PADMABHUSHAN VASANTRAODADA PATIL MAHAVIDYALAYA
KAVATHE MAHANKAL, Dist. Sangli (Maharashtra) Pin- 416 405
Principal Prof. (Dr.) M. K. Patil M.Sc., M. Phil., Ph.D. Mob.**9421185277**
Phone-02341-295220 Email: kmpvp@rediffmail.com Website: www.pvpkm.ac.in
Jr. College Index No. J 22.04.002

Criterion-VII: Institutional Values & Best Practices

Indicator 7.1 Institutional Values & Social Responsibilities

7.1.2 The Institution has facilities and initiatives for Alternate sources of energy and energy conservation measures, Management of the various types of degradable and non-degradable waste, Water conservation, green campus initiatives, Disabled-friendly, barrier-free environment.

Reports of activities for the implementation of the initiative's

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P.V.P. MAHAVIDYALAYA Dist. Sangli 416 405 KAVATHE MAHANKAL

-PRINCIPAL
Padmabhushan Vasantraodada Patil
Mahavidyalaya, K. Mahankal, Dist. Sangli

GV/EA/05-23/173

Energy Audit Certificate (As per Green Building Parameters)

The study is conducted as per Indian and International Green Building Standards initiated in the capacity of an Accredited & Certified Green Building Professional

It is awarded for **2021-2022 and 2022-2023** to the Esteemed Institution

(Analysed for 2 years and extended validity for 1 year, thus total 3 years)

Shikshan Prasarak Sanstha's

P. V. P. Mahavidyalaya Kavathe Mahankal

Vidyanagar, Kavathe Mahankal Tal-Kavathe Mahankal,Dist-Sangli Pin-416405, Maharashtra, India

(Site visit held on Monday, 22 May 2023)

As part of the Institution's initiatives for a Healthy & Sustainable Institute the audit was conducted.
We appreciate the immense efforts taken by Staff and students towards the Energy Management and Conservation.

Issued on **Monday, 22 May 2023** and valid till **30 April 2024**

Ar. Nahida Abdulla Shaikh
"Elite 100 Green Architects of India" Econaur, 2022
Registered Architect, P.G.D.R.D, ISO Certified I. A. (IMS)
Indian Green Building Council Accredited Professional (IGBC AP)
ASSOCHAM GEM Green Building Council Certified Professional **(Registration. No. 22/718)**

Project Head and Green Building Professional-Consultant
Sustainable Academe I Sustainability Department of Greenvio Solutions, Naigaon
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Website: https://thegreenviosolutions.co.in/

ENERGY AUDIT

STUDY PERIOD (TWO YEARS) 2021 – 2022 & 2022 - 2023

Sustainability study

AUDIT REPORT

Studied for

Shikshan Prasarak Sanstha's

P. V. P. Mahavidyalaya
Kavathe Mahankal

Vidyanagar, Kavathe Mahankal Tal-Kavathe Mahankal,
Dist-Sangli Pin-416405, Maharashtra, India

Studied in the capacity of

Accredited and Certified

Green Building Professional

Studied by

Website: https://thegreenviosolutions.co.in/

Email: greenviosolutions@gmail.com

Valid till **April 2024**

Background reference image Janko Ferlic on pexels

Disclaimer

The Audit Team has prepared this report for the **Shikshan Prasarak Sanstha's P.V.P.Mahavidyalaya Kavathe Mahankal** located at *Vidyanagar, Kavathe Mahankal Tal-Kavathe Mahankal,Dist-Sangli Pin-416405, Maharashtra, India* based on input data submitted by the College analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the Hon'ble Management and College. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

The audit is a thorough study based on the inspection and investigation of data collected over a period of time and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who is as an Accredited and Certified Green Building Professional-Architect. Green Building consultancy is her forte and she is one of the most sought after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted in capacity of Accredited & Certified Green Building Professional with extensive experience.

Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy firm

Sustainable Academe is our department for conducting Audits

Palghar District, Maharashtra- 401208

sustainableacademe@gmail.com

DETAILED REPORT

Acknowledgement

The Audit Assessment Team thanks the **Shikshan Prasarak Sanstha's P.V.P.Mahavidyalaya Kavathe Mahankal, Maharashtra, India** for assigning this important work of Energy Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to **Mr. Balasaheb Aanandrao Shinde,** President; **Mr. Suresh Patil,** Vice President; **Mr. Sudarshan Balasaheb Shinde,** Secretary and everyone from the Management.

Our heartfelt thanks to Chairpersons of the entire process **Prof. (Dr.) M. K. Patil,** Principal for the valuable inputs.

We are also thankful to **College's Task force the Assistant Professors** who have collected data required - **Dr. B. T. Jadhav** and **Prof. Avinash Kamble.**

We highly appreciate the assistance of the **entire Teaching, Non-teaching and Admin staff** for their support while collecting the data.

Sustainable Academe
Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

DETAILED REPORT

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DETAILED REPORT

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

Audits covered: ☑ Green audit ☑ Energy audit ☑ Environment audit

Institute: Padmabhushan Vasantraodada Patil mahavidyalaya, Kavathemahankal, **Date:** 22/05/2023

Document objective: Inferences of the Site visit

Observations (Positive aspects)	**Suggestions** (Improvement aspects)
Green Audit	
- Rainwater harvesting is under practice, and is connected for use in chemistry lab.	- Waste management should be improved for [Plastic, E-waste, Organic & Liquid waste]
Energy Audit	
- Turbo ventilators are used for thermal comfort	- Undertake hybrid mode for alternate sources of energy - Replace with energy efficient lighting.
Environment Audit	
- Improve green cover of premises	- Lot of beautification should be undertaken for New Buildings.

Signature & round seal
Name: P.V.P. Mahavidyalaya
Designation: IQAC. Co-ordinator
For the said Institute

Signature & round seal
Name: Mrs. F.A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

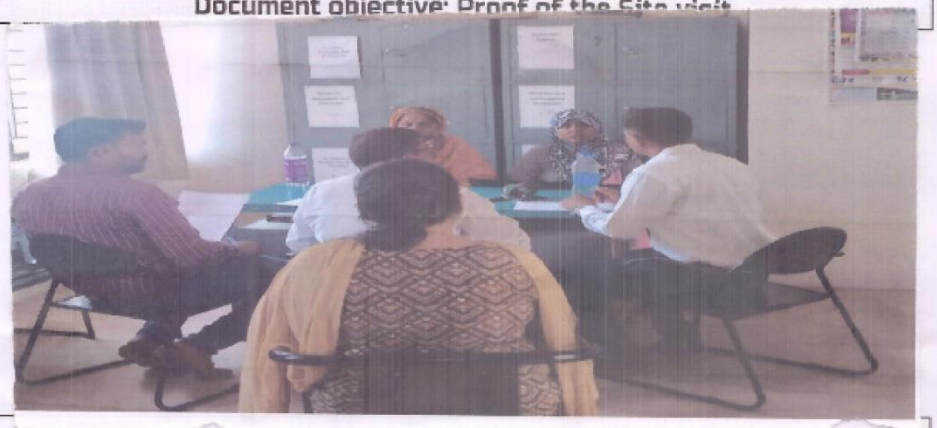
Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

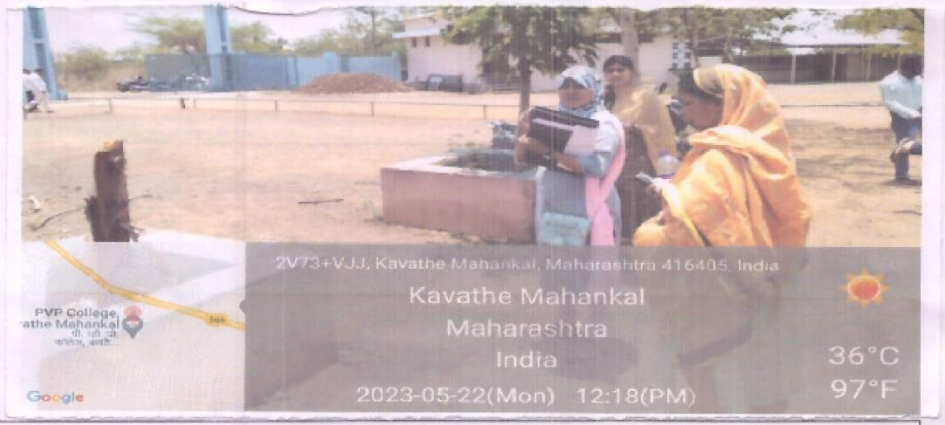
Audits covered: ☑ Green audit ☑ Energy audit ☐ Environment audit

Institute: Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathemahankal. **Date:** 22/05/2023

Document objective: Proof of the Site visit



Meeting with the core t...



Investigation of the systems

Signature & round seal
Name: PVP mahavidyalaya
Designation: Pr. Co-ordinator
For the said Institute

Signature & round seal
Name: Mrs. F. A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

1. Introduction

1.1 About the Institution

This college was established in a drought prone area where most of the students come from rural area with economical background. The College firmly believes that education is incomplete without discipline. The institution is confident in making a wholesome person out of the student only by instilling in him discipline which would go to foster a high degree of righteousness in and around him. Accordingly, a disciplinary committee monitors the discipline of the institution.

1.2 Assessment of the Institute

1.2.1 Affiliations

The technical course provided by the College is affiliated to **Shivaji University,** established in 1962, a state university located at Kolhapur, Maharashtra, India.

1.2.2 Certification

The College submits its academic records every year to the **All India Survey of Higher Education (AISHE)** Govt. of India through its registered allocated code which is C-11026.

1.2.3 Recognitions

The College has upgraded in the teaching level – Under graduate to Post graduate in the **section 2(f) and 12 (B) of the University Grants Council Act, 1956 in 1994** with affiliation nos. being 8-131/93 and F.B-131/93 respectively.

1.3 Statements of the Institution

1.3.1 Vision

The College proposes *"Sanstha is committed to meet the education, social, cultural and economic needs of the region and the nation to create a just and human society."*

DETAILED REPORT

1.3.2 Mission

The College adheres and focuses *"To promote and foster a culture of high quality teaching and learning and to serve societal needs by encouraging, generating and promoting excellence in research and extension activities."*

1.3.3 Goals

The College has formulated the following aim to achieve its mission:

- *To make relentless efforts for the spread of education among classes and communities, that are socially and educationally underprivileged.*
- *To make special provision and for disseminating knowledge and promoting arts and culture in rural areas.*
- *To supervise and control the conduct and discipline of the students of the P.V.P. Mahavidyalaya and to make arrangements for promoting their health and general welfare.*
- *To create a fine band of capable youngsters with great thirst for knowledge and scientific curiosity.*
- *To promote the study and research of the Marathi language and the history of Maharashtra.*
- *To provide opportunities to the P.V.P. Mahavidyalaya community to reach his/her highest personnel and professional capability.*
- *To develop the personality and character of students by value education.*

DETAILED REPORT

2. Overview

2.1 Summarised Populace analysis for 2022-2023

2.1.1 Students data

The data (shared by the Institute) shows there were a total of **1,075 male and 653 female students.**

2.1.2 Staff data

S. No.	Type	Male	Female	Total
1	Teaching staff	30	06	**36**
2	Non-Teaching staff	31	01	**32**
Total Staff Members		**61**	**07**	**68**

Table 1: Staff data of the Institution for 2022-2023

The staff data shows the College premises had a total of **68 Staff Members.**

2.2 Summarised Populace analysis for 2021-2022

2.2.1 Students data

The data (shared by the Institute) shows there were a total of **1,172 male and 648 female students.**

2.2.2 Staff data

S. No.	Type	Male	Female	Total
1	Teaching staff	40	06	**46**
2	Non-Teaching staff	32	01	**33**
Total Staff Members		**72**	**07**	**79**

Table 2: Staff data of the Institution for 2021-2022

The staff data shows the College premises had a total of **79 Staff Members.**

DETAILED REPORT

2.3 Total College Area & College Building Spread Area

The **total site area is 10.32 acres** and the **total Built-up area of the Institute is 34,645 sq. ft.** for **an approximately 1,796 footfalls.**

2.4 Institute Infrastructure

2.4.1 Establishment

The Institute was established in **1978**.

2.4.2 Spatial Organisation

There are provisions for staircase for accessibility on the premises, whereas there are amenities such as CCTV, a first aid room, etc. The Institute is located pretty close to nature and hence has a very fresh environment which is absolutely pollution free and healthy. The Building is a Reinforced Cement Concrete (RCC) framework building.

DETAILED REPORT

3. Research

3.1 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution sustainable and healthy premises for its inhabitants.

3.2 Analysis of the Green Building Study Audit

The procedure included detailed verification as follows:

- Investigation
- Technical discussion with team
- Observations
- Inferences

3.3 Strategy adopted for Green Building Study Audit

The strategies included data collection from the admin department, actual inventory, investigation to check the operation and maintenance, analysis of the data collection, and preparation of the Report.

3.4 Activities undertaken for the Green Building Study Audit

- Discussion with the Institute
- Allotment and Initiation by the Institute
- Data collection
- Submission of the files

DETAILED REPORT

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

Audits covered: ☑ Green audit ☑ Energy audit ☑ Environment audit

Institute: Padmabhushan Vasantdada Patil mahavidyalaya, Karanmahapur **Date:** 22/05/2023

Document objective: Induction Meeting attendance sheet

S. No.	Name	Committee	Designation	Signature
1.	Mrs. F. A. Shaikh	External	Project Coordinator	
2.	Ar. Nahida Abdulla	External	Project Head	
3.	Mr. A A Kamble	Internal	IQAC. Co-ordinator	
4.	Dr. B.T. Jadhav	Internal	chairman, Cri. VII	
5.	Mr. S. B. Patil	Internal	member, Cri. VII	
6.	Mr. S. M Sable	Internal	member, Cri. VII	
7.	Mrs. P. R. Mali	Internal	member, Cri VII	

Signature & round seal
Name: P. V. P. Mahavidyalaya
Designation: IQAC Coordinator
For the said Institute

Signature & round seal
Name: Mrs. F. A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

Audits covered: ☑ Green audit ☑ Energy audit ☑ Environment audit

Institute: Padmabhushan Vasantraodada Patil Pratishthan's College of Engineering & Visual Arts **Date:** 22/05/2024

Document objective: Exit Meeting attendance sheet

S. No.	Name	Committee	Designation	Signature
1.	Mrs. F. A. Shaikh	External	Project Coordinator	
2.	Ar. Nahida Abdulla	External	Project Head	
3.	Mr. A. A. Kamble	Internal	IQAC, coordinator	
4.	Dr. B. T. Jadhav	Internal	Chairman, Cri. VII	
5.	Mr. S. B. Patil	Internal	Member, Cri VII	
6.	Mr. S. M. Sable	Internal	—11—	
7.	Mrs. P. R. Mali	Internal	—11—	

Signature & round seal
Name: P V Mahajabhajaga
Designation: IQAC, Coordinator
For the said Institute

Signature & round seal
Name: Mrs. F. A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

4. Investigation

4.1 Sources analysis

The primary and secondary sources of energy consumption are based on the electrical supply through the local government.

4.2 Energy efficiency analysis

4.2.1 Energy efficient practices for alternative sources

There are no provisions available at present.

4.2.2 Energy efficient equipment

- The premise has LED Lights in multiple spaces.
- There are no energy efficient fans in the premises.

DETAILED REPORT

5. Documentation

5.1 Primary sources of energy consumption

- **Electrical (Metered) –** Light, Fans, Equipments, Pumps comprise these sources.
- **Renewable energy –** There are 'NO sources' to harness solar energy in the premises through solar panels.

5.2 Secondary sources of energy consumption

The premise uses batteries, inverters as backup for administrative purposes. The details of the existing sources are documented below:

S. No.	Name	Nos.
1	Inverters	4
2	Batteries	8
3	Gas cylinders	4

Table 3: Details of secondary sources of energy consumption

5.3 Actual Electrical Consumption as per Bills

The College spends a substantial amount on electricity bills every month. However, we would like to recommend the use of alternate sources of energy to harness the electrical loads and reduce the monetary expenses.

