken society towards the importance of water. The method is simple and cost-effective too. It is especially beneficial in the areas, which face a scarcity of water. We can see that the People usually make complaints about the lack of water. During the monsoons, lots of water goes waste into the gutters. And this is when Rain Water Harvesting proves to be the most effective way to conserve water.

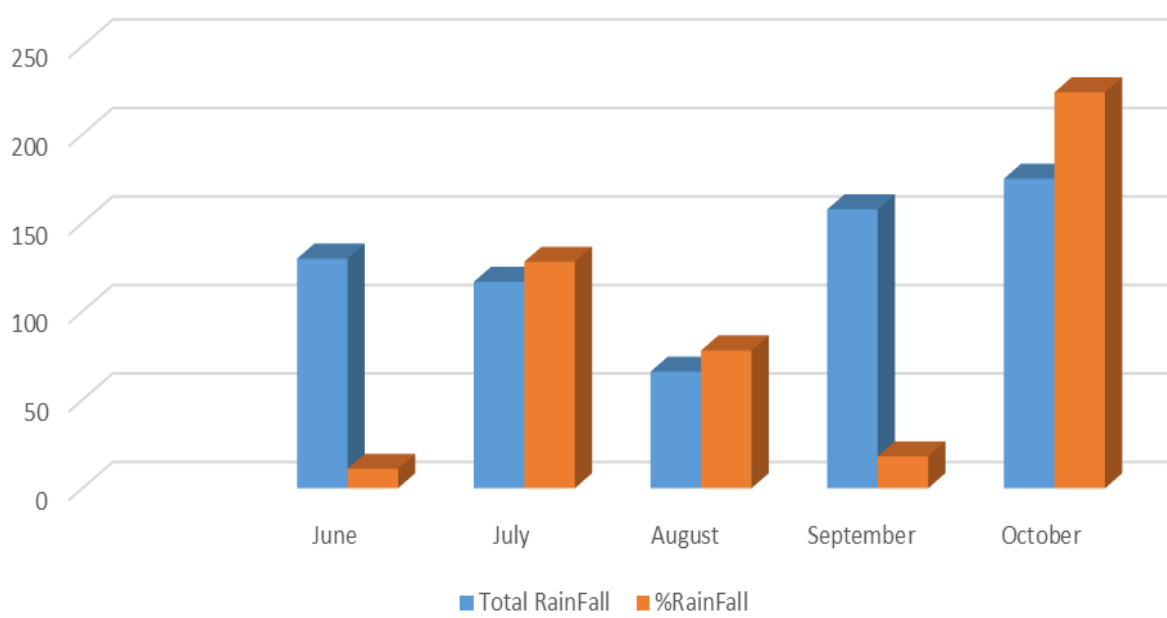
It is as far the best possible way to conserve water and awaken society towards the importance of water. The method is simple and cost-effective too. It is especially beneficial in the areas, which face a scarcity of water.

We can collect the rainwater into the tanks and prevent it from flowing into drains and being wasted. It is practiced on a large scale in metropolitan cities. Rainwater harvesting comprises the storage of water and water recharging through the technical process. Currently, five numbers of rainwater

harvesting exist on the campus further the Mahavidyalaya is planning to extend and install several units under rainwater harvesting mission including rooftop RWH installation at different buildings for the coming year which will be spread into the mass-scale which covers several units. These units will be utilized for further storing and reusing of natural water.



Monthly variation in Rain fall



Roof top Rain water Collection through PVC pipes



Rainwater collecting duct



Rain water discharged in GW Borewell duct

Policy for Water Conservation Program:

- Non-teaching staff or peons in the concerned section should take responsibility for monitoring the overflow of water tanks.
- A Large amount of water is wasted during the practical process in Science laboratories.

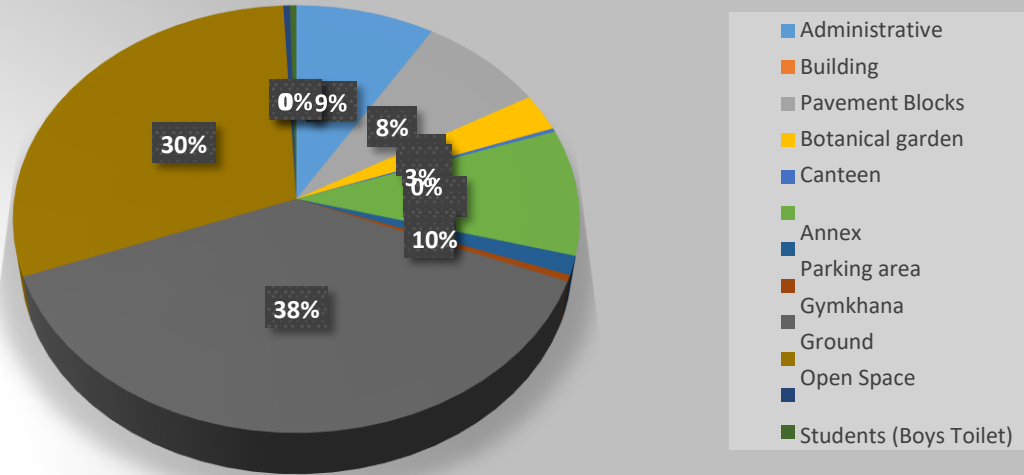
Designs of small water recycling systems help to reuse of water.

- Reduce chemical waste formation in the Chemistry laboratory; adopt the principles of green chemistry to reduce chemical waste.
- Pipes, overhead tanks, and plumbing systems should be maintained properly to reduce leakages and wastages of water.
- Mahavidyalaya should install its own Sewage Treatment Plant (STP). By doing so there will be a great reduction in water usage, as the water after treatment can be used for various purposes in the Mahavidyalaya.
- As Mahavidyalaya is already planning to set up multiple units of Rain Water Harvesting Units. To set up and install will certainly add value in order to meet the mission of water conservation

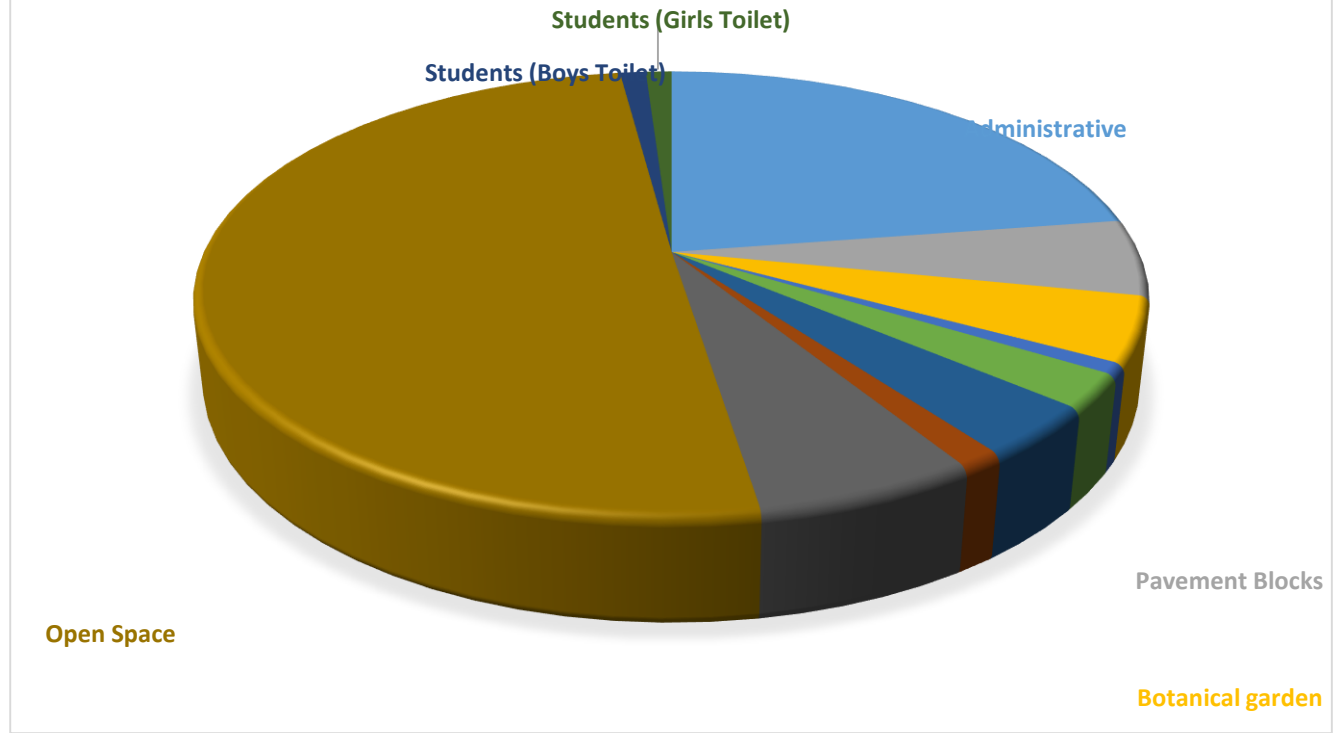
7.0 Potential estimation of Rain Water Harvesting