S. No.	Month	Year	Amount	Units consumed
Academic year 1				
1	June	2021-2022	9,860	1,095
2	July	2021-2022	8,060	671
3	August	2021-2022	2,870	358
4	September	2021-2022	4,950	618
5	October	2021-2022	3,040	380

DETAILED REPORT

6	November	2021-2022	6,040	604
7	December	2021-2022	4,390	548
8	January	2021-2022	5,350	528
9	February	2021-2022	6,950	695
10	March	2021-2022	12,680	1,056
11	April	2021-2022	18,520	1,542
12	May	2021-2022	16,120	1,343
Academic year 2				
13	June	2022-2023	3,310	413
14	July	2022-2023	12,020	1,001
15	August	2022-2023	8,950	745
16	September	2022-2023	10,030	835
17	October	2022-2023	7,050	587
18	November	2022-2023	8,090	674
19	December	2022-2023	7,590	632
20	January	2022-2023	8,030	662
21	February	2022-2023	7,030	585
22	March	2022-2023	16,040	1,336
23	April	2022-2023	15,490	1,106

Table 4: Details of the electrical consumption

DETAILED REPORT

5.4 Calculated Electrical Consumption as per inventory

The electricity bills provide actual consumption data. The following is the calculated consumption. It is done to understand the percentage of energy usage in the premises by various applications. It is based on the inventory collected and interviews with the staff.

The additional data such as wattage is taken from market research. In terms of electrical consumption, the main sources are lights, fans, air conditioner, and equipment. The inventory and data collection for sources of energy consumed in the premise in summarised in the following sections.

The following documentation is based on the consumption practice of the premises on a regular working day.

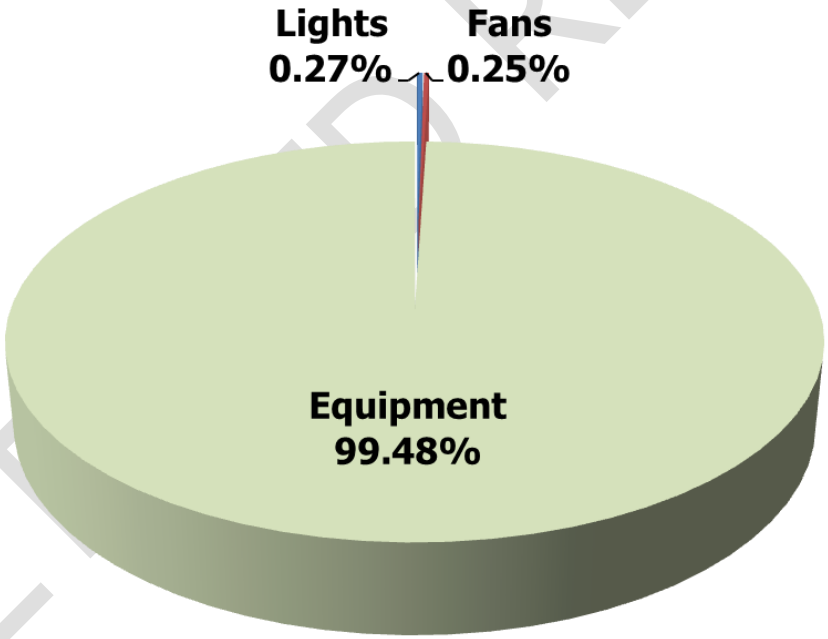


Figure 1: Summary of the calculated electrical consumption as per inventory

The above graph shows that equipment consumes 99.48% whereas the lights consume 0.27% and the fans consume 0.25% each of the total calculated electrical energy.

DETAILED REPORT

5.5 Lights

5.5.1 Types of lights based on the numbers

There are a total of **62 nos. of Non-LED lights** the premises.

5.5.2 Types of lights based on the power consumption

The energy consumption of lights is **4,788 kWh** of energy.

5.6 Fans

5.6.1 Types of fans based on the numbers

There are a total of **51 fans** on the premises as follows:

S. No.	Type	Nos.
1	Ceiling Fans	39
2	Small motor exhaust fan	3
3	Table fans	2
4	Wall mounted fans	7

Table 5: Summary of the types of fans in the premises

5.6.2 Types of fans based on the power consumption

The energy consumption of fans is **4,326 kWh** of the energy.

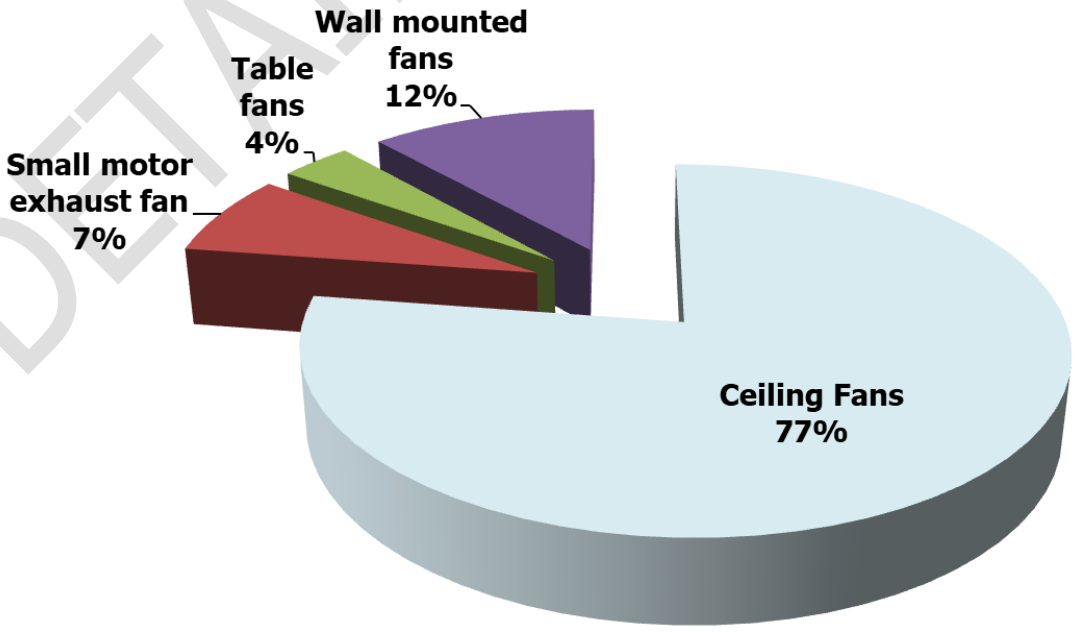


Figure 2: Types of fans based on power consumption

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The above analysis shows the **Ceiling fans consume 77%** whereas the **wall mounted fans consume 12%** while the **small motor exhaust fans consume 7%** and the **table fans consume 4%** of the total power.

5.7 Equipment

5.7.1 Types of Equipment

There are **186 nos. of equipment** in the Educational sector.

5.7.2 Types of equipment as per their energy contribution

The energy consumption of equipment is **17,45,774 kWh** of energy.

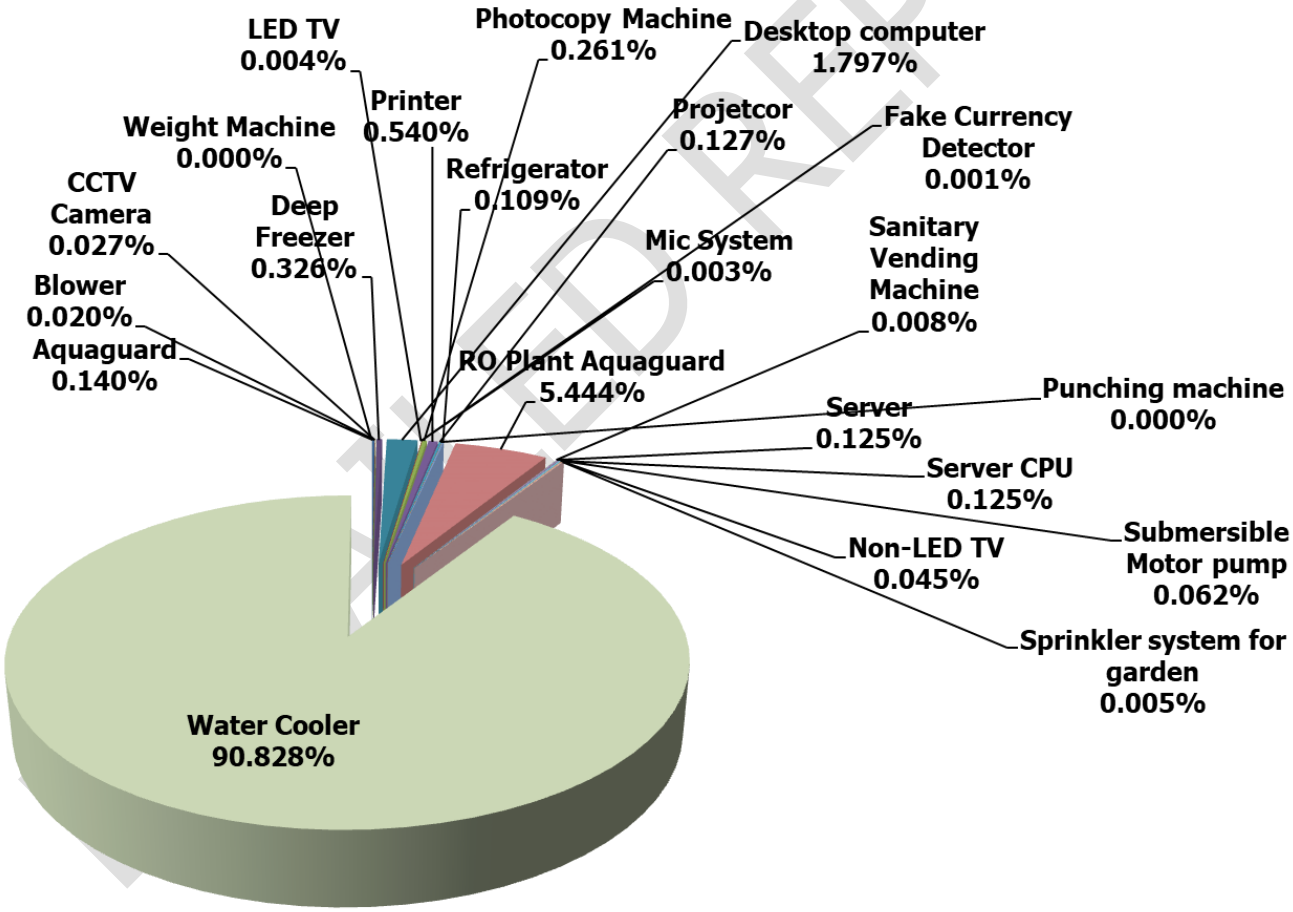


Figure 3: Energy consumed by types of equipment in the educational sector based on the usage study

The above summary shows that the **water cooler consumes more energy at 90.828%** while the **RO plant Aquaguard system consumes 5.444%** the **desktop computer consumes 1.797%** and the **printer machine consumes 0.540%** these are the maximum consumers as compared to other equipment.

DRAFT REPORT

6. Suggestion

6.1 Section-wise suggestions

The following suggestions are to be considered as a ***first priority*** for implementation. These **should be executed within the next 1.5 to 2.5 years from the date of the Report submission.** The Institute can execute a plan after discussion with Project Head.

6.1.1 Electromechanical systems – Electrical and Lighting

Section 1 – Non-LED lights

The current light analysis shows that Non-LED lights consume anywhere between 50W to 54W and even more when in use; these should be replaced with LED lights which consume on an average 12-16W when in use. Our technical analysis shows that there would be a reduction of an average of **67% reduction** in energy consumption through lights specifically as a part of the electro -mechanical system if all **Non-LED lights on all floors** are replaced with an energy efficient appliance whenever the College undergoes renovation.

Section 2 – Ceiling fans

The current Fans are in proper working conditions and maintained well. The ceiling fans are in more quantity and consume at least 45W when in use. These should be replaced with energy efficient fans consuming 14W when in use. Our detailed study states that is all the **ceiling fans on all floors** if replaced with star rated appliance results in a reduction of average of **69% reduction** in energy consumption if replaced with energy efficient appliance. It will be suggested to either replace these now if College can have certain plans else the replacement can be done when fans get damaged or are not in working condition.

DETAILED REPORT

6.2 General suggestions

The following details are consolidated study recommendations related to 'entire Institute' and should be considered as ***second priority*** for implementation, once the section wise recommendations are implemented. The following recommendations should be ***implemented within 2.5 to 3.5 years from the date of the Report submission.***

6.2.1 Alternatives to increase renewable energy

6.2.1.1 Solar farms

This option can be explored with due discussion with the surrounding and adjacent farmland owners. This will serve as a noble project and will provide dual benefits to farm land and University w.r.t to electricity bill power reduction.



Plate 1: Solar farm concept for the Institute (For reference purpose only)

Image source: Zsuzsa Bóka from Pixabay

6.2.1.2 Solar parking

The College can turn its existing parking areas into solar panel powered parking areas. This will provide shade and renewable energy benefit to the College.



Plate 2: Solar parking concept for the Institute (For reference purpose only)

Source: Image by https://solarpowerproject.in/solar-panels-for-parking-lots.php

DETAILED REPORT

6.2.2 Alternatives towards Smart premises mechanisms

6.2.2.1Smart gardening

The College can undertake a Smart Gardening system using IoT Technology. This will result in saving time by scheduling time for watering; saving money through automated water schedules tracking dampness of soil to know when, how much water garden needs.



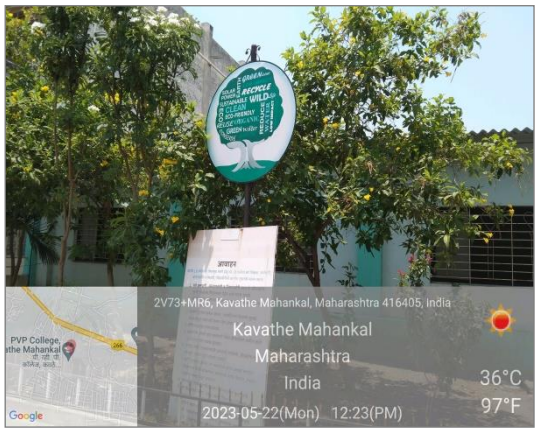
Plate 3: Solar farm concept for the Institute (For reference purpose only)

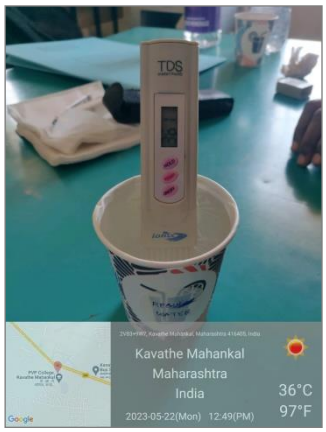
Image source: https://housing.com/news/smart-gardening/

Data source: https://www.happysprout.com/inspiration/what-is-smart-gardening/

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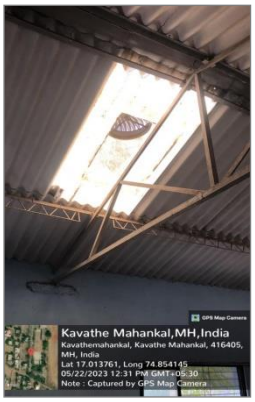




On-site investigation of the Old campus







On-site investigation of the internal spaces





Details about the various types of dustbins and the oxygen park





Rain water harvesting facility in the premises

7. Compilation

The study is based on the data collected, analyzed, rechecked, and confirmed through multiple modes. For the quality study, some standards/ notes have been referred to. These are listed and noted below. However, no direct references have been used anywhere. These are used as a base to analyze and study the data collected.

Specific references for study related to energy

- https://www.energy.gov/eere/buildings/zero-energy-buildings
- https://www.dsaarch.com/zero-net-positive-energy
- U.S. Energy Information Administration
- https://www.happysprout.com/inspiration/what-is-smart-gardening/
- https://housing.com/news/smart-gardening/
- Inference study reference image - Zsuzsa Bóka from Pixabay
- Inference study reference image - https://solarpowerproject.in/solar-panels-for-parking-lots.php

DETAILED REPORT

Shikshan Prasarak Sanstha's

Padambhushan Vasantraodada Patil Mahavidyalaya

Kavathe Mahankal, Dist- Sangli

Report On

WASTE MANAGEMENT

Introduction-

P. V. P. Mahavidyalaya envisions a clean and green campus where environmentally friendly practices and education combine to promote sustainable and eco-friendly practices on the campus and beyond the campus. The green campus concept offers the institution an opportunity to take the lead in redefining its environmental culture by instilling environmental ethics among students and staff. The Institute also promotes a clean and green campus through adopting, practicing, and promoting environmentally friendly practices among students and staff to generate Eco consciousness among them and in the world around them.

The increasing human footprint on earth poses great environmental challenges that continue to grow over time. An unprecedented effort is required to alleviate the adverse effects that human activities have on the ecosystem, effects that in turn alter how we interact with the earth and with each other. The inclusion of all approaches to problem-solving will be necessary to effect a meaningful change.

Vision

The vision is to create awareness among young students and the public about various environment-related problems and the conservation of Nature and natural resources in the surrounding area and educate on how to live Eco-friendly.

Mission

- To bring awareness among the students about the hazards of spoiling the environment.
- To help the students understand each individual's responsibility to take the initiative to save the environment.
- To help students take small steps in saving the environment.

Objectives

- To encourage students to keep the environment clean.
- To educate students to create awareness amongst the public.
- To make students understand the importance of the environment and its problem areas.

Functions

- To sensitize the students to minimize the use of polluting products.
- To motivate students to adopt environmentally friendly practices which include paper bags, saving electricity, etc.
- To take necessary steps to protect the environment.

Expected Outcomes

- Awareness is created about the hazards that are spoiling the environment.
- Students and teachers realize their responsibilities to save the environment

Principles

Waste is introduced into the environment due to the day-to-day activities of humans. Waste management refers to the many methods and processes of dealing with waste at every stage from generation and collection through to final disposal. Waste needs to be managed in order to prevent contact with humans or their immediate environment. Therefore, the main purpose of waste management is to isolate waste from humans and the environment, and consequently, safeguard individual, family and community health. In addition, the aesthetic value of a better outlook and a clean physical environment is important for our emotional well-being.

- The waste we produce can be categorized as **liquid waste** or **solid waste** depending on its physical state. It can also be categorized as hazardous or non-hazardous.

Liquid waste includes human waste, runoff (storm water or flood water), sullage, industrial wastewater and other forms of wastewater from different sources. Human waste is mainly composed of faeces and urine, which together are known as excreta. All human body waste is classed as liquid waste. The mixture of human waste with wastewater is known as sewage and also sometimes known as blackwater. Runoff is simply rainwater that collects on the ground and runs off into channels, ditches and rivers. Sullage, also known as greywater**,** is water that has been used for washing in bathrooms and kitchens; it does not include human waste.

Human waste is biodegradable and when contained in a waste containment facility it undergoes a biological digestion process by which microorganisms, particularly bacteria, decompose the organic matter. The decomposing bacteria

found in pit latrines and septic tanks do not require oxygen and are called *anaerobic* bacteria. The digestion process may take from several days to a few months, depending on the atmospheric temperature and other local conditions, before it is completely decomposed or degraded. The digested waste matter is called sludge.

Biodegradable wastes are those that can be broken down (decomposed) into their constituent elements by bacteria and other microorganisms. The term can be applied to both liquid and solid waste. Human and animal wastes, food waste, paper, and agricultural wastes are all biodegradable. This natural biological decomposition process ensures that, under the right conditions, these wastes do not accumulate in the environment.

Many plastics are not biodegradable and these create environmental problems because they remain unchanged for many years. The bacteria responsible for biodegradation may be aerobic**,** meaning they require oxygen, or anaerobic**,** meaning they do not need oxygen to survive. The decomposition of biodegradable wastes by anaerobic bacteria is sometimes called digestion.

Solid waste is defined as any waste that is dry in form and is discarded by people as unwanted. You can describe the solid waste from general housekeeping as residential waste, refuse, household waste or domestic waste. Waste produced in other areas is defined as industrial, commercial, institutional or agricultural waste, or street sweepings, depending on its source. In urban settings, municipal waste refers to the solid waste that is collected by local government (the municipality) and may include household, commercial, industrial waste and street sweepings. The solid waste that is produced as a result of food preparation, or any foodstuff leftover after eating, is called kitchen waste or garbage.

Institutional solid waste is produced from public or government institutions, offices, schools, universities, religious institutions, sporting fields, etc. It can be very mixed in its components.

Waste management

In any waste management process, there is a stage when waste will be temporarily stored or contained onsite (i.e. in the place where the waste is produced). This may be temporary or a final disposal site. If storage is temporary, then subsequent stages will be the transfer or transport to a treatment facility or technology, followed by final disposal offsite (i.e. away from the waste generation site).

Solid Waste Management:

It is the process of collecting and treating solid waste which offers solutions for recycling items that do not belong to garbage or trash but can be changed in a vulnerable resource. P.V.P. campus is facilitated to collect the dry waste and wet waste in separate bins. Wet waste is converted into manure by processing with vermin compost. Dry waste is sent to the nearby processing unit of the corporation. P.V.P. NSS wing also facilitates similar activities. The lab wastes are tested to be unharmful to the environment. Sewage from all the restrooms is collected and channeled to Sewage Treatment Plant on the campus. The treated water is effectively utilized for gardening and washing the buses. It nearly generates a daily saving of 35KL of water. Most of the campus garden is surviving with treated water.

Liquid Waste Management:

Liquid Waste from all the restrooms is collected and channeled to Sewage Plant on the campus. The Liquid Waste of the lab is effectively collected in percolated pits.

Photographs-



Soak pit for every laboratory drainage



Wall-mounted Dustbin for Every Classroo



Separate bins for Degradable and non-biodegradable waste, Hazardous Waste



Carrying non-biodegradable waste municipal corporation

Conclusion

Proper waste management is essential for the health and sustainability of our planet. Individuals and institutes taken responsibility for waste and with getting as much as possible efforts we reduced, reused, and recycled waste. Institute has taken all possible initiatives for waste management. Taking initiatives for waste Management sets an ideal example to students for Environmental Sustainability, and consciousness.



PRINCIPAL
Padmabhushan Vasantraodada Patil
Mahavidyalaya, K. Mahankal, Dist. Sangli

A report on,

Impact Assessment of Rain Water Harvesting on Vidyanagar, Kavathe Mahankal Area.

Introduction:

The Aqua Renew Project of Padmabhushan Vasantraodada Patil Mahavidyalaya has been actively maintaining ponds on the campus since 2019 to promote groundwater recharge. This ongoing effort has positively impacted the surrounding community, as they have noticed significant improvements in the water table. To assess the project's impact, a survey was conducted across nearly 80 households in the neighborhood. The results show a notable increase in water levels, indicating the effectiveness of the pond maintenance initiative. This project not only addresses water scarcity but also demonstrates the institution's commitment to sustainable environmental practices.

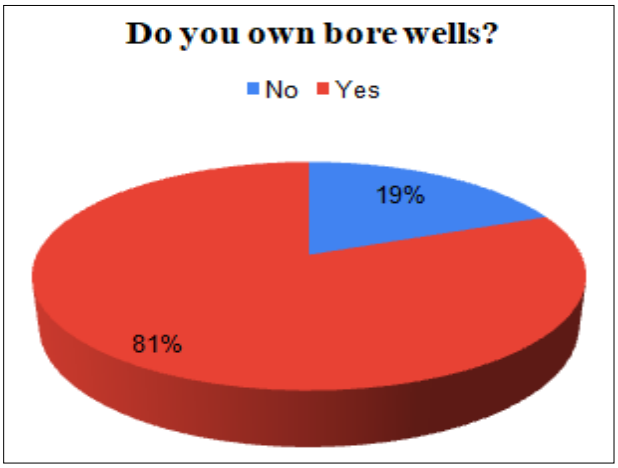
Methodology:

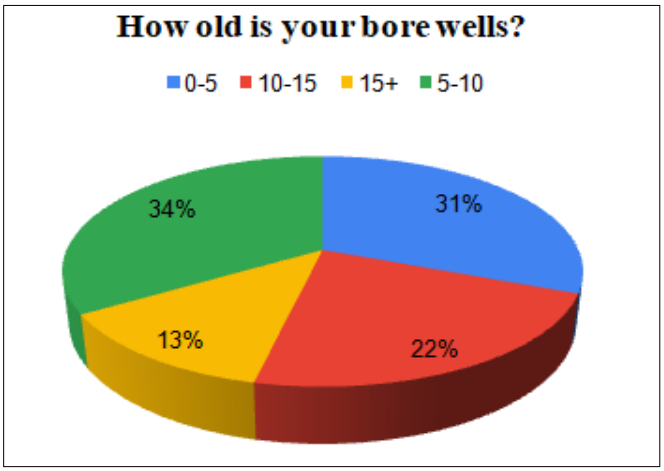
- Survey conducted across 84 households in the neighborhood
- Questionnaire-based data collection
- Responses analyzed to assess project impact and community perceptions

In this activity, we have collected feedback of the respondents. The detailed percentages of the categories are as below,

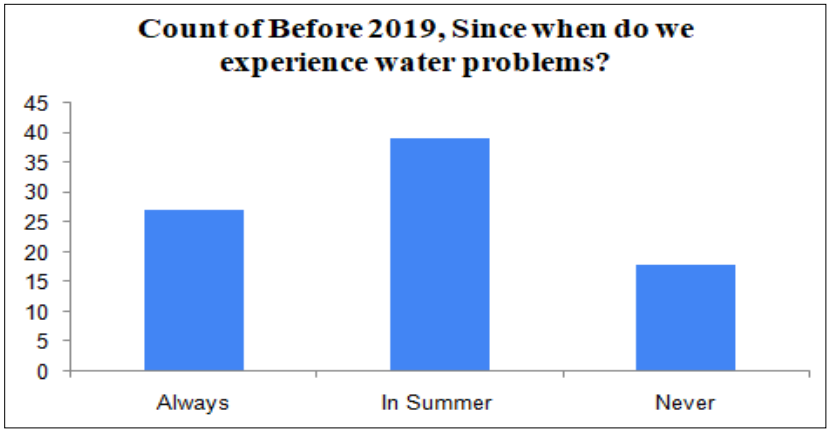
Category	**Response Percentage**
Project usefulness	85%
Increased water levels	79%
Community benefits	70%
Sustainability Maintenance	81%
Future Continuation	92%

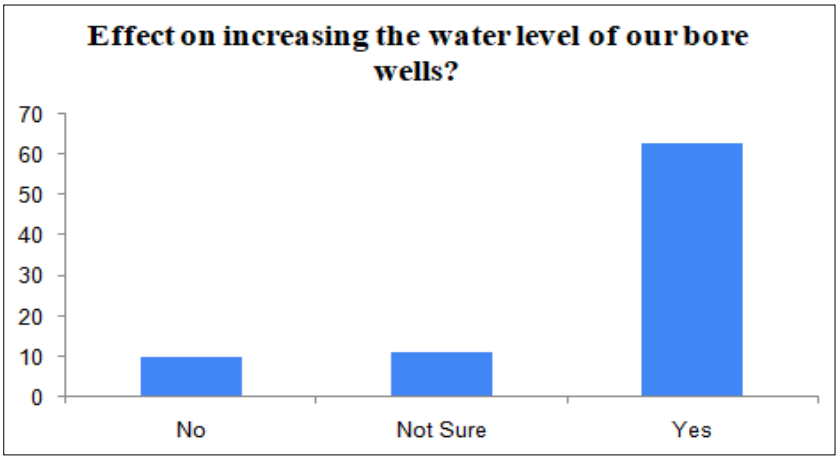
Statistical Analysis:





From the above pie charts, we can note that 81% of the households own the bore wells. Of them, most of the bore wells are more than 5 years old.





From the above bar charts, we can observe that about 79% of the households had to face the problem of lacking the water before 2019. After the program, the level of water recharge has been increased.

Key Findings:

1. Overwhelming Support: 85% of respondents found the Aqua Renew Project useful, highlighting its positive impact on groundwater recharge.
2. Increased Water Levels: 79% of respondents reported a noticeable increase in water levels since the project's inception.
3. Community Benefits: 70% of respondents acknowledged the project's benefits, including improved water availability and reduced scarcity.
4. Sustainability: 81% of respondents emphasized the need for continued initiatives like Aqua Renew to ensure environmental sustainability.
5. Future Expectations: 92% of respondents urged the continuation of this project, demonstrating community enthusiasm and support.

Conclusion:

The Aqua Renew Project has yielded tangible benefits, enhancing groundwater recharge and addressing water scarcity. The survey underscores the community's appreciation and recognition of the project's impact. The institution's commitment to sustainable environmental practices is evident, and continued efforts will further cement its reputation as a responsible and proactive stakeholder.

Recommendations:

1. Continue and expand the Aqua Renew Project.
2. Engage with the community to explore additional sustainability initiatives.
3. Monitor and evaluate project effectiveness regularly.

Head
Department of Statistics
P.V.P. Mahavidyalaya,
Kavathe Mahankal, Dist.-Sangli.



Questionnaire

We are conducting this survey to assess the impact of our college's rainwater harvesting initiative, 'Pani Adwa Pani Jirwa', on the groundwater levels in the surrounding area. Your responses will help us understand the effectiveness of this initiative and its potential benefits to the community.

1. Name and Address of Head of Household/Citizen/Resident:
   _____

2. Mobile Number:
   _____

3. Do you own bore wells?
   - Yes
   - No

4. How old is the bore well in your house?
   - o 0-5 years
   - o 6-10 years
   - o 11-15 years
   - o More than 15 years

5. Before 2019, when do you experience water problems?
   - o Always
   - o In summer
   - o Never

6. Compared to 2019, do you think our college's 'Rain Water Harvesting' initiative has had any effect on increasing the water level of our bore wells?
   - o Yes
   - o No
   - o Not sure

7. In your opinion, how important are water conservation ('Pani Adwa Pani Jirwa') measures in your area?
   - o Very important
   - o Important

o Less important
o Not important at all

8. According to you, what other water conservation measures should the college take
Answer: _____

9. Do you have any suggestions or feedback about this initiative?
Answer: _____

Thank you for participating in this survey! Your input is valuable to us.

प्रश्नावली

'पाणी अडवा पाणी जिरवा' या आमच्या महाविद्यालयाच्या रेन वॉटर हार्वेस्टिंग उपक्रमाचा आजूबाजूच्या परिसरातील भूजल पातळीवर काय परिणाम होतो याचे मूल्यांकन करण्यासाठी आम्ही हे सर्वेक्षण करत आहोत. तुमचे प्रतिसाद आम्हाला या उपक्रमाची परिणामकारकता आणि समाजासाठी त्याचे संभाव्य फायदे समजून घेण्यास मदत करतील.

1. कुटुंबप्रमुख/नागरिक/रहिवाशी नाव

   _____

2. मोबाईल नंबर:

   _____

3. आपल्या घरात बोअरवेल आहे का?
   - हो
   - नाही

4. आपल्या घरातील बोरवेल किती वर्षे जुनी आहे ?
   - 0-5 वर्षे
   - 6-10 वर्षे
   - 11-15 वर्षे
   - 15 वर्षांहून अधिक

5. 2019 च्या पूर्वी बोअरवेलला पाण्याची करमतरता जाणवत होती का?
   - नेहमीच
   - उन्हाळ्यात
   - कधीच नाही

6. 2019 च्या तुलनेत आपल्या बोरवेलची पाणी पातळी वाढण्यास आमच्या कॉलेजच्या 'रेन वॉटर हार्वेस्टिंग' उपक्रमाचा सकारात्मक परिणाम झाला आहे, असे आपल्याला वाटते का ?
   - हो
   - नाही

- खात्री नाही

7. आपल्या मते, आपल्या भागात पाणी साठवण्याच्या (जलसंवर्धन) उपाययोजना किती महत्त्वाच्या आहेत?
    - अत्यंत महत्त्वाच्या
    - महत्त्वाच्या
    - कमी महत्त्वाच्या
    - अजिबात महत्त्वाच्या नाहीत
8. आपल्या मते, कॉलेजने आणखी कोणत्या जलसंवर्धन उपाययोजना कराव्यात?
    - उत्तर: _____
9. आपल्या या उपक्रमाबद्दल काही सूचना किंवा अभिप्राय आहेत का?
    - उत्तर: _____

या सर्वेक्षणात सहभागी झाल्याबद्दल धन्यवाद ! तुम्ही दिलेली माहिती आमच्यासाठी मौल्यवान आहे.