Sr. No.	Structure name	Area in Sq Ft	Potential water harvesting in liters	Annual water harvesting in M ³
1	Administrative Building	14600	7446000	7446
2.	Pavement Blocks	13312	1834300	1834
3.	Botanical garden	4708	1553640	1554
4.	Canteen	460	254150	254
5.	Annex	16000	816000	816
6	Parking area	2400	1224000	1224
7.	Gymkhana	800	408000	408
8.	Ground	64000	2112000	2112
9.	Open Space	50331	16609230	16609
10	Students (Boys Toilet)	680	346000	34600
11	Students (Girls Toilet)	680	346000	34600
	Total	167971	101457000	101457

Area Distribution of College Campus



POTENTIAL OF RAIN WATER HARVESTING



Total No. Of Students in The Premises –650 Approx.Total No. of

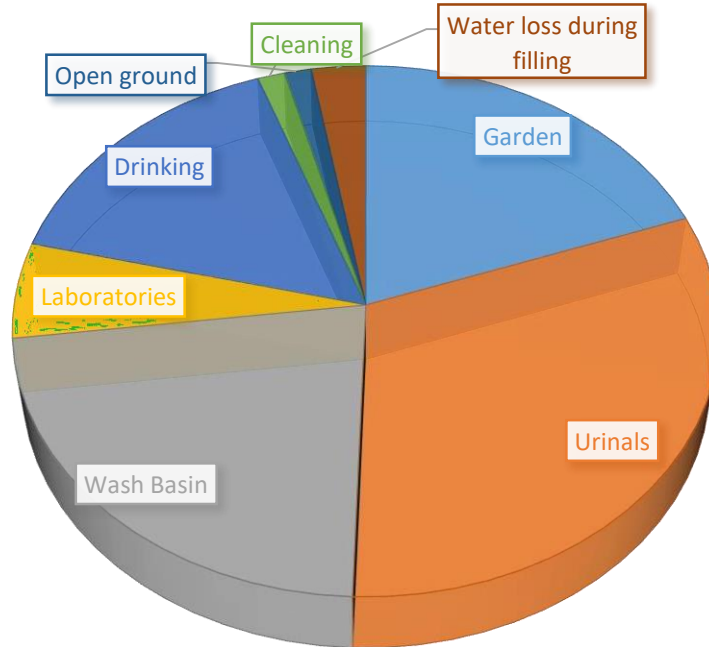
Teaching staff- 26

Total No. Of Supporting staff-14No. of

working days - 240

Specification	Water Consumption in litres /individuals/year
Toilet	1159200
Garden	717600
Urinals	1145952
Wash Basin	828000
Laboratories	215000
Drinking	579600
Cleaning	50000
Open ground	50000
Water loss during filling	100800
Total	3686952

WATER CONSUMPTION



Potential of the premises is = Total annual rainfall available in the seasons is approximately 600 mm

So ,

RWH (lit)=Potential water availability- Water utilization

101457000-3686952

=97770048 i.e. 97770 m³

Availability of rain water for conservation the Mahavidyalaya premises is 97770m³

Means **Nine crore seventy-seven lakh seventy thousand litres** of fresh water approximately available which will made campus self-sufficient in their water requirement

8.0 ENERGY POLICY DOCUMENT

We are committed to buying and using energy in the most cost-effective, efficient and environmentally responsible way possible.

- ✚ Making efficient use of energy, minimising waste and using “Green” energy where possible
- ✚ Reducing our carbon footprint in line with annual targets
- ✚ Continually improve our energy performance by reducing our energy use on an annual basis
- ✚ Where possible prevent pollution of the environment from our activities and/or reduce the impact and amount of any pollution caused by our activities
- ✚ Provide information as appropriate to those requesting it in relation to the business’ energy performance, to include regular updates to staff regarding our energy use.
- ✚ Carry out a periodic review of this system at least once per year
- ✚ Work to continually improve our Energy Management System through the Plan, Do, Check Act process
- ✚ Provide appropriate training

To achieve this, we will:

Improve energy efficiency continuously by implementing effective energy management programs that support all operations and customer satisfaction while providing a safe and comfortable work environment.

- Set specific, measurable, achievable, realistic and time bound objectives to continually improve our environmental performance in the areas above
- Set an action plan and provide sufficient resource to achieve these objectives
- Monitor our progress against these objectives and periodically review our progress
- adjusting our plan and resources as appropriate to ensure our objectives are met



COORDINATOR
Co-Ordinator
IQAC

L.M.C.B.M. Dahigaon-Ne,

Dist. S.

SEAL




PRINCIPAL

IC Principal

**Loknete Marutrao Ghule Patil Mahavidyalaya
Dahigaon-Ne, Tal. Shevgaon, Dist. Ahmednagar**

8.1 ENERGY AUDIT

Energy is one of the major inputs for the economic development of any country. The fundamental goal of energy management is to produce goods and provide services with the least cost and least environmental effect. Also, it can be said as “the strategy of adjusting and optimizing energy, using system and procedure so as to reduce energy requirements per unit of output while holding constant or reducing total costs producing the output from these systems”. The energy audit is key to a systematic approach for decision-making in the area of energy management. It attempts to balance the total energy inputs with its use and serves to identify all the energy streams in a facility.

8.2 Energy Audit Objectives

8.3 Primary

- The first objective is to acquire and analyze data and find the necessary consumption pattern of these facilities.
- The second objective will be to calculate the wastage pattern based on the results of the first objective.
- The final objective is to find and implement solutions that are acceptable and feasible.

8.4 Secondary

- This would be our first exposure to this field hence experience gain would be vital.
- This project will precede many follow up projects and hence helps to gain technical and management exposure required for future energy projects.
- It is sure to help create a repertoire of vital contacts hence will develop

interaction with alumni, faculty and students.

8.5 Source of Energy

Loknete Marutrao Ghule Patil Mahavidyalaya, Dahegaon, Ahmednagar withdraws Energy from Followings:

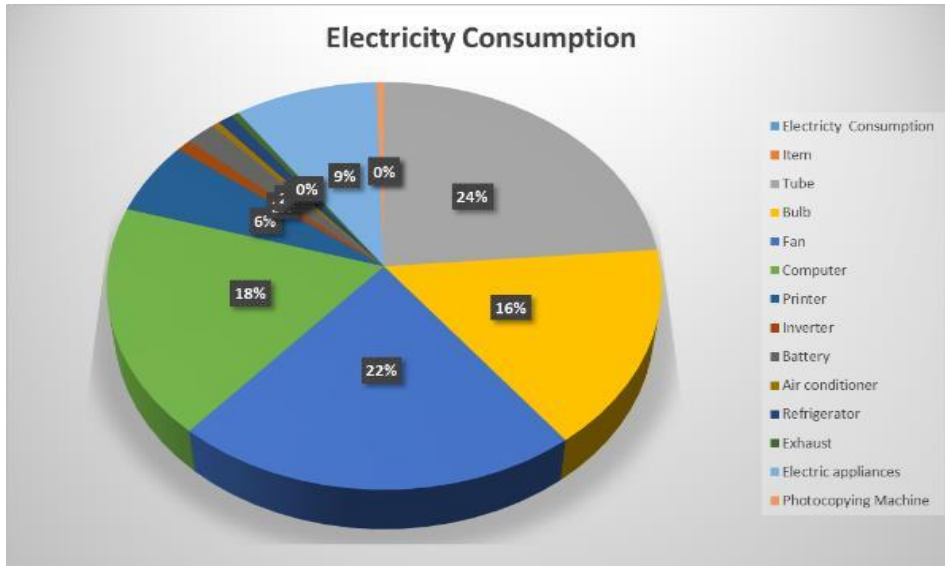
- Electricity from MESCOM
- Solar Energy

Calculation of energy for electrical appliances: -

Electricity Consumption	
Item	Numbers
Tube	49
Bulb	33
Fan	45
Computer	38
Printer	12
Inverter	2
Battery	4