GV/GA/05-23/ 175

Green Audit Certificate (As per Green Building Parameters)

The study is conducted as per Indian and International Green Building Standards initiated in the capacity of an Accredited & Certified Green Building Professional

It is awarded for **2021-2022 and 2022-2023** to the Esteemed Institution

(Analysed for 2 years and extended validity for 1 year, thus total 3 years)

Shikshan Prasarak Sanstha's

P. V. P. Mahavidyalaya Kavathe Mahankal

Vidyanagar, Kavathe Mahankal Tal-Kavathe Mahankal,Dist-Sangli Pin-416405, Maharashtra, India

(Site visit held on Monday, 22 May 2023)

As part of the Institution's initiatives for a Healthy & Sustainable Institute the audit was conducted.
We appreciate the immense efforts taken by Staff and students towards the Efficient Management of Premise.

Issued on **Monday, 22 May 2023** and valid till **30 April 2024**

Ar. Nahida Abdulla Shaikh
"Elite 100 Green Architects of India" Econaur, 2022
Registered Architect, P.G.D.R.D, ISO Certified I. A. (IMS)
Indian Green Building Council Accredited Professional (IGBC AP)
ASSOCHAM GEM Green Building Council Certified Professional **(Registration. No. 22/718)**

Project Head and Green Building Professional-Consultant
Sustainable Academe I Sustainability Department of Greenvio Solutions, Naigaon
An environment Design and Consultancy developing Healthy and Sustainable Environments
Email: **sustainableacademe@gmail.com** I **greenviosolutions@gmail.com**

Website: https://thegreenviosolutions.co.in/

GREEN AUDIT

STUDY PERIOD (TWO YEARS) 2021 – 2022 & 2022 - 2023

Sustainability study

AUDIT REPORT

Studied for

Shikshan Prasarak Sanstha's

P. V. P. Mahavidyalaya
Kavathe Mahankal

Vidyanagar, Kavathe Mahankal Tal-Kavathe Mahankal,
Dist-Sangli Pin-416405, Maharashtra, India

Studied in the capacity of

Accredited and Certified
Green Building Professional

Studied by

Website: https://thegreenviosolutions.co.in/
Email: greenviosolutions@gmail.com

Valid till **April 2024**

Background reference image Sasin Tipchai on unsplash

Disclaimer

The Audit Team has prepared this report for the **Shikshan Prasarak Sanstha's P.V.P.Mahavidyalaya Kavathe Mahankal** located at *Vidyanagar, Kavathe Mahankal Tal-Kavathe Mahankal,Dist-Sangli Pin-416405, Maharashtra, India* based on input data submitted by the College analysed by the team to the best of their abilities.

The details have been consolidated and thoroughly studied as per the various guidelines for Green Buildings available in National and International Standards; the report has been generated based on comparative analysis of the existing facilities and the prerequisites formulated by various standards. The inputs derived are a result of the inspection and research. These will further enhance and develop a Healthy and Sustainable Institution.

These can be implemented phase wise or as a whole depending on the decision taken by the Hon'ble Management and College. The warranty or undertaking, expressed or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

The audit is a thorough study based on the inspection and investigation of data collected over a period of time and should not be used for any legal action. This is the property of Greenvio Solutions and should not be copied or regenerated in any form.

The Report is prepared by the Team of Greenvio Solutions under their brand and department – Sustainable Academe as Consultancy firm with the Project Head - Ar. Nahida Shaikh who is as an Accredited and Certified Green Building Professional-Architect. Green Building consultancy is her forte and she is one of the most sought after names when it comes to providing excellent quality services within the stipulated time frame.

The Study is conducted in capacity of Accredited & Certified Green Building Professional with extensive experience.

Greenvio Solutions

Developing Healthy and Sustainable Environments

We are an Environmental and Architectural Design Consultancy firm

Sustainable Academe is our department for conducting Audits

Palghar District, Maharashtra- 401208

sustainableacademe@gmail.com

DETAILED REPORT

Acknowledgement

The Audit Assessment Team thanks the **Shikshan Prasarak Sanstha's P.V.P.Mahavidyalaya Kavathe Mahankal, Maharashtra, India** for assigning this important work of Green Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to **Mr. Balasaheb Aanandrao Shinde,** President; **Mr. Suresh Patil,** Vice President; **Mr. Sudarshan Balasaheb Shinde,** Secretary and everyone from the Management.

Our heartfelt thanks to Chairpersons of the entire process **Prof. (Dr.) M. K. Patil,** Principal for the valuable inputs.

We are also thankful to **College's Task force the Assistant Professors** who have collected data required - **Dr. B. T. Jadhav** and **Prof. Avinash Kamble.**

We highly appreciate the assistance of the **entire Teaching, Non-teaching and Admin staff** for their support while collecting the data.

DETAILED REPORT

Sustainable Academe
Brand of Greenvio Solutions, Palghar District, Maharashtra- 401208

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6. Water Audit 13
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8. Compilation 16

DETAILED REPORT

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

Audits covered: ☑ Green audit ☑ Energy audit ☑ Environment audit

Institute: Padmabhushan Vasantraodada Patil mahavidyalaya, Kavathemahankal, **Date:** 22/05/2023

Document objective: Inferences of the Site visit

Observations (Positive aspects)	**Suggestions** (Improvement aspects)
Green Audit	
- Rainwater harvesting is under practice, and is connected for use in chemistry lab.	- Waste management should be improved for [Plastic, E-waste, Organic & Liquid waste]
Energy Audit	
- Turbo ventilators are used for thermal comfort	- Undertake hybrid mode for alternate sources of energy - Replace with energy efficient lighting.
Environment Audit	
- Improve green cover of premises	- Lot of beautification should be undertaken for New Buildings.

Signature & round seal
Name: P.V.P. Mahavidyalaya
Designation: IQAC Co-ordinator
For the said Institute

Signature & round seal
Name: Ms. A.A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

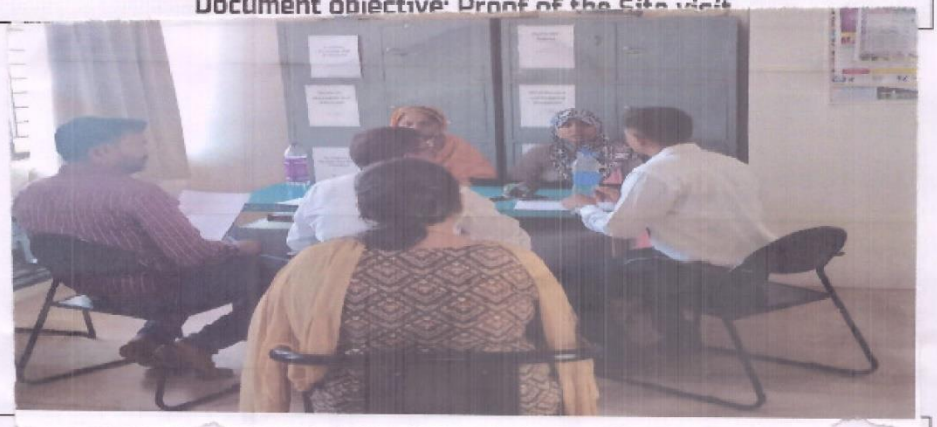
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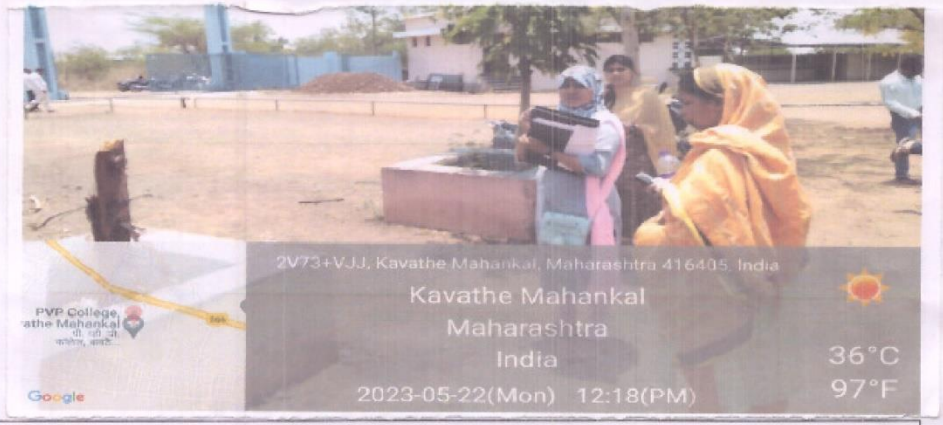
Audits covered: ☑ Green audit ☑ Energy audit ☐ Environment audit

Institute: Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathemahankal. **Date:** 22/05/2023

Document objective: Proof of the Site visit



Meeting with the core team



Investigation of the systems

Signature & round seal
Name: P.V.P. Mahavidyalaya
Designation: Asst. Co-ordinator
For the said Institute

Signature & round seal
Name: Mrs. N. A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

1. Introduction

1.1 About the Institution

This college was established in a drought prone area where most of the students come from rural area with economical background. The College firmly believes that education is incomplete without discipline. The institution is confident in making a wholesome person out of the student only by instilling in him discipline which would go to foster a high degree of righteousness in and around him. Accordingly, a disciplinary committee monitors the discipline of the institution.

1.2 Assessment of the Institute

1.2.1 Affiliations

The technical course provided by the College is affiliated to **Shivaji University,** established in 1962, a state university located at Kolhapur, Maharashtra, India.

1.2.2 Certification

The College submits its academic records every year to the **All India Survey of Higher Education (AISHE)** Govt. of India through its registered allocated code which is C-11026.

1.2.3 Recognitions

The College has upgraded in the teaching level – Under graduate to Post graduate in the **section 2(f) and 12 (B) of the University Grants Council Act, 1956 in 1994** with affiliation nos. being 8-131/93 and F.B-131/93 respectively.

1.3 Statements of the Institution

1.3.1 Vision

The College proposes *"Sanstha is committed to meet the education, social, cultural and economic needs of the region and the nation to create a just and human society."*

DETAILED REPORT

1.3.2 Mission

The College adheres and focuses *"To promote and foster a culture of high quality teaching and learning and to serve societal needs by encouraging, generating and promoting excellence in research and extension activities."*

1.3.3 Goals

The College has formulated the following aim to achieve its mission:

- *To make relentless efforts for the spread of education among classes and communities, that are socially and educationally underprivileged.*
- *To make special provision and for disseminating knowledge and promoting arts and culture in rural areas.*
- *To supervise and control the conduct and discipline of the students of the P.V.P. Mahavidyalaya and to make arrangements for promoting their health and general welfare.*
- *To create a fine band of capable youngsters with great thirst for knowledge and scientific curiosity.*
- *To promote the study and research of the Marathi language and the history of Maharashtra.*
- *To provide opportunities to the P.V.P. Mahavidyalaya community to reach his/her highest personnel and professional capability.*
- *To develop the personality and character of students by value education.*

DETAILED REPORT

2. Overview

2.1 Summarised Populace analysis for 2022-2023

2.1.1 Students data

The data (shared by the Institute) shows there were a total of **1,075 male and 653 female students.**

2.1.2 Staff data

S. No.	Type	Male	Female	Total
1	Teaching staff	30	06	**36**
2	Non-Teaching staff	31	01	**32**
Total Staff Members		**61**	**07**	**68**

Table 1: Staff data of the Institution for 2022-2023

The staff data shows the College premises had a total of **68 Staff Members.**

2.2 Summarised Populace analysis for 2021-2022

2.2.1 Students data

The data (shared by the Institute) shows there were a total of **1,172 male and 648 female students.**

2.2.2 Staff data

S. No.	Type	Male	Female	Total
1	Teaching staff	40	06	**46**
2	Non-Teaching staff	32	01	**33**
Total Staff Members		**72**	**07**	**79**

Table 2: Staff data of the Institution for 2021-2022

The staff data shows the College premises had a total of **79 Staff Members.**

DETAILED REPORT

2.3 Total College Area & College Building Spread Area

The **total site area is 10.32 acres** and the **total Built-up area of the Institute is 34,645 sq. ft.** for **an approximately 1,796 footfalls.**

2.4 Institute Infrastructure

2.4.1 Establishment

The Institute was established in **1978**.

2.4.2 Spatial Organisation

There are provisions for staircase for accessibility on the premises, whereas there are amenities such as CCTV, a first aid room, etc. The Institute is located pretty close to nature and hence has a very fresh environment which is absolutely pollution free and healthy. The Building is a Reinforced Cement Concrete (RCC) framework building.

DETAILED REPORT

3. Research

3.1 About the Green Building Study Audit

It is a systematic study of the aspects which make the Institution sustainable and healthy premises for its inhabitants.

3.2 Analysis of the Green Building Study Audit

The procedure included detailed verification as follows:

- Investigation
- Technical discussion with team
- Observations
- Inferences

3.3 Strategy adopted for Green Building Study Audit

The strategies included data collection from the admin department, actual inventory, investigation to check the operation and maintenance, analysis of the data collection, and preparation of the Report.

3.4 Activities undertaken for the Green Building Study Audit

- Discussion with the Institute
- Allotment and Initiation by the Institute
- Data collection
- Submission of the files

DETAILED REPORT

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

Audits covered: ☑ Green audit ☑ Energy audit ☑ Environment audit

Institute: Padmabhushan Vasantdada Patil mahavidyalaya, Karanmahavidyalaya **Date:** 22/05/2023

Document objective: Induction Meeting attendance sheet

S. No.	Name	Committee	Designation	Signature
1.	Mrs. F. A. Shaikh	External	Project Coordinator	
2.	Ar. Nahida Abdulla	External	Project Head	
3.	Mr. A A Kamble	Internal	IQAC. Co-ordinator	
4.	Dr. B.T. Jadhav	Internal	chairman, Cri. VII	
5.	Mr. S. B. Patil	Internal	member, Cri. VII	
6.	Mr. S. M. Sable	Internal	member, Cri. VII	
7.	Mrs. P. D. Mali	Internal	member, Cri VII	

Signature & round seal
Name: P. V. P. Mahavidyalaya
Designation: IQAC Coordinator
For the said Institute

Signature & round seal
Name: Mrs. F. A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

Evidence documents for Site visit of external audit team

Audit team headed by external expert - Ar. Nahida Abdulla
Accredited & Certified Green Building Professional, ISO IA (IMS)
Audit objective: Green Building up gradation of the premises

Audits covered: ☑ Green audit ☑ Energy audit ☑ Environment audit

Institute: Padmabhushan Vasantraodada Patil Pratishthan's College of Engineering & Management Studies **Date:** 22/05/2024

Document objective: Exit Meeting attendance sheet

S. No.	Name	Committee	Designation	Signature
1.	Mrs. F. A. Shaikh	External	Project Coordinator	
2.	Ar. Nahida Abdulla	External	Project Head	
3.	Mr. A. A. Kamble	Internal	IQAC, coordinator	
4.	Dr. B. T. Jadhav	Internal	Chairman, Cri. VII	
5.	Mr. S. B. Patil	Internal	Member, Cri VII	
6.	Mr. S. M. Sable	Internal	—11—	
7.	M&S. P. R. Mali	Internal	—11—	

Signature & round seal
Name: P V P Mahavidyalaya's
Designation: IQAC, Coordinator
For the said Institute

Signature & round seal
Name: Mrs. F. A. Shaikh
Designation: Project Coordinator
For The Greenvio Solutions

4. Green Practices Audit

The increasing global warming and climate change have made us realise that apart from the enormous strategies the individual small efforts need to be taken by individuals and Educational Institutes as the younger generations are the future of the world and once they are taught about these practices only then can we assume a better future.

4.1 Green practices

We observed the following points during the Site investigation and data verification of the premises; these are common for all the Buildings on the premises.

- **Social awareness** - *The College has taken up awareness drives on various social issues for rural upliftment and regeneration in the College and surrounding villages.*
- **Fresh environment** – *The College provides an eco-friendly ambience with fresh air and soothing environment which helps to maintain a physical and mental balance. This kind of a space it a must for an educational specially technical institute which is inviting and gives the stakeholders an opportunity to explore indoor and outdoor learning to a great extent.*
- **Team work** – *The best quality of the College which sets it apart is its coordinating, cooperative staff members; for a building the foundation plays the most important role for its future similarly for an educational institute its staff members do.*

4.2 Community development

The College conducts environmental initiatives documented as follows:

S. No.	Name of the event	Particulars	Date
		Academic year 1	
1	Bhujal Saksharata din	Awareness of water conservation	09-07-2021
2	Tree Plantation under title of Mazi Vasundhara	Tree Plantation for environmental Awareness	15-07-2021
3	NSS camp	For promotion of different environmental activities	23 to 29/03/2022

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4	Commendable River Cleaning	For water conservation and decrease in water pollution	05-06-2022
Academic year 2			
6	*Swarajya Mahotsav campus cleaning activity*	To create awareness and importance of cleanliness and hygiene	10-08-2022
7	*Swarajya Mahotsav Rally*	To create environment Awareness	18-08-2022
8	*NSS camp*	For promotion of different environmental activities	22 to 28/02/2023

Table 3: Details of the events undertaken by the Institute

4.3 Section-wise recommendations related to 'Green practices'

The following suggestions are to be considered as a ***first priority*** for implementation. These **should be executed within the next 1.5 to 2.5 years from the date of the Report submission.** The Institute can execute a plan after discussion with Project Head.

- **Plant as a gift -** As a kind gesture, the guests visiting the premise can be asked to plant a small plant on the premise itself and they can be even given plants/bouquets from the flowers of the plants on the premise as a gift.
- **Environmental awareness -** There can be various artworks on the compound wall giving the message of saving the environment through the joint efforts of the students and staff thereby making the student socially and environmentally responsible citizens.
- **Documentation** – Improve and increase the documentation and visibility/ reflectance of the environment related events on the website, social media handles

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5. Waste Audit

Waste is an inevitable part of our lives. Over the years the awareness about waste management techniques has given a rise to rethink how the waste can be avoided being sent to the landfills. The audit provides an approximation of the types of waste generated, location of waste collections, disposal techniques used, waste segregation methodologies adopted, and waste management strategies that are implemented in addition to the newer ways that can be adopted aiming to make the premise clean and sustainable.

5.1 Waste produced

- ***Solid waste management*** *different bins have been placed at different departments, wings and floors. The institution ensures that solid waste is segregated at the source and properly disposed. It is also ensured that it is deposited to the Municipal Garbage Collection Van on time again and again*
- ***Organic waste*** *a vermi compost plant is maintained by botany department*
- *Liquid wastes generated by College are of two types*
    - *1. Sewage waste The above waste is collected in soak pits.*
    - *2. Laboratory waste*
- *The above waste is collected in soak pits.*
- ***Laboratory waste*** *generated in separate soak pit in backside of chemistry department*
- ***Toxic wastes*** *from laboratories are disposed under the observation of laboratory experts*
- *Memory chips, mother board, compact disk, cartiges etc. generated by electronic equipments such as computers, phones, printers, fax and photocopy machines are recycled properly. The* ***E-waste*** *generated from hardware which cannot be reused or recycled is being disposed of centrally through governments authorized vendors.*
- ***Plastic*** *is banned in the institute*

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5.2 Bins summary

There are 9 dustbins inside the premises and 2 in the outdoor areas; these are available in the form of plastic bins.

5.3 Section-wise recommendation related to 'waste audit'

The following suggestions are to be considered as a ***first priority*** for implementation. These **should be executed within the next 1.5 to 2.5 years from the date of the Report submission.** The Institute can execute a plan after discussion with Project Head.

- **Twin Dual Litter Dustbin Bins -** There should be more number of dual litter dustbins at various locations in areas such as Canteen, and open spaces. This would inculcate the awareness of waste segregation among students.

- **Signages -** Messages about avoiding wastage should be placed at appropriate locations.

- **Dustbins at every 100m -** There should be a dustbin at every 50-100 in the open spaces

- **Material of the dustbin -** The current plastic dustbins should be replaced with eco-friendly material.

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6. Water Audit

Water is one of the basic needs. Pure drinking water is a resource that needs to be preserved efficiently. A water audit helps to identify the sources of water consumption, and the water requirement by the premises is met by these sources.

6.1 Water availability and consumption

6.1.1 Source of Primary water supply

The College requires water from the Local Municipality for drinking water purposes; the details of the same are documented below:

S. No.	Type	Size	Capacity (litres)	Nos.	Location
1	Overhead	5x5x2	45,000	3	Annex, library
2	Fire tank	5 litre	5 litre	5	Chemistry Lab.
3	RO Plant	1,000 litre	1x 100 litre 10x 7 litre	8	All over the campus

Table 4: Details of the water tanks in the premises

6.1.2 Source of Secondary water supply

The College uses the secondary sources of water supply for general usages such as watering plants, kitchen, toilets, and wash basins connected to the labs and other spaces. **At present, there is one bore well available in the premises as secondary sources of water supply.**

6.1.3 Source of Tertiary water supply

The tertiary source of water is the additional source of water harvesting. *There are dedicated pits available for rain water harvesting 10x20x5 feet with a capacity of 1,00,000 litres and another pit of capacity 5,000 litres.*

6.1.4 Source of Reusing waste water

The initiative is not under practice at present completely only the chemicals are neutralized before letting it down in the drains. *We have suggested to under practices of*

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green chemistry as per discussion to treat the waste water from the laboratories and reused the same after filtering for watering the plants and the trees in the premises.

6.2 Areas of water usage

Based on the inventory done and data shared by the staff it was found that the premise has the following facilities:

Particulars	Nos.
General toilet for students	2
General toilet for staff	3
Special Toilet for handicaps 1.5m x 2.5m	1
Urinals	90
Taps in laboratories	59
Taps in wash basins in toilets	18
Taps in Canteen	1
Taps in the garden	4

Table 5: Details of the water usages in the premises

As per the data shared by the College and on-site observation, it was noted that there is no water wastage of water in the form of Cleanliness of toilets.

6.3 Recommendations for a Sustainable Habitat

The following suggestions are to be considered as a ***first priority*** for implementation. These **should be executed within the next 1.5 to 2.5 years from the date of the Report submission.** The Institute can execute a plan after discussion with Project Head.

- **Rain water bunds –** There should be landscape beautification project undertaken to appropriate channelize the rain water through bunds and similar facilities.
- **Waterless urinals -** There can be the provision of waterless urinals as a Green Building initiative in the premise, either the existing ones can be replaced with such a facility or new toilets can be constructed in this manner.
- **Signages -** Messages about avoiding water wastage should be placed at appropriate locations.

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7. Health and Hygiene Audit

The hygiene is a part and parcel of our daily life. It is extremely essential to keep the surroundings clean in the same manner as we would want our houses to be. Educational Institutes have a bigger role to play in order to affect the young minds in the positive manner through better hygienic practices.

7.1 Facilities available

The Institution has washroom facility, hand wash, drinking water and dustbin facilities.

7.2 Hygiene

- There was no odour issue faced during the investigation.
- The areas of water tanks in site on ground floor are clean

7.3 Section-wise recommendation related to 'Health and hygiene audit'

The following suggestions are to be considered as a ***first priority*** for implementation. These **should be executed within the next 1.5 to 2.5 years from the date of the Report submission.** The Institute can execute a plan after discussion with Project Head.

- **Courtyards and duct areas** – These are located in the internal and setback should have vertical gardens for beautification.
- **Health related provisions** – There should be provisions for a dedicated health centre and 24x7 available ambulance services inside the premises.
- **Avoid burning waste -** The waste produced on the premises should not be burned as it is dangerous to the health of students and staff
- **Signboards** – The Institute should have multiple signboards about 'No smoking' and 'Healthy premises' at every nook and corner of the Institute.
- **Compound wall** – The compound wall should have awareness messages about 'No Smoking' and 'No Tobacco'

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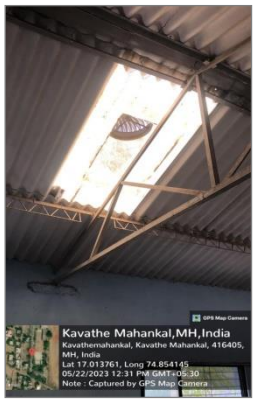




On-site investigation of the Old campus







On-site investigation of the internal spaces





Details about the various types of dustbins and the oxygen park





Rain water harvesting facility in the premises

8. Compilation

The study is based on the data collected, analysed, rechecked, and confirmed through multiple modes. For the quality study, some standards/ notes have been referred to. These are listed and noted below. However, no direct references have been used anywhere. These are used as a base to analyse and study the data collected.

- Uniform Plumbing Code – India, 2008
- IGBC Green Existing Buildings – Operation & Maintenance (O&M) Rating system, Pilot version, Abridged Reference Guide, April 2013
- IGBC Green Landscape Rating system, March 2013
- BOMA Canada Waste Auditing Guide, Best Environmental Standards, BOMA BEST – Canada
- Used only for understanding Universal design - Universal Accessibility Guidelines for Pedestrian, Non-motorized vehicle and Public Transport Infrastructure – Report guidelines by Samarthyam (National center for Accessible Environments) – an initiative supported by Shakti Sustainable Energy Foundation and www.umassd.edu
- The city of Cheyenne, Streetscape/ Urban Design elements - Wyoming Planning Association, Gillette, Wyoming, United States
- Images on site by Coordinators of the both teams
- Icon images used by https://www.vecteezy.com/free-vector/security-camera-icon and https://www.vecteezy.com/free-vector/electric-car-icon

DETAILED REPORT

SAHYAGIRI ENTERPRISES

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Green Audit
Certificate

This is to certify that the Sahyagiri Enterprises has conducted detailed green audit report of **Padmabhushan Vasantraodada Patil Mahavidyalaya** during academic year 2020-2021 to assess the green initiative planning, efforts, activities implemented in college campus like plantation, water management, waste management, rain water harvesting, energy management, biodiversity conservation and various environmental activities. This green audit is also aimed to assess impact of green initiative for maintenance of the campus.

The college has submitted necessary data and credentials for scrutiny. The efforts taken by the management, faculty and students towards environment and sustainability are highly appreciated.

Green Audit In charge

SAHYAGIRI ENTERPRISES PRIVATE LIMITED

DIRECTOR

GREEN AUDIT REPORT (2020-2021)

Shikshan Prasarak Sanstha's

PADMABHUSHAN VASANTRAODADA PATIL MAHAVIDYALAYA, KAVATHE MAHANKAL



Prepared By

SAHYAGIRI ENTERPRISES

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1.0 ACKNOWLEDGEMENT

Sahyagiri Enterprises Green Audit Team thanks the management of Padmabhushan Vasantraodada Patil Mahavidyalaya for assigning this important work of Green Audit. We appreciate the co-operation to our team for completion of study.

Our special thanks to:

- Principal of the college – Prof.Dr. M. K. Patil
- IQAC Head – Mr. A.A.Kamble
- IQAC Member –Dr. V. D. Kamble
- Environment Expert at the campus – Prof. Dr. S. B. More
- Green Audit coordinator & Associate professor – Dr. B. T. Jadhav
- Teaching & Supporting Staff of College

For giving us necessary inputs to carry out this very vital exercise of Green Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

2.0 DISCLAIMER

Sahyagiri Enterprises Green Audit Team has prepared this report for Padmabhushan Vasantraodada Patil Mahavidyalaya based on input data submitted by the representatives of College complemented with the best judgment capacity of the expert team.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

Sahyagiri Enterprises and its staff shall keep confidential all information relating to your organisation and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies. Sahyagiri Enterprises staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.



Report by: Mayuri M. Jadhav

3.0 CONCEPT

Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyse environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit. 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.

4.0 INTRODUCTION

A Nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now days are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, water harvesting etc. The activities pursued by colleges can also create a variety of adverse environmental impacts.

Environmental auditing is a process whereby an organization's environmental performance is tested against its environmental policies and objectives. Green audit is defined as an official examination of the effects a college has on the environment. As a part of such practice, internal environmental audit (Green Audit) is conducted to evaluate the actual scenario at the campus.

Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. Green auditing and the implementation of mitigation measures is a win-win situation for all the college, 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 promote financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

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.



Environmental Management Systems (EMS) is very popular in the industrial sector, but the general belief is that EMS is

something pertaining to industries only. Other parts of the world have started adopting compatible environmental management systems either voluntarily or for promoting standards by external certification. International environmental standards do not suit the existing Indian educational system. Hence EHS Alliance has developed a compatible system by developing locally-applicable techniques.

A very simple indigenized system has been devised to monitor the environmental performance of educational institutions. It comes with a series of questions to be answered on a regular basis. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance.

This innovative scheme is user-friendly and totally voluntary. The environmental monitoring system helps the institution to set environmental examples for the community and to educate young learners. It can be adapted to urban and / or rural situations.

5.0 OVERVIEW OF INSTITUTE

Padmabhushan Vasantraodada Patil Mahavidyalaya was established in 1978 in Kavathe Mahankal tahsil which is drought porn area. Most of the students come from rural area with economical backward, family background. This college is Affiliarted to Shivaji University Kolhapur. Institute has 11 Acre campus area. Founder Chairman Mr. Anandraodada Shinde took lots of efforts to build this institute for the rural area students.

The college, right from its inception has shown academic excellence and students have won meritorious awards and have maintained top ranks in the university examinations as well as in extra-curricular activities. Padmabhushan Vasantraodada Patil Mahavidyalaya is having graduate departments of full-fledged Arts, Commerce and Science. Total Student strength of college is 1820. College has total 46 teaching staff and 33 non-teaching staff. College has highly qualified staff and well equipped laboratories.

The infrastructure of a college plays a vital role in the development of the college as the students are now focusing on the labs, class rooms, etc. while selecting a college. It is important that the college has very good infrastructure with ICT Based Classrooms, Classrooms with White Board, Specious Computer Labs, I.Q.A.C Department, N.S.S. Office, Separate Canteen, Indoor Sport Hall, Playground and Store Rooms etc. College has huge playground. Various indoor and outdoor games are conducted by college.

The college has also adopted the 'Green Campus' system for environmental conservation and sustainability. The goal is to reduce CO_2 emission, water use while creating an atmosphere where students can learn and be healthy.



6.0 AUDIT OBJECTIVES AND SCOPE

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. The main objectives of carrying out Green Audit are:

- To introduce and aware students to real concerns of environment and its sustainability.
- To secure the environment and cut down the threats posed to human health by analysing the pattern and extent of resource use on the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requires high cost.
- Developing an environmental ethic and value systems in young people.
- Improving environmental standards.
- Benchmarking for environmental protection initiatives.
- Enhancement of College profile.

7.0 EXECUTIVE SUMMARY

The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development.

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes out-dated unless there is some mechanism in place to continue the effort of monitoring environmental compliance.

Padmabhushan Vasantraodada Patil Mahavidyalaya already done internal green assessment and annual reports published for continual improvements; QS Programme and doing their bid towards environmental protection and environmental awareness at local and global front.

The methodology include: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. It works on the several facets of 'Green Campus' including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity.

This audit report contains observations, appreciations and recommendations for improvement of environmental consciousness.

8.0 METH0DOLOGY

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

- Waste Management
- Energy Conservation
- Water Conservation
- Green area management/biodiversity survey
- Noise, Ventilation and Illumination study
- Best Practices for Environment

9. 0 OBSERVATIONS, APPRECIATIONS AND RECOMMENDATIONS

9.1 WASTE MANAGEMEN

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.

A) Observations:

The total organic waste collected in the campus is 4 kg/day. Waste generated from canteen and garden is a major solid waste in the campus. Near about 1 kg/day of non-biodegradable waste is generated in the campus including glass bottles and 20-25 lit/day chemical waste is generated from laboratories. The waste is not segregated at source by providing separate dustbins for Bio-degradable and Non-Bio-degradable waste. Single sided used papers reused for writing and printing in all departments. Very less plastic waste (0.1 kg/day) is generated by departments, office, garden etc. but it is neither categorized at point source nor sent for recycling. The food waste from canteen is sent for composting. The institute has adopted one composting unit in campus having area 3 square meters. The main purpose of this is to breakdown & decomposes all kind of organic waste to create humus, a rich nutrient-filled material called compost. After complete process of composting, it is used as manure in the garden.



Composting Unit



Campus is well equipped with small dustbins



Dustbins are provided in the campus

B) Appreciations:

- Each and every place of campus is provided with dustbin.
- E-waste is collected and supplied to E-waste management and disposal facility in order to dispose E-waste in scientific manner.

C) Recommendations:

- Provide separate dustbins with colour coding for dry and wet waste.
- Proper system should be provided for laboratory waste.
- Make full use of all recycling facilities provided by City Municipality and private suppliers, including glass, cans, plastic bottles, batteries, print cartridges, cardboard and furniture.
- Provide sufficient, accessible and well-publicized collection points for recyclable waste with responsibility for recycling clearly allocated.
- Important and confidential papers after their validity to be sent for pulping.