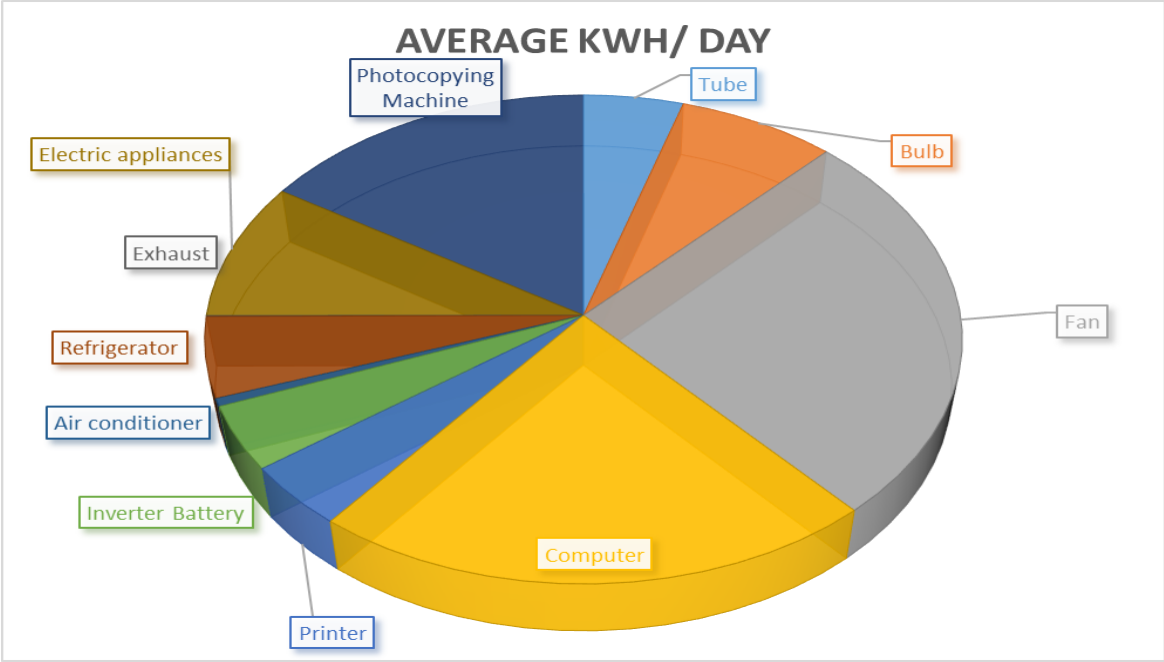
Air conditioner	1
Refrigerator	2
Exhaust	1

Electric appliances	19
Photocopying Machine	1



Item	Number of Appliances	Power Used in (Watt)	Usage per day (hours)	Average kWh per Day=(Watt X Hours X Number X 1000	Average kWh per year(240D)=(Watt X Hours X Number X 1000X240
Tube	49	36	5Hrs	8820	2116800
Bulb	70	40	5Hrs	14000	3360000
Fan	45	220	5Hrs	49500	11880000
Computer	38	220	5Hrs	41800	10032000
Printer	12	220	3Hrs	7920	1900800
Inverter Battery	4	5KvA	5Hrs	8000	1920000
Air conditioner	1	1000	1 Hrs	1000	240000

Refrigerator	2	2KVA	5Hrs	10000	3650000
Exhaust	1	50	2Hrs	100	31200
Electric appliances	19	300	3Hrs	17100	1404000
Photocopying Machine	1	15000	2Hrs	30000	2400,000



9.0 ENVIRONMENT POLICY DOCUMENT



Both the teaching and Non-teaching staff of Loknete Marutrao Ghule Patil Mahavidyalaya, committed for carrying out its activity for sustainable development. We believe that greening the campus is all about sweeping away wasteful inefficiencies and using conventional sources of energies for its daily power needs, correct disposal handling, purchase of environment friendly supplies and effective recycling program. The administration of the Institute believes that everyone has to work out the time bound strategies to implement green campus initiatives. These strategies need to be incorporated into the institutional planning and budgeting processes with the aim of developing a clean and green campus. Every individual of Loknete Marutrao Ghule Patil Campus will work, may he/she be a student, faculty and support staff to foster a culture of self-sustainability and make the entire campus environmental friendly. The Green Campus Initiatives will enable the institution to develop the campus as a living laboratory for innovation

This we will achieve through the following:-

- ❖ To sensitize the students and staff regarding the use of water properly
- ❖ To bring in use the 'Rain Water Harvesting' on the campus.
- ❖ To maximize the use of ICT and minimize the use of paper. It will help to go towards 'Paperless Office'.
- ❖ To use the solid waste through vermin-compost on the campus and use it as a fertilizer.
- ❖ To reduce the 'sound pollution in the campus.
- ❖ To protect and nurture the Flora and Fauna on the campus
- ❖ To maintain green campus.

- ❖ Seek views of all the Stakeholders to make the Go Green Campus initiative functional throughout the year.
- ❖ Conduct the Campus' environmental impacts to identify the targets for improvements.
- ❖ Establish a Green Campus Environmental Ethic Awareness campaigns.
- ❖ Set forth a Green Campus Mission and a Statement of Principle
- ❖ Link Green-Campus activities to Academics in the Institute.
- ❖ Organize Awareness Programs for the students, faculty and society.
- ❖ Chart out a yearly planner for the Institute, local community and Stakeholders.
- ❖ Develop a strategic plan and create student teams to carry out specific tasks of the strategic plan. For instance, a plan to save energy at the institute level with time bound plan to install Solar Power Station mandatorily either at the top of Institute building or in open field. This will enable the institute to have 24x7 power supply.
- ❖ Phase out the CFL and conventional light source such as bulbs and tube lights, halogen and mercury street/campus lights and get them replaced by the LEDs.
- ❖ . Conduct an Annual Green, Environment and Energy Audit.
- ❖ Purchase only Energy Efficient Computers viz: “ENERGYSTAR” or any other equivalent.
- ❖ Establish public/private partnerships with personnel from federal, state, and local environmental agencies, utilities, and the business community.
- ❖ Evaluate daily operations in terms of pollution prevention, waste stream management, and energy efficiency reducing, reusing, recycling, and repairing wherever possible.
- ❖ Secure a commitment up front from the people in charge that well- founded recommendations will be acted upon once audits are completed.

The Institute has to work in the direction of waste water management. Water flow restrictors on bathroom faucets and showers, low water flow toilets and automated urinal flushers should be used to cut down campus water use. The Institute will take all necessary measures to implement waste water management /rain water harvesting.

-  Waste water Management/ Rainwater harvesting Use of
-  Micro-scale techniques

- ✚ Installation of energy efficient purchase for energy conservation Displayed poster on E-waste Management
- ✚ Maintenance of water bodies and distribution system in the campus paperless administration
- ✚ Plastic free Campus Tree
- ✚ Plantation Drive
- ✚ Cleanliness Drive
- ✚ Landscaping and gardens Use of LEDs only
- ✚ Digital Library/ E-Learning Centre
- ✚ Organization of sensitization programmes for the stakeholders Establishment of Enviro-Club
- ✚ Green, Environment and Energy Audit conducted Restricted entry of automobiles
- ✚ No Vehicle Day observed

The Institute will make all the necessary efforts to involve the students, faculty and staff in “Green Campus Initiatives” by designating the volunteers of NSS

cadets, printing green campus initiative slogan specially designed for the purpose