9.2 WATER CONSERVATION

This indicator addresses water consumption, water sources, irrigation, storm 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.

A) Observations:

The study observed that Bore Well water is main sources of water for the campus. Water is used for drinking, canteen, toilets, laboratory and gardening purpose. During the survey, loss of water is observed by leakages only and not by 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 5,000 L/day, which include 1,000 L/day for domestic purposes, 3,000 L/day for gardening and 1,000 L/day for different laboratories. Each department has small R.O system. The college has rain water harvesting facility in a campus, and the water from the tank is used for laboratory purpose. So, the College has saved approximately 4000 lit water per year. The total amount of water consumption is reduced by this facility. Water used for drinking purpose analyzed as per IS 10500:2012 drinking water specification and observed it was potable**.**



R.O. System



Reuse of R.O. rejected water



Rain Water Harvesting System

Water Sample Analysis Report

Sr. No.	Parameters	Results	Acceptable Limit as per IS 1O5OO: 2012	Units
1.	Colour	< 1	Max. 5	Hazen Units
2.	Odour	Agreeable	Agreeable	-
3.	pH	7.06	6.5-8.5	-
4.	Turbidity	0.6	Max. 1	N.T.U.
5.	Total Dissolved Solids	100	Max.5OO	mg/L
6.	Calcium (as Ca)	18	Max.75	mg/L
7.	Chloride (as Cl)	21	Max.25O	mg/L
8.	Magnesium (as Mg)	5	Max. 30	mg/L
9.	Alkalinity (as $CaCO_3$)	28	Max.2O0	mg/L
10.	Total Hardness (as CaCO3)	54	Max.2OO	mg/L
11.	E. coli	Absent	Not Detectable	/100 ml

B) Appreciations:

- Water is properly used in the campus and water reusing strategy is followed by the college.
- Campus has department wise small R.O. system for drinking water.
- R.O. reject water is reused for gardening purpose.
- Rain water harvesting is properly managed by collecting rain water from roof top of college and it is used for laboratory purpose.

C) Recommendations:

- Installation of commercial R.O. system for students in campus is necessary.
- Year wise water consumption report.
- Provide proper waste water treatment in the campus.

9.3 ENERGY CCONSERVATION:

A) Observations:

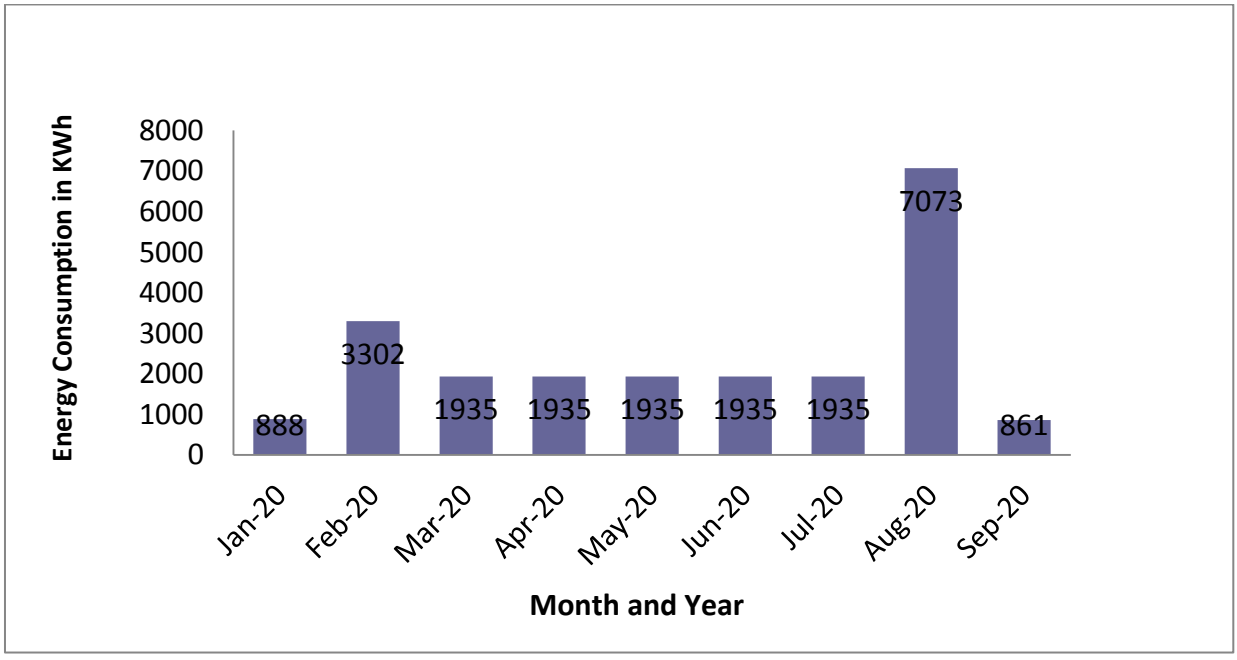
This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

Energy source utilized by all the departments and common facility center is electricity only. Maximum energy consumption is by major energy consuming equipment. College hostel has solar water heater.

All the departments and common facility centers are equipped with CFL lamps. Approximately 85 computers, 10 printers, 02 bulbs, 210 tubes, 71 fans and 6 projectors these all are observed during the

survey. Equipment like Computers is used with power saving mode. Also, campus administration runs switch-off drill on regular basis.

The campus imports electricity from Maharashtra State Electricity Distribution Co. Ltd. The total electricity that was imported by the college during the year 2020 is as shown below. Total 9 month's energy consumption of the campus is presented below for the year 2021. The graph shows that institute requires more electricity and it costs too much. If instate install solar panels then it will saves electricity charges.



Recommendations:

- Installation of LED lamps instead of CFL is necessary because CFL consumes maximum energy and it is observed that college has maximum CFL lamps.
- Installation of roof top solar panels is necessary.

9.4 GREEN AREA MANAGEMENT/BIODIVERSITY SURVEY

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

A) Observations:

To create- green cover, eco-friendly atmosphere, pure oxygen at the college campus, plantation program is organized every year with involving all students, principal and all departments faculty members.

Campus is located in the vicinity of approximately 15 (species) of trees, 31 (species) of shrubs, 34 (species) of herbs and 7 (species) of aquatic plants. Approximately 15 species of birds, 5 species of

mammals and 4 species of reptiles are found in the campus. Various tree plantation programs are being organized during the month of July and August at college campus and outside the college campus. This program helps in encouraging eco-friendly environment which provides pure oxygen within the institute and awareness among students and staff members. The plantation program includes plantation of various type of indigenous species of ornamental and medicinal as well as wild plant species under the biodiversity and ecological survey. The Institute has a policy of gift a plant to guests in any program. It is a good thing for environment.







Green Campus

B) Appreciations:

- Appreciate that the college has well developed Botanical Garden, Oxygen Park, Garden and lawns.
- Appreciate that the college has variety of trees, bushes, shrubs, herbs and aquatic plants.

- Appreciate that college celebrates 5th June as 'Environment Day', every year and plant trees on this day to make the campus Greener.

C) Recommendations:

- Review periodically the list of trees planted in the campus, allot numbers and names to the trees and keep records. Give scientific names to the trees.
- Try to plant more trees in the campus.
- Promote environmental awareness as a part of course work in various curricular areas, independent research projects and community services.
- Ensure that an audit is conducted annually. And action is taken on the basis of audit report and recommendation and findings.

9.5 NOISE, VENTILATION AND ILLUINATION MONITORING

1. Noise Study:

The noise levels measurements were carried out using Noise level meter. The Noise level survey was carried out at two locations, at outside as well inside the study area campus. The major source of noise identified in the study area has been predominantly the vehicular movement and the transportation activities.

Location	Time	1	2	3	4	5	Noise Level Readings dB (A)
Outside	**11:25**	58	54	60	61	65	59.6
	12:25	60	62	65	60	59	61.2
Inside	**01:15**	55	60	62	57	66	60
	02:15	60	55	70	58	67	62
As per The Noise Pollution (Regulation & control) Rules, 2ooo (Rules 3(1) and 4(1))							

Area Code	Area Type	Limits in dB(A) weighted scale	
		Day (6 a.m. to 10 p.m.)	Night (10 p.m. to 6 a.m.)
B	Commercial	65	55

All results of Noise level monitoring (Inside & Outside) found within limits as per the Noise Pollution (Regulation & control) Rules, 2000.

2. Ventilation Study:

The ventilation study was carried out by using anemometer. The study was carried out in classroom.

Sr. No.	Name of Location	Temperature (^{o} c)	Air velocity (m/s)
1.	Classroom	23	0.4

Observation:

All results of ventilation study (classroom) found within limits as per Factory Act 1948, Rule 22-A.

3. Illumination Study:

The Illumination Study was carried out using Lux meter. And it was carried out in classroom.

Sr. No.	Location	Time	Lux Level Reading (LUX)				Average Lux
			1	2	3	4	
1.	Classroom	12:30	300	310	315	298	305.75

Observation:

All results of Illumination Study (Classroom) found within limits as per MF Rules-Section-35, Schedule B

10. BEST PRACTICES FOR ENVIRONMENT

1. **Biodiversity Conservation:**

♣ They have green campus which provides habitat to various species.

♣ They maintain flora and fauna in the campus.





2. Tree Plantation Drives

♣ Periodically the plantation drives conducted by students and staff of campus.

♣ Every Guest is honoredby tree plantation at campus.

♣ World Environmental Day, Wetland Day, Ozone Day etc. Celebrated by students and staff every year.





3. Solid Waste Management

- Different mechanisms for proper disposal of biodegradable, non-biodegradable and MSW are implemented in campus.
- Cleanliness drives are arranged by college.



4. Water Conservation

- Water saving push taps fitted in the drinking water zone and the toilets to avoid the wastage of water.
- Drip irrigation system is applied through the campus for watering plants, and it saves water.
- Rain water is collected through small canals around the campus which increases the underground water level.





11. OVERALL RECOMENDATIONS

- Formation of Environment Policy and communicated to all faculties and other staff members.
- Environmental Monitoring i.e. (Ambient Air Quality monitoring, Monitoring of DG set, Water monitoring) need to be conducted by approved laboratory with frequency of six month.
- Reduction in use of paper work by go digital system.
- Need of installation of roof top solar panels.
- Increase in Environmental promotional activities for spreading awareness at campus.
- As practically feasible avoid use of personal vehicles inside the campus.



12. CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. The Padmabhushan Vasantraodada Patil Mahavidyalaya has Environmental Committee for sustainable use of resources. The audit has identified several observations for making the campus premise more environmental friendly. The recommendations are also mentioned with observations for campus team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective. The paperless work system, green campus management, solid waste management, composting unit and rain water harvesting these practices are noteworthy.

As part of green audit of campus, we carried out the environmental monitoring of campus which includes Illumination, Noise level, Ventilation monitoring and Water Testing which is used for drinking purpose in the campus. It was observed that Illumination and Ventilation is adequate considering natural light and air velocity present. Noise level in the campus is well within the limit i.e. below 65 dB at day time. Drinking water also analyzed and found it was potable.

There are some major observations and they are installation of solar panels, and installation of commercial R.O system in campus is necessary, laboratory waste management is necessary, wastewater treatment is necessary. And few minor things are important to initiate urgently are waste management records by monthly inventory, water balance cycle and periodic inspection of buildings housekeeping and environment policy.



Shikshan Prasarak Sanstha's

Padambhushan Vasantraodada Patil Mahavidyalaya

Kavathe Mahankal, Dist- Sangli

Department of Botany

REPORT OF

OXYGEN PARK



INTRODUCTION

The concept of oxygen parks is based on the idea of creating dense mini forest areas that meet the oxygen needs of the local people. Oxygen park is land that produces oxygen and sequester carbon in an urban area. Urban areas are one of the largest producers of carbon and have the most urgent need for oxygen parks. The trees are planted based on the region's oxygen emission levels and people's needs. “Oxygen Park” is maintained in the campus where more oxygen release plants are planted and allowed to grow wild in the natural environment. The campus has 45 species of trees. This park 10534 square meter in college campus is the space in the area.

OBJECTIVES

- **Increase green cover through tree plantation.**
- **Improve ecological stability, air quality, and climate change mitigation.**
- **Nature connection: The park helps visitors and students reconnect with nature.**
- **Green lung: The park acts as a "green lung" for the campus and learning quarter.**
- **Landscape: The park creates a verdant landscape for people to walk and rest.**

LIST OF PLANTS

1	B.N.- *Syngonium podophyllum* Schott Family- Araceae V.N.- Syngonium
2	B.N.- *Ficus benghalensis* L. Family- Moraceae V.N.- Vad
3	B.N.- *Ficus religiosa* L. Family- Moraceae V.N.- Pimpal
4	B.N.- *Ficus recemosa* L. Family- Moraceae V.N.- Umbar
5	B.N.- *Nephrolepis obiterata* (R.Br.) J.Sm. Family- Nephrolepidaceae V.N.- Niche
6	B.N.- *Santalum album* L. Family- Santalaceae V.N.- Chandan
7	B.N.- *Chamaedorea elegans* Family- Arecaceae V.N.- Palm
8	B.N.- *Gerbera jamesonii* Bolus ex Hooker f. Family- Asteraceae V.N.- Gerbera
9	B.N.- *Adenium obesum* Forssk Family- Apocynaceae V.N.- Adenium
10	B.N.- *Centella* sp. (L)Urban Family- Apiaceae V.N.- Bramhi
11	B.N.- *Ficus pumila* L. Family- Moraceae V.N.-Wagh nakhi
12	B.N.- *Acampe praemorsa* L. Family- Orchidaceae V.N.- Orchid
13	B.N.- *Salvinia* sp. L. Family-Salviniaceae V.N.- Salvinia
14	B.N.- *Dracaena* sp. hort. Family-Asparagaceae V.N.- Dracaena
15	B.N.- *Aglaonema* sp. Schoot Family- Araceae

	V.N.- Aglaonema
16	B.N.- *Asparagus sprengeri* Family- Asparagaceae V.N.- Shatavari
17	B.N.- *Piper betle* L. Family- Piperaceae V.N.- Maghai Paan
18	B.N.- *Nyctanthes arbor-tristis* L. Family- Oleaceae V.N.- Prajakta
19	B.N.- *Euphorbia milii* Des Moul. Family- Euphorbiaceae V.N.- Crown of thorns
20	B.N.- *Allamanda blanchetii* A.DC. Family- Apocynaceae V.N.- Allamanda
21	B.N.- *Polyalthia longifolia* Sonn. Family- Annonaceae V.N.- Ulta ashok
22	B.N.- *Nymphaea* sp. Family- Nymphaeceae V.N.-Kamal
23	B.N.- *Bambusa vulgaris* Schrad Family- Poaceae V.N.- Bamboo
24	B.N.- *Pedilanthus tithymaloides* L. Family- Euphorbiaceae V.N.- Pedilanthus
25	B.N.- *Furcraea foetida* L. Family-Asparagaceae V.N.- Kekti
26	B.N.- *Ocimum sanctum* Linn. Family- Lamiaceae V.N.- Tulas
27	B.N.- *Mussaenda erythrophylla* Thonn. Family- Rubiaceae V.N.- Mussaenda
28	B.N.- *Pilea microphylla* L. Family- Urticaceae V.N.- Pilea
29	B.N.- *Sensevieria* sp. Family-Asparagaceae V.N.- Sensevieria
30	B.N.- *Sensevieria trifasciata* Family- Asparagaceae V.N.- Snake Plant

31	B.N.- *Euphorbia pulcherrima* Family- Euphorbiaceae V.N.- Raktparni
32	B.N.- *Epiphyllum oxypetalum* Family- Cactaceae V.N.-Queen of Night
33	B.N.- *Dieffenbachia* sp. Family- Araceae V.N.- Dieffenbachia
34	B.N.- *Piper nigrum* L. Family- Piperaceae V.N.- Kali miri
35	B.N.- *Opuntia* sp. Family- Cactaceae V.N.- Nivdung
36	B.N.- *Furcraea foetida* L. Family- Asparagaceae V.N.- Kekti
37	B.N.- *Epipremnum aureum* Family- araceae V.N.- Money plant
38	B.N.- *Eichhornia crassipesn* Mart. Family- Pontederiaceae V.N.- Kendal
39	B.N.- *Chara* sp. L. Family- Characeae V.N.- Chara
40	B.N.- *Typha* sp. L. Family- Typhaceae V.N.- Pankanis
41	B.N.- *Marsilea quadrifolia* L. Family- Marsileaceae V.N.- Marsilea
42	B.N.- *Ficus elastica* Roxb. Family- Moraceae V.N.- Rabar plant
43	B.N.- *Dypsis decaryi* (Jum.) Beentje & J.Dransf. Family- Arecaceae V.N.- Trikon Palm
44	B.N.- *Cycas revoluta* Thunb. Family- Cycadaceae V.N.- Cycas
45	B.N.- *Plumeria alba* L. Family- Apocynaceae V.N.- Chafa

PHOTOGRAPHS



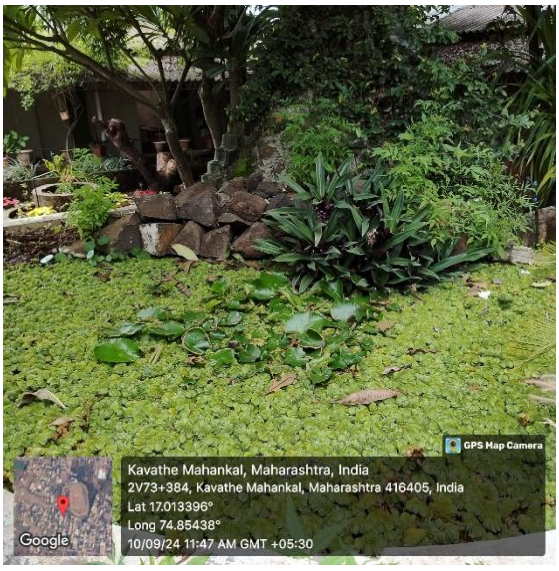
Bonsai Trees



Bonsai Trees



Creare landscape attractive elements



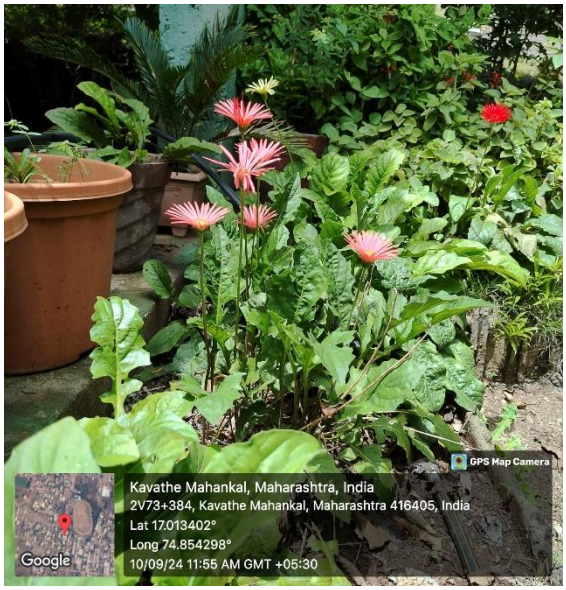
Aqutic plant



Water loving plants around small pound



To create a micro climate



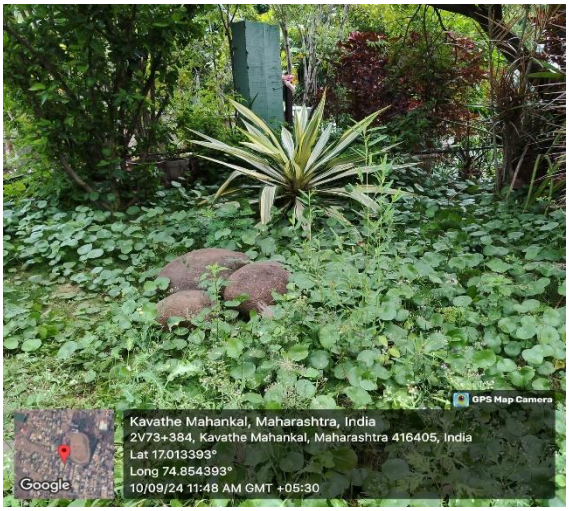
Flower beds



Maintain Orchid plants



To create a landscaped pathway



To enchase the sense of beauty

CONCLUSION

The idea of the Oxygen park is to introduce a green ling in education campus, inviting students and visitors alike to refresh their mind, body and explore the symbiotic relationships between oxygen, plant, and healthy purified living. Oxygen park environmental conditions to deepen existing knowledge about sustainable specification. The findings affirmed that oxygen park relies on the promoting of the health and well being through sustainable urban design qualities.

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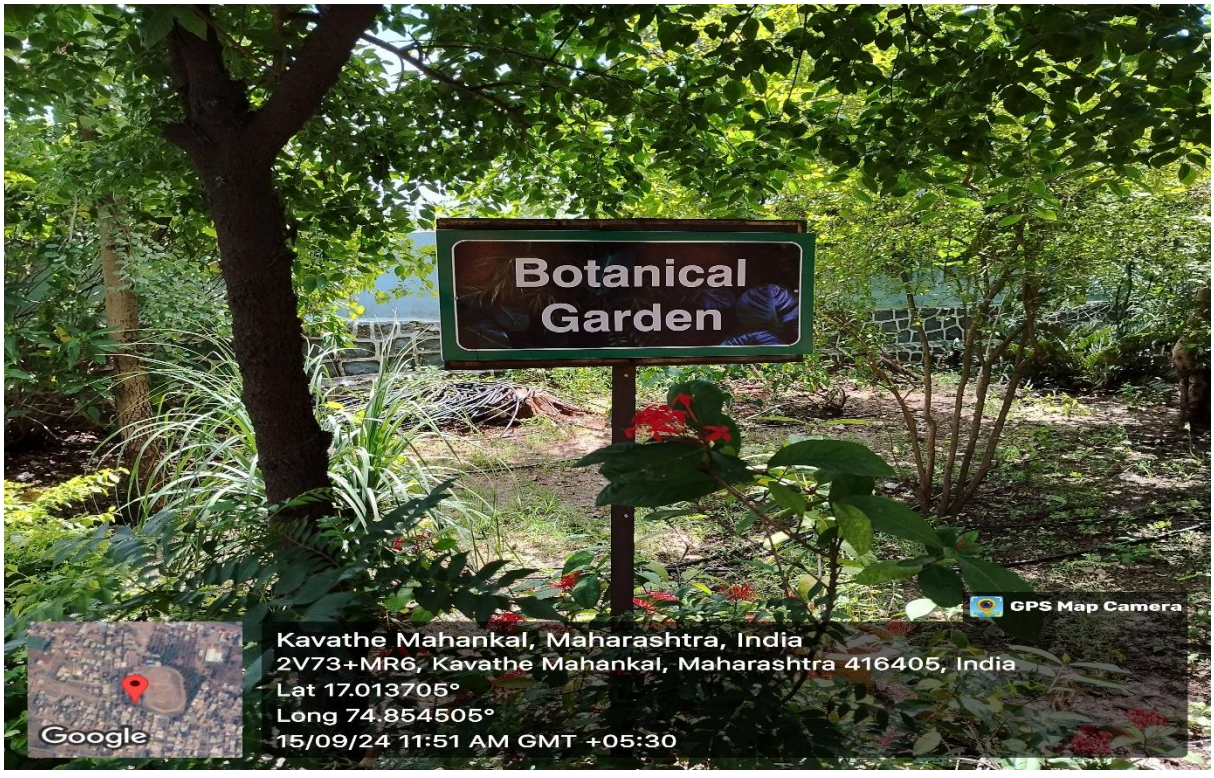
Padambhushan Vasantraodada Patil Mahavidyalaya

Kavathe Mahankal, Dist- Sangli

Department of Botany

REPORT OF

BOTANICAL GARDEN



INTRODUCTION

Department of botany established in the year of 1989. Department targets at providing an environment that encourages, promotes and stimulates the intellectual. professional and personal development of the student. The curriculum caters to the all round development of the student preparing globally ready individuals into the fast pacing world. A three year bachelor's degree program in botany provides the foundation for prospective botanist to pursue a graduate level education or find and entry level career. Department has created botanical garden., the purpose of botanical garden is to interpret and scientific significance for their study.

OBJECTIVES

The main objectives of botanical garden is

- Educating the student: Botanical garden offer educational experiences for the students through interpretation.
- Conservation, documentation and maintenance of indigenous and exotic plant species.
- Serve as a conservation and education centre.
- Acclimatization and field evaluation of indigenous and exotic plants from various agroclimatic regions.
- Establishing herbarium of authentic specimens for identification of plants.
- Provide recreation facilities to the public in general and exposing them to different hands on learning.

LIST OF PLANTS

Sr. No.	Botanical name	Family	Vernacular name
1	*Azadirachta indica* A.juss	Meliaceae	Limb
2	*Leucarna leucocephala* (Lam) de. Wit	Fabaceae	subabhul
3	*Mimusops elengi*L.	Sapotaceae	bakul
4	*Solanum lycopersicum* L.	solanaceae	Tomato
5	*Ficus carica* L.	Moraceae	Anjir
6	*Caesalpinia pulcherrima*(L) SW.	Caesalpiniaceae	Sankasur
7	*Casuarina equisetifolia* L.	Casurinaceae	sura
8	*Vitex nigundo*L.	Verbenaceae	Nirgudi
9	*Bougainhvillea spectabilis* willd.	Nuctaginaceae	Kagadiful
10	*Aloe barbadensis* miller.	Liliaceae	Korfad
11	*Magnolia champaca* (L) Baill.	Magnolia	Sonchafa
12	*Ficus religiosa* L.	Moraceae	Pimpal
13	*Tamarindus indica* L.	Fabaceae	chinch
14	*Hamelia patens* jacq.	Rubiaceae	firebush
15	*Caesalpinia bonduc* L.	Fabaceae	Gajaga
16	*Citrus indica* yu. Tanaka	Rutaceae	Limbu
17	*Asparagus racemosus*willd.	Aspargaceae	Shatavari
18	*Murraya koenigii* L.	Rutaceae	kadipatta
19	*Marselia quadrifolia* L.	Marseliaceae	
20	*Diospyros melanoxylon*	Ebenaceae	Tenbhurni

21	*Kigelia africana (*Lam*)*	Bignaniaceae	
22	*Ptophorum pterocarpum* (D.C.) k.heyne	Fabceae	Tambrashengi
23	*Butea monosperma(*Lam) k.taub	Fabceae	Palas
24	*Prunus avium* L.	Rosaceae	Cherry
25	*Solanum album* L.	Santalaceae	Chandan
26	*Tinospora Cordifolia* (Thunb) Miers.	Menispermaceae	Gulvel
27	*Duranta erecta* L.	verbenaceae	Golden duranta
28	*Aegle marmelos* L.	Rutaceae	bel.
29	*Lowsonia inermis* L.	Lythraceae	Mehandi
30	*Punica granatum* L.	Lythraceae	Dalimb
31	*Ipomoea mauritiana*jacq.	Convolvuaceae	Besharam
32	*Kalanchoe pinnata*(Lam) pers.	Crassulaceae	Panfuti
33	*Zamia pumila* L.	Zamiaceae	
34	*Manilkara zapota* L.	Soptacear	Chiku
35	*Justicia adathoda* L.	Acanthaceae	Adulsa
36	*Ficus elastica* Roxb.	Moraceae	Rubber
37	*Eichhornia crassipes* mart.	Pontederiaceae	
38	*Hiniscus rosa-sinesis* L.	Malvaceae	Jasusand
39	*Tecoma stans (*L) Juss.	Bignoniaceae	pivali futani
40	*Melaleuca citrinu (*curtis).	Myrtaceae	bottlebrueh
41	*Russelia equisetiformis* schlecht.cham	plantaginceae	Fountain bush
42	*Thuja occidentalis* L.	Cupressaceae	Morpankhi

43	*cycas circinalis* L.	Cycadaceae	
44	*Ixora coccinea* L.	Rubiaceae	
45	*Jasminum sambac* (L) Aiton.	Oleaceae	Mogra
46	*Phyllanthus emblica* L.	Phyllanthaceae	MorAwala
47	*Carissa corandas* L.	Apocyaceae	Karvand
48	*Lagerstroemia speciasa* (L) Pels.	Lythraceae	taman
49	*Acacia penninervis* DC.	Fabaceae	Babhal
50	*Lantana camara* Linn.	Verbeaceae	Ghaneri
51	*Moringa oleifera* Lam.	Moringaceae	Shevaga
52	*Annona reticulata*L.	Annoacaeae	Sitafal
53	*Crossandra infundibuliformis* L.	Acanthanceae	Aboli
54	*Allamanda* L.	Apocynaceae	
55	*Dypsis decaryi*Jum.	Arecaceae	
56	*Amorphophallus paeoniifolius*L.	Araceacee	
57	*Ficus racemosa* L.	Moraceae	Umbar
58	*Carica papaya* L.	Cariacaeae	Papai
59	*Datura stramonium* L.	Solanaceae	Dhotra
60	*Pithecellobium dulce* Roxb.	Fabaceae	Vilayati chinch
61	*Mangifera indica* L.	Anacardicaeae	Amba
62	*Psidium guajava* L.	Myrtaceae	Peru
63	*Alstonia scholaris* L.	Apocynaceae	Saptaparni
64	*Millettia pinnata* L.	Fabaceae	Karanji
65	*Syzigium cumini* L.	Myrtaceae	Jambhul

66	*Bixa orellena* L.	Bixaceae	Shendri
67	*Cereus hexagonus*	Cactaceae	
68	*Flaxinus lanuginosa* koidz.	Oleaceae	
69	*Caryota mitis* Lour.	Arecaceae	Fishtail palm
70	*Wisteria bifurcata* A.K. Irvine.	Arecaceae	Foxtail palm
71	*Dypsis lutescens* (H.wendl)	Arecaceae	Areca plam
72	*Tabernaemontana divaricata*	Apocynaceae	Pinwheel flower
73	*Dracaena trifasciata* (Prain) mobb.	Aspragaceae	Snake plant
74	*Antigonon leptopus* (Hook&Arn.)	Polygonaceae	Lcexeram Crecper
75	*Passiflora rocemosa* Brot.	Possifloraceae	Brahmakamal
76	*Pandanus odorifer* (forssk.)	Pandanaceae	Kevda
77	*Monoon longifolium*	Fabaceae	False Ashoka
78	*Aristolochia ringens*	Aristolochiaceae	Badakvel
79	*Codiaeam vaxegatum*L. A. juss	Euphorbiceae	Croton plant
80	*Antigonon leptopus* (Hook&Arn)	Polygonaceae	Ice cream creeper
81	*Epipremnum aureum* (Linden&Andre)	Araceae	Money plant
81	*Codiaeum variegatum* L.	Euphorbiaceae	Croton plant
82	*Pandanus odorifer* (Forssk)	Pandanaceae	Kevda
83	*Monoon longifolium*	Fabaceae	False Ashoka
84	*Aristolochia ringes*	Aristolochiaceae	Badakvel

PHOTOGRAPHS









CONCLUSION

Botanical gardens are used to study and conserve plant species. Along with local plant species, it also features plants species around the world. These gardens play an important role in meeting human needs and providing well-being. Botanical gardens are frequently run by universities or other scientific research organisations, and many have associated herbaria and botanical science research programmes.

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Report of
Medicinal Garden

Department of Botany
P. V. P. Mahavidyalaya, Kavathe Mahankal

Shikshan Prasarak Sanstha's

Padmabhushan Vasantraodada Patil Mahavidyalaya

Kavathe Mahankal , Sangli

Affiliated to Shivaji University, Kolhapur



Introduction

A medicinal garden is a specialized type of garden dedicated to growing plants that have therapeutic properties. These gardens serve both practical and educational purposes, offering a range of benefits from health and wellness to scientific study and personal enrichment. Medicinal gardens provide access to plants that can be used for making herbal remedies, tinctures, and more. Many students use these gardens to cultivate plants known for their healing properties, like rose for relaxation for immune support. These gardens can serve as outdoor classrooms, allowing students and enthusiasts to learn about plant biology, botany and traditional medicine. They also offer a space for researching the efficacy of various plants and their applications. Growing medicinal plants at college can reduce dependence on commercial pharmaceuticals and promote a more sustainable lifestyle. It encourages the use of natural remedies and the cultivation of plants in an environmentally friendly way.