COORDINATOR

PRINCIPAL

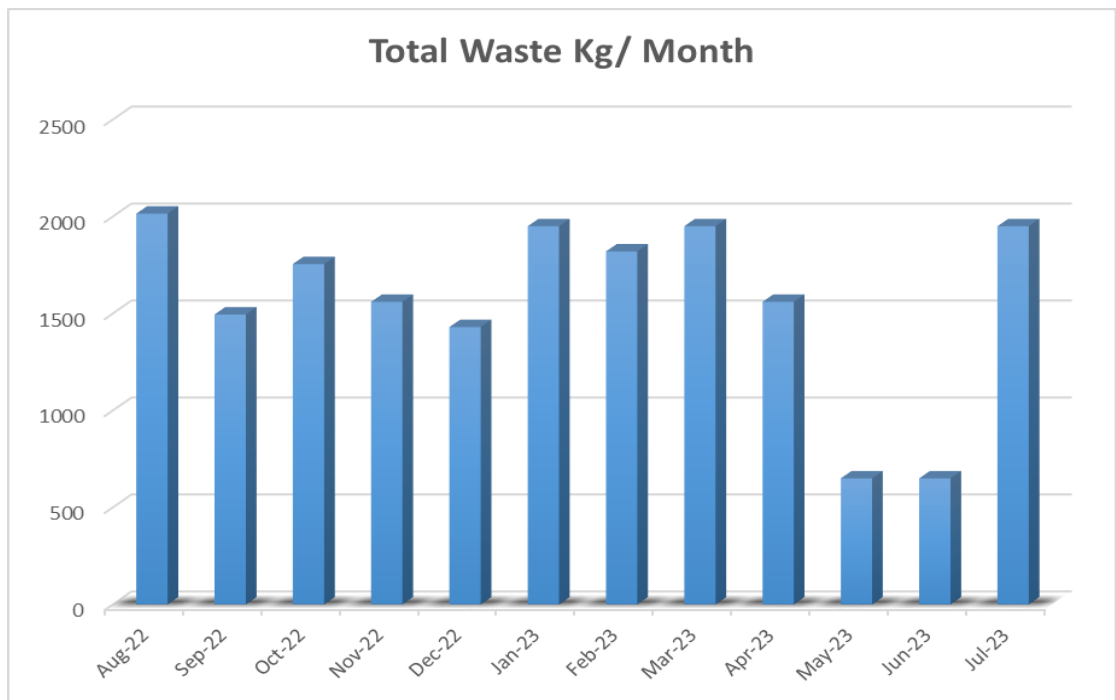
9.1 ENVIRONMENT AUDIT

9.2 SOLID WASTE AUDIT

Solid waste is the unwanted or useless solid material generated from human activities in a residential, industrial, or commercial area. Solid waste management reduces or eliminates the adverse impact on the environment and human health. A number of processes are involved inefficiently managing waste for an organization. It is necessary to manage the solid waste properly to reduce the load on the waste management system. Solid waste generation and its management is a burning issue in current days. The rate of generation of solid waste is very high and yet we do not have adequate technology to manage the generated waste. Unscientific handling of solid waste can create threats to public health and environmental safety issues. Thus, it is necessary to manage solid waste properly to reduce the load on the waste management system. The purpose of this audit is to find out the quantity, volume, type, and current management practice of solid waste generation in the Loknete Marutrao Ghule Patil Mahavidyalaya campus. This report will help for further solid waste management and to go for green campus development.

Status of solid waste generation in Mahavidyalaya Campus

SI No.	Month	Total Waste Kg/ Month
1	Jan-23	1950
2	Feb-23	1820
3	Mar-23	1950
4	Apr-23	1560
5	May-23	650
6	Jun-23	650
7	Jul-23	1950
8	Aug-22	2015
9	Sep-22	1495
10	Oct-22	1755
11	Nov-22	1560
12	Dec-22	1430



9.3 Waste Management

Biodegradable Waste Management – Vermicomposting Unit Initiatives
taken by the Mahavidyalaya for Waste Management

- Glass waste is generated from the laboratory mainly in the form of bottles; Many times bottles are reused for storing other chemicals.
- The e-waste generated at Loknete Marutrao Ghule Patil Mahavidyalaya is sent for recycling and reuse.
- Hazardous waste generated in a solid and liquid state during experiments in the laboratory is disposed of properly.
- Biodegradable waste is a major solid waste generated on campus which is further treated by vermi-compost technology.
- Mahavidyalaya has banned single-use of plastic for any administrative as well as other purposes.

9.4 Recommendations

- ❖ Provision of installation of garbage unit should be introduced where the multilevel segregation of various wastes such as paper, construction, glass, metal scrap, and food waste should be done. Further various waste recycling plans for different types of waste should be introduced.
- ❖ Provision for E-waste management should be introduced in the Mahavidyalaya Campus.
- ❖ Paper waste like answer sheets, old bills, and confidential reports should be sent for shredding, pulping, and recycling after completion of their preservation period.
- ❖ Recycling facilities should be introduced and should be supported by City Municipality and private suppliers, including glass, cans, white, colored, and brown paper, plastic bottles, batteries, print cartridges, cardboard, and furniture.

9.5 ENVIRONMENT QUALITY AUDIT

To keep the greeneries in the campus, the Mahavidyalaya regularly maintains the gardens which are looked after by concerned staff under the guidance of higher authorities of the Mahavidyalaya. Activities organized to create greenery and its conservation at the Mahavidyalaya campus is as follows-

Plantation of diversified species, Uses of medicinal plants, Identification of plants species

- Waste management plan and disposal facility

Awareness of carbon consumption and carbon footprint program

To create a green cover, Eco-friendly atmosphere, pure oxygen at the Mahavidyalaya campus, a plantation program is organized every year with active participation from the Mahavidyalaya community and visitors. A committee has been formed as the Campus Horticulture Committee to keep the greeneries in the Mahavidyalaya campus. All gardens are regularly maintained and looked after by Botany Department under the guidance of committee members. Various departmental activities are being carried out every year such as:

- Plantations and other Landscaping Activities
- Maintenance of Gardens and Landscape
- Maintenance of Plantations

The horticultural activities for landscaping and beautification of Loknete Marutrao Ghule Patil Mahavidyalaya was started with constitution of a Landscaping Committee in 2021. There were transformation and redeemed of certain natural vegetation patches for requisite infrastructure development to facilitate the emerging needs for the growth of the Mahavidyalaya.

Therefore, greenery of the large area in the campus is well maintained besides keeping remnants of the natural vegetation patches undisturbed. There are block plantation, plantations along roads side, garden space of departmental building premises, and along the residential compounds, while several tree species regenerated naturally and there are seasonal herbaceous plants that cover the whole natural landscapes. Several indigenous trees, shrubs and ornamental plants are carefully selected for the plantation to provide shelter for birds and to deliver a shaded walkway. Massive plantations and different

landscaping/beautification activities have already been carried out in different parts of the Mahavidyalaya campus.

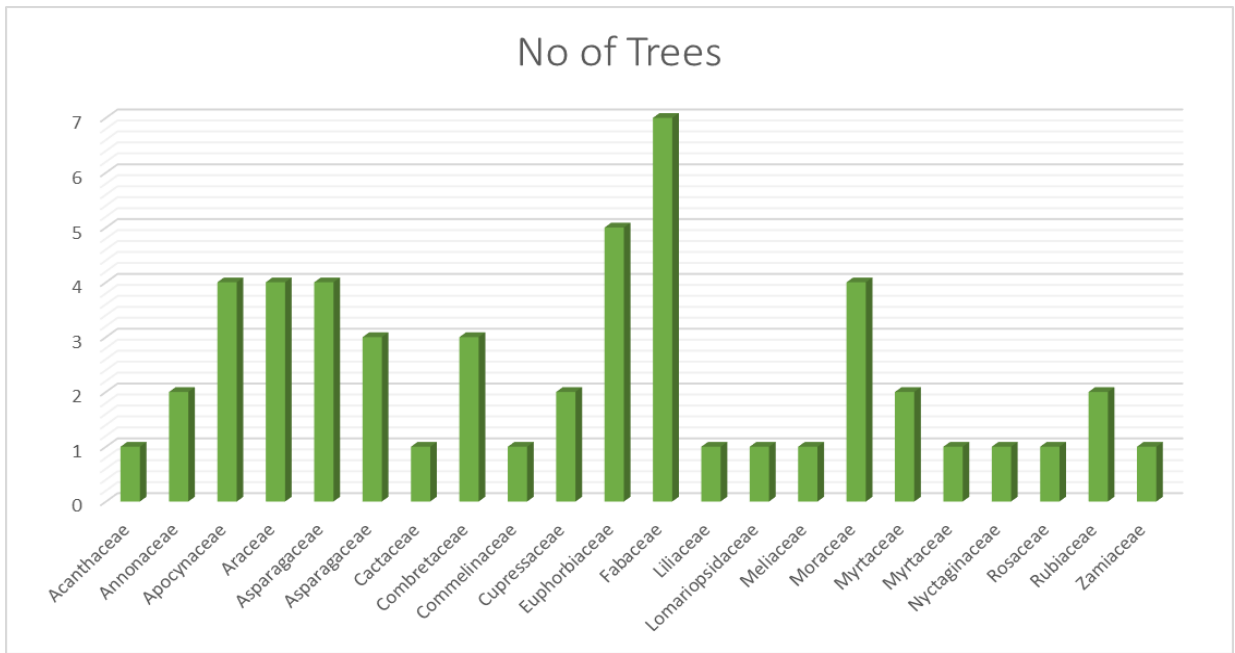
9.6 PLANTATION:

Towards the sustainable land use practice, a total of 690 plant saplings of different species have been planted in various sites in the last 10yrs through routine and special plantation drives organized by the Botany Department, Loknete Marutrao Ghule Patil Mahavidyalaya on various national and international events/occasions with active participation from Mahavidyalaya communities and guests. This program helps in encouraging an eco-friendly environment that provides pure oxygen within the institute and awareness among villagers. The plantation program includes various types of indigenous species of ornamental and medicinal wild plant species. The plants have medicinal value, which faculty members of the Department of Environmental Science help students to identify with scientific names and give information about medicinal uses of the plants.

Sr. No.	Name of the Plants	Common Name	Family	Habit
1	Nerium oleander	Nerium	Apocynaceae	Shrub
2	Euphorbia Species	Euphorbia milli	Euphorbiaceae	Shrub
3	Hylocereus undatus	Dragon Fruit	Cactaceae	Climbing habit
4	Dracena trifasciata	Snake plant	Asparagaceae	Herb
5	Pedilanthus tithymaloides	Devil Backbone	Euphorbiaceae	Shrub
6	Pterocarpus santalinus	Red saunders	Fabaceae	Tree
7	Tradescantia spathacea	Rheo Bud	Commelinaceae	Herb
8	Callotropis procera	Rui	Apocynaceae	Shrub
9	Hamelia patans	Firecracker bush	Rubiaceae	Shrub
10	Calistemom lanceolatus	Bottle brush	Myrtaceae	Tree
11	Annona squamosa	Sitaphal	Annonaceae	Shrub
12	Terminalia chebula	Hirda	Combretaceae	Tree
13	Terminalia bellirica	Behada	Combretaceae	Tree
14	Rosa rubiginosa	Rose	Rosaceae	Shrub
15	Ficus benjamina	Panda Ficus	Moraceae	Tree
16	Euphorbia tirucalli	Pencil palm	Euphorbiaceae	Tree
17	Dyopsis lutescens	Areca palm	Arecaceae	Tree
18	Dracaena marginata	DracenaSps.	Asparagaceae	Shrub
19	Dracaena colorama	DracenaSps.	Asparagaceae	Shrub
20	Dracaena masoniana	DracenaSps.	Asparagaceae	Shrub
21	Conocarpus erectus	Conocarpus	Combretaceae	Shrub / Tree
22	Jatropha curcas	Red Jatropha	Euphorbiaceae	Shrub
23	Nephrolepis exaltata	Fern	Lomariopsidaceae	Herb
24	Cupressus sempervirens	suru	Cupressaceae	Shrub
25	Araucaria columnaris	X-Mas tree	Araucariaceae	Tree
26	Zamia furfuracea	Zamia	Zamiaceae	Shrub like

				Herb
27	Cycas revoluta	Cycas	Cycadaceae	Tree
28	Thuja occidentalis	Thuja	Cupressaceae	Shrub
29	Justicia adhatoda	Adulsa	Acanthaceae	Shrub
30	Aloe vera	Korpad	Liliaceae	Shrub
31	Ficus religiosa	Pimpal	Moraceae	Tree
32	Ficus racemosa	Umber	Moraceae	Tree

33	<i>Ixora coccinea</i>	Ixora	Rubiaceae	Shrub
34	<i>Ficus retusa</i>	Bonsai Plant	Moraceae	Shrub
35	<i>Epipremnum aureum</i>	Money Plant	Araceae	Climbing herb
36	<i>Polyalthia longifolia</i>	Ashoka	Annonaceae	Tree
37	<i>Coccus nucifera</i>	Coconut	Arecaceae	Tree
38	<i>Terminalia catappa</i>	Badam	Combretaceae	Tree
39	<i>Tamarindus indica</i>	Chinch	Fabaceae	Tree
40	<i>Azadirachta indica</i>	Kadulimb	Meliaceae	Tree
41	<i>Psidium guajava</i>	Peru	Myrtaceae	Tree
42	<i>Pongamia pinnata</i>	Karanji	Fabaceae	Tree
43	<i>Leucaena leucocephala</i>	Subhabhul	Fabaceae	Tree
44	<i>Delonix regia</i>	Gulmohar	Fabaceae	Tree
45	<i>Phyllanthus emblica</i>	Awala	Euphorbiaceae	Tree
46	<i>Alstonia scholaris</i>	Saptparni	Apocynaceae	Shrub
47	<i>Ficus benghalensis</i>	Banyan Tree	Moraceae	Tree
48	<i>Plumeria pudica</i>	Nag champa	Apocynaceae	Shrub
49	<i>Cassia fistula</i>	Golden shower plant	Fabaceae	Tree
50	<i>Bougainvillea spectabilis</i>	Kagdi Phool	Nyctaginaceae	Climbing shrub

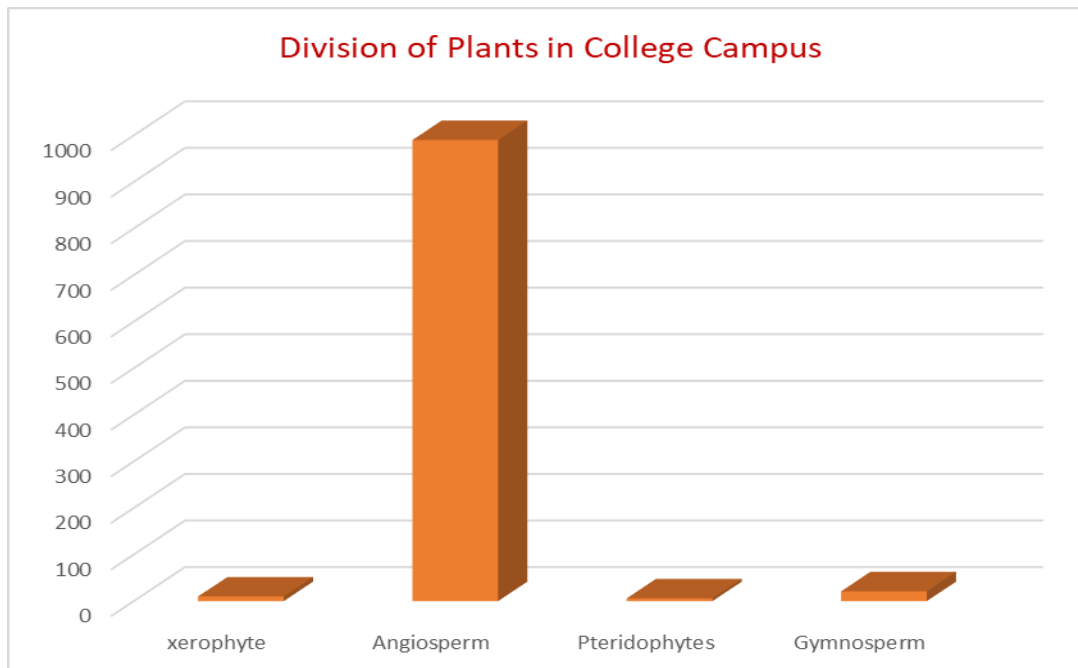


Sr.No	Common Name	Scientific Name	Habit	Division / Group	Quantity
1	Euphorbia	<i>Euphorbia spurge</i>	Herb	xerophyte	2
2	Senseveria	<i>Sansevieria trifasciata</i>	Herb	xerophyte	2
3	Rheo bud	<i>Tradescantia spathacea</i>	Herb	Angiosperm	7
4	Adulsa	<i>Adathoda Vasica</i>	Herb	Angiosperm	1
5	congress	<i>Parthenium hysterophorus</i>	Herb	Angiosperm	10
6	Money plant	<i>Crassula ovata</i>	Herb	Angiosperm	2
7	Hamelia Plant	<i>Hamelia patens Jacq</i>	perennial shrub or small tree	Angiosperm	2
8	Callotropis (rui)	<i>Calotropis gigantea</i>	perennial shrub	Angiosperm	2
9	Shitaphal	<i>Annona Squamosa</i>	Trees or Shrubs	Angiosperm	1
10	Hibiscus	<i>Hibiscus rosa -sinesis L</i>	shrubs	Angiosperm	1
11	Nephrolepis	<i>Nephrolepis exaltata</i>	perennial plant	Pteridophytes	6
12	Cycus	<i>Cycas circinalis</i>	shrub	Gymnosperm	4
13	coleus plant	<i>Plectranthus scutellarioides</i>	perennial herbs or shrubs	Angiosperm	1
14	Thuja (Morpankhi)	<i>Thuja occidentalis</i>	coniferous tree or shrub	Gymnosperms	9
		<i>Dracaena</i>			

15	Dracena	<i>fragrans</i>	succulent shrubs	Angiosperm	2
16	Conocarpous	<i>conocarpus</i> <i>erectus</i>	shrub	Angiosperm	150
17	Red Jatropha	<i>Jatropha</i> <i>pandurifolia</i>	<u>shrubs and trees</u>	Angiosperm	50
18	Dracena	<i>D. marginata</i>	succulent shrubs	Angiosperm	2
19	Rose	<i>Rosa indica</i> <i>L.</i>	Flowering shrubs	Angiosperm	10
20	Kanher	<i>Nerium</i> <i>Oleander</i>	Tree	xerophyte	1
21	Chandan	<i>Red Sandal</i>	Tree	Angiosperm	2

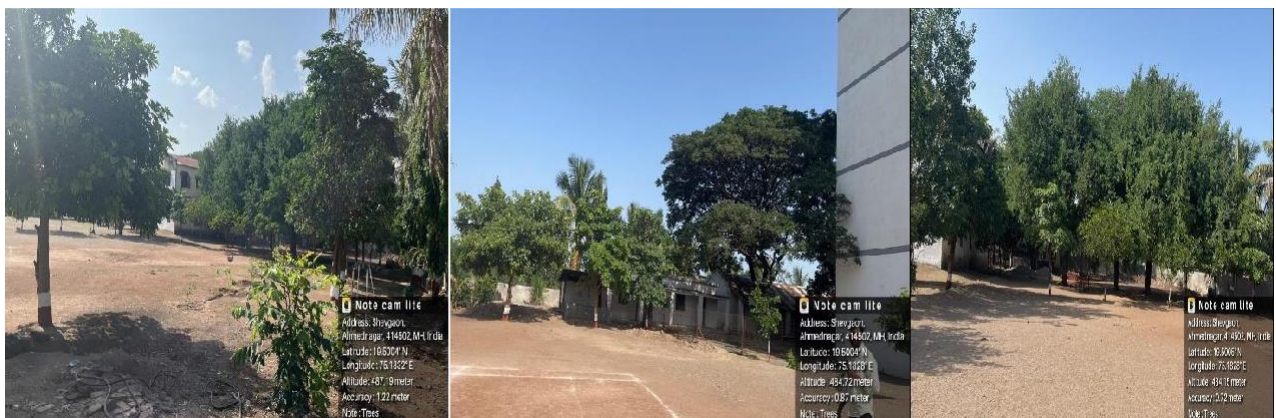
22	Bottle Brush	<i>Callistemon lanceolatus (sm)sweet</i>	Tree	Angiosperm	150
23	Hirda	<i>Terminalia chebula</i>	Deciduous tree	Angiosperm	50
24	Amla	<i>phyllanthus emblica linn</i>	Tree	Angiosperm	2
25	Umbar	<i>Ficus racemosa .L</i>	Tree	Angiosperm	10
26	Vad	<i>Ficus benghalensis L</i>	Tree	Angiosperm	7
27	Pimpal	<i>Ficus religiosa</i>	Tree	Angiosperm	2
28	Areca palm	<i>Dyopsis lutescens</i>	Tree	Angiosperm	7
29	Ashoka	<i>Polyalthia longifolia</i>	Tree	Angiosperm	61
30	Badam	<i>Terminalia catappa</i>	Tree	Angiosperm	3
31	Coconut	<i>cocus nucifera (L)</i>	Tree	Angiosperm	58
32	Subabhul	<i>Leucaena leucacephala</i>	Tree	Angiosperm	1
33	Shankasur	<i>Caesalpinia pulcherima</i>	Tree	Angiosperm	10
34	white champa	<i>Plumeria pudica</i>	Tree	Angiosperm	2
35	X-Mas tree	<i>Arocaria auricana.</i>	Tree	Gymnosperm	1
36	Chinch	<i>Tamarindus indica</i>	Tree	Angiosperm	3
37	Kagdi phool	<i>Bouganvillea spectabilis</i>	shrub	Angiosperm	1
38	Golden Shower tree	<i>Cassia fistula</i>	Trees	Angiosperm	4
39	Tagar	<i>Valeriana wallichii</i>	shrub	Angiosperm	2
40	Golden Duranta	<i>Duranta erecta</i>	shrub	Angiosperm	150
41	korpad	<i>Aloe vera</i>	shrub	xerophyte	1
42	Silk Tree	<i>Albizia julibrissin</i>	Tree	Angiosperm	4
43	Zamia	<i>Zamia furfuracea</i>	Shrub	Gymnosperm	2
44	Ixora	<i>Ixora coccinea</i>	Shrub	Angiosperm	1

45	Bonsai Plant	<i>Ficus retusa</i>	Shrub	Gymnosperm	5
46	Karanji	<i>Pongamia pinnata</i>	Tree	Angiosperm	4
47	Gulmohar	<i>Delonix regia</i>	Tree	Angiosperm	4
48	Saptparni	<i>Alstonia scholaris</i>	Shrub	Angiosperm	4
49	Dragon Fruit	<i>Hylocereus undatus</i>	Climbing Shrub	Xerophyte	2
50	Devil Backbone	<i>Pedilanthus tithymaloides</i>	Shrub	Xerophyte	2
TOTAL					990



9.7 MAINTENANCE OF GARDENS AND LANDSCAPE

In addition to new plantation drives and landscaping/beautification activities, all essential maintenance work (like lawn, hedge, existing plants /shrubs, growing of seasonal flowers) for previously developed flower and other gardens, as well as other locations of the Loknete Marutrao Ghule PatilMahavidyalaya campus, is done regularly



6.3.1 Ambient noise monitoring status

Loknete Marutrao Ghule Patil Mahavidyalaya is located in the center of the city. The major source of noise in Loknete Marutrao Ghule Patil Mahavidyalaya is

automobile noise. At the main gate of the Campus, human communication and transportation are producing some sound levels. Ambient noise monitoring was carried out in different areas of Loknete Marutrao Ghule PatilMahavidyalaya campus like at Loknete Marutrao Ghule PatilMahavidyalaya campus entry, administration building, and Botany Department. The sampling was carried out using calibrated Sound Level Meter (AZ 8921) by logarithmic scale in decibels (dB). The noise readings were collected on the Loknete Marutrao Ghule PatilMahavidyalaya campus and calculated. The details of noise status in Loknete Marutrao Ghule PatilMahavidyalaya campuses are given in the below table.

9.8 Noise level in Mahavidyalaya campus:

Sr.No	Name of the place	Minimum Noise level (dB)	Maximum Noise level (dB)
1	Near Main Gate	67.3	73.3
2	Administrative office	58.8	63.4
3	Science Lab	55.8	66.4
4	Near computer lab	56.6	68.5
5	Open area	62.5	70.6



- All parameters expressed in dB(A) Leq. and observed under permissible limits.
- Monitoring is carried out during the daytime.

9.9 Recommendations

- Loknete Marutrao Ghule Patil Mahavidyalaya Campus should follow the Environmental aware laws for different aspects of environmental management.
- Campus should make the rule & poster the slogan in the campus for protecting the environment

10.0 GREEN INITIATIVES

Many plantation drives are taken by the Loknete Marutrao Ghule Patil Mahavidyalaya on its campus. Every year on 5th June i.e. World Environment Day, the Loknete Marutrao Ghule Patil Mahavidyalaya takes Plantation activity. Under 33 Crore tree plantation scheme of Government. Loknete Marutrao Ghule Patil Mahavidyalaya has taken many plantation drives. The Botany Department looks after tree plantation activities. The trees are watered by students of various Departments. They nurture these trees throughout the

year. Students of various departments and students make the plantation and nurturing program successful. A total of 23 plant saplings of different species (like ornamental, fruit and medicinal plant, etc.) were planted in various sites of the Loknete Marutrao Ghule Patil Mahavidyalaya campus during this year's environment day program



Greenery in Mahavidyalaya Campus

11.0 Green computing practice

Being an academic institution, papers are used for various purposes like exam answer sheets, circulars, notices, office work, document printing, and Xeroxing. Since the trees are cut for paper manufacturing, the sequestration of carbon is reduced increasing carbon footprint. To cut down the carbon footprint, the Loknete Marutrao Ghule Patil Mahavidyalaya administration and various departments follow paperless methods of communication by using emails, online forms submission, etc. The paperless work was helpful in reducing tons of CO₂. The tons of biomass are saved by this green computing practice.



Promotion and awareness of uses of Bicycles among students and staff as energy conservation measures

Solar Electricity Generation

The Loknete Marutrao Ghule Patil Mahavidyalaya is planning to installed 5KVA capacity Solar Power Plant for electricity generation which produces electricity and sends it to the local grid which is helpful for an electricity bill reduction. Most of the buildings are constructed considering the need for Light and ventilation which reduces the use of electricity. The air conditioners are used only in essential conditions in the laboratories and offices to reduce electricity consumption.

SUMMARY

Green auditing is the process of identifying and determining whether institutional practices are eco-friendly and sustainable. It is a process of regular identification, quantification, documenting, reporting and monitoring of environmentally important components in a specified area. The main objective to carry out a green audit is to check the green practices followed by the Mahavidyalaya and to conduct a well-defined audit report to understand whether the Mahavidyalaya is on the track of sustainable development. After completing the audit procedure of the Mahavidyalaya for green practices,

- Mahavidyalaya takes efforts to dispose of majority of waste by proper methods. Green computing i.e. Online payment systems, online circulars, and examination procedures are helpful for reducing the use of papers and ultimately reducing carbon footprint.
- Reducing the use of one-time use plastic bottles, cups, folders, pens, bouquets, decorative items will be useful to solve the problem of plastic pollution to some extent.
- Biodegradable waste is used efficiently for composting and vermicomposting.
- Use of LED lamps and Tube Lights is to be encouraged.
- Toilets and bathrooms are consuming more water in the departments. The replacement of old taps can be beneficial for solving this issue
- The use of electric cars on the campus is a good initiative to save fuel.
- The overall ambient air quality on the campus is good while some air quality issues that may arise due to developmental activities on the campus should be addressed. The sound levels on the campus are good.
- Science departments are following the principles of Green Chemistry to reduce chemical waste.

ENVIRONMENT MANAGEMENT PLAN

- Every year the upgradation of an environmental policy document has to be prepared with all the recommendations and current practices carried by the Mahavidyalaya.
- A frequent visit should be conducted to ensure that the generated waste is measured, monitored, and recorded regularly and information should be made available to the administration.
- The Mahavidyalaya should develop internal procedures to ensure its compliance with environmental legislation and responsibility should be fixed to carry out it in practice.
- The solid waste should be reused or recycled at maximum possible places.
- Installation of sensor-based electrification items like fans, lights, etc. can save electricity
- Installation of solar panels and rainwater harvesting system to every terrace of the building will be useful in conserving the natural resources.
- Regular checkups and maintenance of pipes, overhead tanks, and plumbing systems should be done by the engineering section to reduce overflow, leakages, and corruptions.
- Science laboratories large amount of water goes waste during the process of making distilled water; the system should develop to reuse this water for other purposes. The solar distillation unit is installed at the earliest.
- In future, the campus will have enriched with “Nakshtra garden”, “Medicinal plantation,” ‘Cactus garden and butterfly garden.
- No such processes or activities were observed at Loknete Marutrao Ghule Patil Mahavidyalaya which can deteriorate the environmental quality.
- The said Mahavidyalaya is in continuous efforts to spread the environmental awareness programs among staff, students and Society.
- It was also observed that the said Mahavidyalaya is keeping the environmental quality at priority in every developmental stage.

MAHAVIDYALAYA CAMPUS BIODIVERSITY:

Dypsis lutescens: -

Scientific name: *Dypsis lutescens*

Family: Arecaceae

Kingdom: Plantae

Order: Arecales



Dypsis

lutescens

Use: -

This plant also has environmental and medicinal uses. It is once used as a source of fibre. The areca palm is also used as an interior landscaping species.



Use: used as a substitute for soap in the rural areas in some countries. Leaves and fruits are used as fish poison. In the Maldives, leaves are used to alleviate inflammations and boils.

Yucca filamentosa Color Guard Adam's Needle

Scientific name: *Yucca filamentosa*

Family: Asparagaceae

Kingdom: Plantae

Order: Asparagales



Scientific name: *Colubrina asiatica*

Family: Rhamnaceae

Kingdom: Plantae

Order: Rosales

Colubrina asiatica

Yucca filamentosa

USE- Adam's needle has a long history of ethnobotanical uses which include food, medicine, cordage and soap. The roots, which contain saponin, were prepared by boiling and pounding for use as soap.

Dracaena trifasciata

Scientific name: *Dracaena trifasciata*

Family:

Asparagaceae

Kingdom: Plantae

Order: Asparagales



Dracaena

trifasciata

- **USE:** - The plant is used to treat ringworm and fungal diseases.
- The leaf sap is applied directly on infected sores and cuts.
- Purifies air as they have the ability to remove toxic air pollutants.
- Possess anti diabetic properties.

Cordyline fruticose

Family: Asparagaceae

Kingdom: Plantae

Order: Asparagales

Subfamily: Lomandroideae



Euphorbia tithymaloides

USE: - The latex has been used topically to treat calluses, ear

ache, insect stings, ringworm, skin cancer, toothache, umbilical hernias, and warts.

Kanher

Scientific name: Nerium oleander

Family: Apocynaceae

Kingdom: Plantae

Order: Gentianales



Cordyline

USE:- Medicinal: *Cordyline fruticosa* has been used in traditional medicine to treat a variety of ailments. The plant has anti-inflammatory and analgesic properties and has been used to treat headaches, fever, and coughs. The leaves and bark have also been used to treat skin infections and wounds

Euphorbia tithymaloides

Scientific name: *Euphorbia tithymaloides*

Family: Euphorbiaceae

Kingdom: Plantae

Order: Malpighiales



Nerium oleander

USE- Medicinal uses of *Nerium oleander* include treating ulcers, haemorrhoids, leprosy, to treat ringworm, herpes, and abscesses.

Monterey cypress

Scientific name: *Cupressus macrocarpa*

Division: Pinophyta

Family: Cupressaceae

Kingdom: Plantae

Order: Cupressales



Monterey cypress

USE: - *Cupressus macrocarpa* is cultivated in Hawaii, Europe, South America, Australia, and New Zealand for lumber and pulp production, as well as an ornamental or to provide a windbreak

Scientific name: *Cycas revoluta*

Family: Cycadaceae

Kingdom: Plantae

Order: Cycadales

Norfolk Island pine

Scientific name: *Araucaria heterophylla*

Family: Araucariaceae

Kingdom: Plantae

Order: Araucariales



Araucaria heterophylla

USE:- The wood of large trees is used in construction, furniture, and shipbuilding. The plant is grown as an outdoor ornamental in regions with a Mediterranean climate, and the attractive saplings are cultivated throughout the world as houseplants.

SAGO PALM

Cycas revoluta

USE: - *Cycas revoluta* is commonly known as Sago palm which belongs to gymnosperm species, cycadaceae family and has been used as a traditional medicine to cure blood vomiting, flatulence, skin diseases, hypertension, gastrointestinal distress, cough, blood pressure, hair growth, astringent, diuretic, snake bite, dressing ...

Lemon Cypress or 'Gold Crest'

Scientific name: Monterey

Cypress

Family:

Cupressaceae

Kingdom: Plantae

Order: Cupressales



Monterey Cypress

USE:- It is a versatile needled conifer that can be used as a hedge, specimen, bonsai, or kept in a container on a patio.



Order: Laurales

Malabar spinach (*Basella alba*) is a Nutritious and Ornamental Plant

Scientific name: *Basella alba*

Family: Basellaceae

Kingdom: Plantae

Order: Caryophyllales



Basella alba

USE:- The vegetable is used in Chinese cuisine. It has many names including flowing water vegetable. It is often used in stir-frys and soups.

Euphorbia milii, the crown of thorns, Christ plant, or Christ's thorn,

Scientific name: *Euphorbia milii*

Family: Euphorbiaceae

Kingdom: Plantae

Order: Malpighiales



bilis

USE:- It has been used for thousands of years for food flavoring, essential oil applications, and in traditional medicine.

Golden Duranta:-

Scientific name: *Duranta repens*

Family: Verbenaceae

Order: Lamiales

Kingdom: Plantae



Duranta repens

USE:-

- **Ornamental use:** The Golden Duranta plant is an attractive ornamental plant with bright yellow foliage.
- **Low maintenance:** It is a low maintenance plant and can grow well in a wide range of growing conditions.
- **Air purification:** It is known to purify the air by removing pollutants such as benzene and formaldehyde.

Coconut palm tree

Scientific name: *Cocos nucifera*

Family: Arecaceae

Order: Arecales

Kingdom: Plantae

Euphorbia milii

USE:- The plant itself has proven to be an effective molluscicide and a natural alternative to pest control.

Bay laurel

Scientific name: *Laurus nobilis*

Family: Lauraceae

Kingdom: Plantae



Family: Apocynaceae
Order: Gentianales
Kingdom: Plantae

Cocos nucifera

USE:-

The leaves of the coconut palm are woven to make baskets and mats and are sometimes used in roofing. Coconut palm wood is used to build bridges and huts. The fibre from the husk is used in ropes, mats, doormats, brooms and sacks, and the coconut shells are sometimes used as bowls.



Plumeria pudica

Psidium guajava,

Guava Tree Psidium guajava,

Scientific name: Psidium guajava

Family: Myrtaceae

Order: Myrtales

Kingdom: Plantae



USE:- Various parts of the plant, including the leaf and the fruit, are used as medicine. People use guava leaf for stomach and intestinal conditions, pain, diabetes, and wound healing.

Plumeria pudica

Scientific name: Plumeria pudica

Use: -Traditional use of *Plumeria pudica* in various diseases includes Anti- inflammatory, nociceptive, anti-helminthic, anti-diarrheal activities and neurodegenerative disorders.

30) *Ficus benjamina*

Scientific name: *Ficus benjamina*

Family:
Moraceae

Kingdom:
Plantae **Order:**
Rosales

Ficus benjamina,

Use: -

Its latex and some fruit extracts are used by indigenous communities to treat skin disorders, inflammation, piles, vomiting, leprosy, malaria, nose-diseases and cancer besides the use as a general tonic. The plant is also used as antimicrobial, antinociceptive, antipyretic, hypotensive and anti-dysentery remedy.



Devil's ivy

Epipremnum aureum is a species in the arum family Araceae, native to Mo'orea in the Society Islands of French Polynesia.

Scientific name: Epipremnum aureum

Family: Araceae

Kingdom: Plantae

Order: Alismatales



Epipremnum aureum

Use: -

Epipremnum aureum is a multipurpose plant. All the parts of the plant have various types of secondary metabolites which have different types of medicinal properties like antibacterial, antifungal, anti-inflammatory, anticancer, anti-termite activity.

Blumea balsamifera

Scientific name: Blumea balsamifera

Family: Asteraceae

Kingdom: Plantae

Order: Asterales

Use: -

Solenostemon monostachyus has numerous medicinal uses. The leaf sap is considered sedative and stomachic and is applied internally to treat colic, convulsions, fever, headache and cough, especially in children, and externally against eyesight troubles.

Blumea balsamifera

USE: -

Sambong (Blumea balsamifera L.) is an aromatic shrub long used in Philippine traditional medicine as a treatment for fever, cough, headache, boils, abdominal pain and gaseous distention.

Solenostemon monostachyus

Scientific name: Solenostemon monostachyus

-

Family: - Lamiaceae.



and aphthae.

Golden Croton :-

Scientific name: *Codiaeum variegatum*

Family:

Euphorbiaceae

Kingdom: Plantae

Order: Malpighiales

Codiaeum variegatum

Use:- variegatum are used in traditional medicine to treat amoebic dysentery and stomach ache while a bath with root decoction or sap is applied in small quantities on skin related infections.



35) Bauhinia variegata

Scientific name: *Bauhinia variegata*

Family: Fabaceae

Kingdom: Plantae

Order: Fabales



Bauhinia variegata

Use: - Extract of kachnar leaves improves the liver functioning and gives wonderful results in jaundice

Family: Fabaceae

Subfamily: Faboideae

Kingdom: Plantae

Order: Fabales **Tribe:**

Millettieae

Boxelder maple

Scientific name: *Acer negundo*

Family: Sapindaceae

Kingdom: Plantae

Order: Sapindales



Acer negundo

Millettia

Scientific name: *Millettia pinnata*



Millettia pinnata

Use: - The traditional use of Millettia species includes antibacterial, anti-tumour, insecticidal, pesticidal, piscicidalantispasmodial, chemopreventive joint pain, rheumatoid arthritis, amenorrhea, tuberculosis, etc.

Ficus microcarpa, also known as Chinese banyan

Scientific name: Ficus microcarpa

Family:

Moraceae

Kingdom:

Plantae **Order:**

[Rosales](#)

Ficus microcarpa

Triadica sebifera

Scientific name: Triadica

sebifera**Family:** Euphorbiaceae

Kingdom: Plantae

Order: Malpighiales





USE:- Ashoka tree may act against cancer. It may be used for bacterial infections, arthritis, ulcers and depression. Ashoka tree may protect the heart and help to reduce blood sugar levels.

Hibiscus

Scientific name: Hibiscus syriacus

Triadica sebifera

USE:- The seeds (as well as from those of *Triadica cochinchinensis*) are the sources of stillingia oil, a drying oil used in paints and varnishes. The fatty coat of the seeds, used for candle and soap making, is known as stillingia tallow; hence its common name.

Ashoka tree,

Scientific name: *Saraca asoca*

Family: Fabaceae

Kingdom: Plantae

Order: Fabales



Saraca asoca

Family:

Malvaceae

Kingdom:

Plantae **Order:**

Malvales

Hibiscus syriacus

USE: -

The flower of *Hibiscus syriacus* Linn is a well-known traditional Chinese medicine (TCM) and health food in China, which has been used to treat dysentery, vaginal discharge, and hemorrhoids.



Bougainvillea

Scientific name: *Bougainvillea spectabilis*

Family: Nyctaginaceae

Order: Caryophyllales

Higher classification: Bougainvillea

Kingdom: Plantae

Bougainvillea spectabilis

USE:- To have medicinal values including anticancer, antidiabetic, anti-hepatotoxic, anti-inflammatory,



antihyperlipidemic, antimicrobial, antioxidant and antiulcer properties.

inflammation, infections, fever, skin diseases and dental disorders. The medicinal utilities have been described especially for neem leaf.

coconut tree

Scientific name :-Cocos nucifera

Family: Arecaceae

Kingdom: Plantae

Order: [Arecales](#)

Species: C. nucifera

Azadirachta indica

Use: - All parts of the neem tree- leaves, flowers, seeds, fruits, roots and bark have been used traditionally for the treatment of



Cocos nucifera

Neem tree

Scientific name: Azadirachta indica

Family: Meliaceae

Kingdom: Plantae

Order: [Sapindales](#)



Katuk

Sauropus androgynus, also known as katuk, star gooseberry, orsweet leaf,

Scientific name: Sauropus androgynus

Family:

Phyllanthaceae

Kingdom: Plantae

Order: Malpighiales

Sauropus androgynus

USE:-

The leaves of this plant have been traditionally used to treat certain diseases, for weight loss, and as vegetable dishes.



Plumeria obtusa,

Scientific name: Plumeria obtusa

Family: Apocynaceae

Higher classification: Frangipani

Kingdom: Plantae

Order: Gentianales

Plumeria obtusa



USE:-

The different parts of the plant are used traditionally to treat various diseases like diabetes mellitus, wounds and skin disease, diuretic, purgative, abortion and also used in cosmetics, aromatherapy, necklaces and as offerings.

Nephrolepis exaltata

Rosa multiflora

Scientific name: Rosa multiflora

Family: Rosaceae

Kingdom: Plantae



Rosa multiflora

USE:-It is used to treat constipation and articular pain and as an application to foul ulcers, wounds, sprains and injuries

Nephrolepis exaltata, known as the sword fern or Boston fern,

Scientific name: Nephrolepis exaltata

Family: Nephrolepidaceae

Kingdom: Plantae

Order: Polypodiales



Kingdom: Plantae

Order: [Asparagales](#)



Dracaena marginata

Use: -Air purifier: Dracaena is one of the indoor plants that help reduce indoor pollution levels. Increase humidity: The plant releases water vapour and increases moisture levels in air, thus, reducing dry-air conditions. Ornamental purpose: These indoor plants help beautify home interiors.

Almond

Scientific name: Prunus dulcis

Family:

Rosaceae

Kingdom:

Plantae

Order:

Rosales

USE:- The sweet almond (kernel) can be eaten plain or be used as ingredient in desserts and confectioneries (sugared almonds, pastries, almond milk). Moreover, bitter almonds are used for producing almond oil, which is widely used in pharmacy (cosmetics and other).