The medicinal garden was established in last five years. For preparation of medicinal garden choose a sunny spot with well-draining soil. Most medicinal plants thrive in full sun, although some, like mint, can tolerate partial shade. Prepare the soil by adding organic matter such as compost to improve fertility and drainage. Most medicinal plants prefer well-drained, nutrient-rich soil. In this medicinal garden we planted approximately 40 plant species and the plantation is going on.

Plants of the medicinal garden can be used to make teas, tinctures, salves, and poultices. Each plant has specific uses. Some plants are used for their essential oils, which can promote relaxation, mental clarity, and other benefits. Many medicinal plants have culinary uses and can be incorporated into everyday cooking for their flavor and health benefits. Before using medicinal plants, especially for health purposes, it's important to consult with a healthcare provider to avoid potential interactions with medications or health conditions. Properly identify plants to ensure they are safe and appropriate for their intended use. Some plants can be toxic or cause allergic reactions. Practice sustainable gardening by using organic methods, avoiding invasive species, and promoting biodiversity. By creating and tending a medicinal garden, we explore the intersection of nature and health, cultivate a diverse array of useful plants, and enjoy the process of growing our own remedies and enhancing our well-being.

Aims and Objectives

A medicinal garden project in a college setting can offer a range of benefits and learning opportunities for students, faculty, and the broader community. Here are some key aims and objectives for such a project.

Aims

- Provide hands-on experience in identifying, growing, and using medicinal plants, fostering a deeper understanding of their properties and applications.
- Encourage interdisciplinary learning by integrating botany, herbal medicine, chemistry, and health sciences.
- Equip students with practical skills in gardening, plant care, and herbal preparation, which can be applied in various fields, including health and wellness, agriculture, and environmental science.
- Facilitate research projects on the efficacy of medicinal plants, contributing to scientific knowledge and potential therapeutic applications.
- Promote the benefits of herbal remedies and natural health practices among students and community members.
- Promote sustainable gardening practices and environmental stewardship through organic gardening and conservation techniques.
- Create a space for relaxation and mental well-being, allowing students and staff to connect with nature and engage in stress-reducing activities.

Objectives

- Design a functional and aesthetically pleasing garden layout that accommodates various types of medicinal plants and includes educational signage.
- Choose a diverse range of medicinal plants suited to the local climate and soil conditions, considering both common and less familiar species.
- Create educational materials and programs for students, including workshops, lectures, and hands-on activities related to medicinal plants and their uses.
- Encourage student research projects and internships related to medicinal plants, providing guidance and support for their studies.
- Partner with local health organizations, schools, and community groups to expand the reach of the project and share resources.

Bael





Botanical Name: *Aegle marmelos*

Family: Rutaceae

Common Name: Bael

Medicinal Uses:

- The unripe fruit of *Aegle marmelos* is used to treat chronic diarrhoea and dysentery.
- It is believed to have astringent properties that help to bind the stool.
- Bael fruit is also used to alleviate gastrointestinal issues such as constipation and indigestion.
- The ripened fruit acts as a mild laxative, while the unripe fruit is used for its constipating effect.
- Extracts from the leaves and roots of *Aegle marmelos* are used to reduce inflammation in conditions like arthritis and other inflammatory disorders.
- The trees components have analgesic properties, making it useful for pain management.
- *Aegle marmelos* has been shown to possess antimicrobial properties, making it effective against a range of bacterial and fungal infections.
- Some studies suggest that it may have antiviral effects, particularly against certain strains of viruses.

Neem





Botanical Name: *Azadirachta indica* L.

Family: Meliaceaea

Common Name: Limb, Kadulimb, Neem

Medicinal Uses:

- Neem has strong antibacterial properties, making it effective against various bacterial infections.
- Neem extracts are often used to treat skin infections, wounds, and acne.
- Neem is effective against fungal infections like athlete's foot, ringworm, and dandruff.
- Neem oil or leaf extracts are commonly applied to the affected areas.
- Neem has been studied for its potential antiviral properties, and it has shown activity against viruses like herpes and chickenpox.
- Neem is widely used in treating acne due to its antibacterial and anti-inflammatory properties.
- Neem paste or oil is applied to the skin to reduce breakouts and soothe irritation.
- Neem helps in managing skin conditions like eczema and psoriasis by reducing inflammation and itching.

Rose





Botanical Name: *Rosa damascene* Mill.

Family: Rosaceae

Common Name: Rose, Gulab

Medicinal Uses:

- Rose petals and rose water are known for their soothing and anti-inflammatory properties, making them effective for treating skin irritations, redness, and inflammation.
- Rose water is commonly used as a natural moisturizer, helping to hydrate and soften the skin.
- Due to its antimicrobial properties, rose water can help reduce acne and prevent future breakouts.
- The scent of rose essential oil is often used in aromatherapy to reduce stress, anxiety, and promote relaxation. It is believed to have calming effects on the mind and body.
- Inhaling of rose essential oil or using it in massages may help alleviate symptoms of depression by uplifting mood and promoting emotional balance.
- Rose petals have been used as a mild laxative to treat constipation.
- They help in stimulating the digestive system and improving bowel movements.
- Rose tea, made from dried petals, is believed to aid digestion, reduce bloating, and alleviate stomach cramps.
- Roses are rich in antioxidants, which help protect the body's cells from oxidative stress and free radical damage, potentially reducing the risk of chronic diseases.

Bottle Brush





Botanical Name: *Callistemon citrinus* Skeels.

Family: Myrtaceae

Common Name: Bottle Brush, Cheel

Medicinal Uses:

- The leaves of *Callistemon citrinus* have been traditionally used to treat respiratory issues such as coughs, colds, and bronchitis. The leaves can be boiled to make a tea that helps soothe the throat and reduce symptoms of respiratory infections.
- The plant has expectorant properties, which help in clearing mucus from the respiratory tract, making it easier to breathe and reducing congestion.
- *Callistemon citrinus* extracts have shown antibacterial properties, making them useful in treating bacterial infections. The leaves and essential oil have been used to clean wounds and prevent infections.
- The plant also exhibits antifungal properties, which can help in treating fungal infections on the skin and other areas.
- The essential oil from *Callistemon citrinus* has anti-inflammatory effects, which can help reduce inflammation in conditions like arthritis and other inflammatory disorders.
- The leaves of the plant have been used to treat digestive problems such as indigestion, bloating, and stomach cramps. A tea made from the leaves can help soothe the digestive tract and improve digestion.
- In traditional medicine, the plant is sometimes used to treat diarrhoea due to its potential to reduce gastrointestinal discomfort.

Ice-cream Creeper





Botanical Name: *Antigonon leptopus* Hook.

Family: Polygonaceae

Common Name: Ice-cream Creeper

Medicinal Uses:

- *Antigonon leptopus* has been used in traditional medicine to reduce inflammation.
- It is believed to help alleviate symptoms of inflammatory conditions such as arthritis, gout, and other joint-related issues.
- The plant contains compounds with antioxidant properties, which help protect cells from oxidative stress and free radical damage.
- This may reduce the risk of chronic diseases such as heart disease and cancer.
- Extracts from *Antigonon leptopus* have demonstrated antimicrobial activity, particularly against certain strains of bacteria and fungi.
- This makes it potentially useful in treating infections and preventing the growth of harmful microorganisms.
- In some traditional practices, the leaves or flowers of *Antigonon leptopus* are applied topically to wounds, cuts, and sores to promote healing and prevent infections due to its antimicrobial properties.
- The plant has been used in traditional medicine to treat various digestive issues, including indigestion, diarrhoea, and stomach cramps.
- It is believed to have soothing effects on the gastrointestinal tract.

Avala





Botanical Name: *Phyllanthus emblica* L.

Family: Phyllanthaceae

Common Name: Amla, Avala, Moravala

Medicinal Uses:

- The high vitamin C content also makes Amla a powerful antioxidant, protecting cells from oxidative stress and reducing the risk of chronic diseases like heart disease and cancer.
- Amla has been used traditionally to improve digestion and alleviate gastrointestinal issues like indigestion, acidity, and constipation.
- It stimulates the secretion of digestive juices, enhancing digestion and absorption.
- Amla's astringent properties help in treating diarrhoea and dysentery by reducing the frequency of bowel movements and soothing the digestive tract.
- Amla has been shown to help regulate blood sugar levels by improving insulin sensitivity and reducing blood glucose levels. It is often used as a natural remedy for managing diabetes.
- Amla also helps in managing cholesterol levels by reducing bad cholesterol and increasing good cholesterol, thereby supporting heart health.
- Amla is used in skincare for its anti-aging properties. It helps reduce wrinkles, fine lines, and other signs of aging due to its antioxidant effects. Amla can also help with acne and pigmentation.
- Amla is widely used in hair care products for promoting hair growth, preventing hair loss, and treating dandruff.
- It strengthens hair roots, prevents premature graying, and improves hair texture.

Ravi Avala





Botanical Name: *Phyllanthus acidus* L.

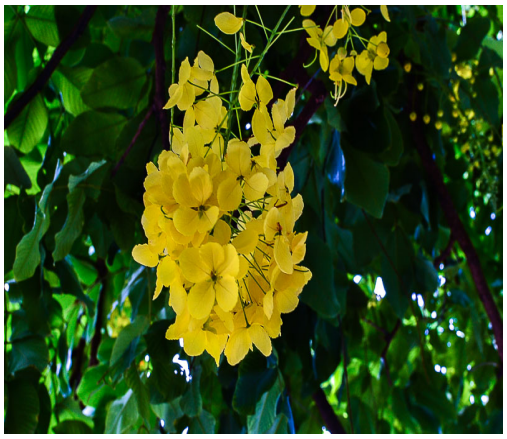
Family: Phyllanthaceae

Common Name: Ravi Avala, Harpharori

Medicinal Uses:

- The fruits and leaves of *Phyllanthus acidus* contain antioxidants, which help protect the body's cells from oxidative stress and free radical damage.
- This may help reduce the risk of chronic diseases such as heart disease and cancer.
- The fruits of *Phyllanthus acidus* are known for their mild laxative properties.
- They are used to help alleviate constipation and promote regular bowel movements.
- The fruit is also consumed to improve digestion and relieve symptoms such as indigestion and bloating.
- Extracts from the leaves and fruits of *Phyllanthus acidus* have anti-inflammatory properties, which can help in managing conditions such as arthritis, gout, and other inflammatory disorders.
- The plant exhibits antibacterial properties and has been traditionally used to treat bacterial infections.
- It can be applied topically to wounds to prevent infections.
- Phyllanthus acidus has been used to treat respiratory conditions such as coughs, colds, and bronchitis. The plant's anti-inflammatory and antimicrobial properties help soothe the respiratory tract and reduce symptoms.
- The plant has been traditionally used in some cultures to help manage asthma symptoms.

Bahava





Botanical Name: *Cassia fistula* L.

Family: Fabaceae

Common Name: Bahava, Amaltas

Medicinal Uses:

- The pulp of the *Cassia fistula* fruit is a well-known natural laxative.
- It is commonly used to relieve constipation due to its ability to promote bowel movements. The fruit pulp can be consumed directly or prepared as a decoction.
- Unlike some harsher laxatives, *Cassia fistula* is often considered mild and is used in traditional medicine to treat constipation in both adults and children.
- *Cassia fistula* is used to enhance digestive health. It helps alleviate indigestion, flatulence, and bloating by promoting the smooth functioning of the digestive system.
- The plant is also used in treating dysentery and other gastrointestinal disorders due to its ability to clear the intestines.
- Extracts from Cassia fistula have been found to possess antibacterial properties, making them useful in treating infections caused by bacteria.
- This includes both topical applications for wounds and internal use for systemic infections.
- The plant also exhibits antifungal properties, which are beneficial in treating fungal infections, particularly of the skin.
- *Cassia fistula* is used to reduce inflammation in various conditions, such as arthritis and other inflammatory disorders.
- The anti-inflammatory properties help in reducing pain and swelling.

Thuja





Botanical Name: *Thuja orientalis* L.

Family: Cupressaceae

Common Name: *Thuja,* Morpankh

Medicinal Uses:

- *Thuja orientalis* has demonstrated antibacterial activity, making it useful in treating infections caused by bacteria.
- Extracts from the plant can be used to treat wounds and prevent infections.
- The plant also exhibits antifungal properties, which can be beneficial in treating fungal infections such as athlete's foot and ringworm.
- *Thuja orientalis* has anti-inflammatory properties that can help reduce inflammation and associated symptoms in conditions like arthritis and other inflammatory disorders.
- In traditional medicine, *Thuja orientalis* is used to treat respiratory issues such as coughs and colds.
- Its expectorant properties help in relieving symptoms and clearing mucus from the respiratory tract.
- Preliminary research suggests that *Thuja orientalis* may have anticancer properties. Compounds isolated from the plant have shown potential in inhibiting the growth of cancer cells, although more research is needed to confirm its efficacy.
- *Thuja orientalis* has been traditionally used to treat skin wounds and abrasions.
- Its antimicrobial and anti-inflammatory properties help in promoting healing and preventing infection.
- The plant is used in traditional medicine to manage skin conditions such as eczema and psoriasis due to its soothing and healing effects.

Christmas Tree





Botanical Name: *Araucaria columnaris* L.

Family: Araucariaceae

Common Name: Christmas Tree

Medicinal Uses:

- *Araucaria* have shown antibacterial properties in traditional medicine.
- Extracts from the tree can help in treating bacterial infections.
- *Araucaria* have been used in traditional medicine to alleviate inflammation and related symptoms. This can be beneficial for conditions such as arthritis and other inflammatory disorders.
- The bark and resin of *Araucaria* trees have been traditionally used for their wound-healing properties. They help in treating minor wounds, cuts, and abrasions by promoting healing and reducing the risk of infection.
- In some cultures, parts of *Araucaria* tree have been used to aid digestion and alleviate gastrointestinal discomfort. This usage is more anecdotal and less well-documented in modern scientific literature.
- Some traditional uses suggest that *Araucaria* might have mild diuretic effects, helping to promote urine production and reduce fluid retention.
- Preliminary research on some *Araucaria* species has explored their potential anticancer properties. However, more extensive research is needed to confirm these effects and understand the underlying mechanisms.
- The seeds of *Araucaria* species are edible and are traditionally consumed in some cultures. They are rich in nutrients and can provide nutritional benefits.
- In some traditional practices, various parts of the *Araucaria* tree are used as general health tonics to improve overall well-being and vitality.

Cycas





Botanical Name: *Cycas circinalis* L.

Family: Cycadaceae

Common Name: Cycas

Medicinal Uses:

- Traditional medicine uses parts of *Cycas circinalis* to help reduce inflammation. This can be beneficial for conditions such as arthritis and other inflammatory disorders.
- In some traditional practices, *Cycas circinalis* has been used to treat digestive problems, including indigestion and constipation. The plant's parts are sometimes used to improve overall digestive health.
- The plant has shown some antimicrobial properties in traditional uses, including antibacterial and antifungal effects. It is used to treat infections and prevent microbial growth.
- Parts of *Cycas circinalis*, particularly the leaves, have been traditionally used in poultices and topical applications to help with wound healing and to treat cuts and abrasions.
- In certain traditional medicine systems, *Cycas circinalis* is used in various formulations and remedies to address a range of health issues. These uses are often specific to local or cultural practices.
- In some cultures, parts of the *Cycas circinalis*, such as the seeds, are used in food preparation. However, it is important to note that parts of cycads can be toxic if not properly prepared.
- While *Cycas circinalis* has traditional uses, it is important to approach its medicinal use with caution.
- Some parts of the plant, particularly the seeds, contain toxins like cycasin, which can be harmful or even fatal if consumed inappropriately.

Kanher





Botanical Name: *Nerium oleander* L.

Family: Apocynaceae

Common Name: Kanher

Medicinal Uses:

- Some studies have explored the potential of *Nerium* oleander extracts in cancer treatment due to their cytotoxic pr operties against cancer cells.
- The compounds in oleander are being investigated for their ability to inhibit tumor growth and induce apoptosis (cell death) in cancer cells. However, these uses are experimental and require further research.
- *Nerium* has been used in traditional medicine for its anti-inflammatory effects, which may help in reducing symptoms associated with inflammatory conditions like arthritis.
- Traditional practices have used *Nerium* for its antimicrobial properties, which can help in treating bacterial and fungal infections. This is due to its ability to inhibit the growth of certain pathogens.
- In some cultures, parts of the *Nerium oleander* plant have been used in traditional remedies to treat various ailments, including skin conditions and digestive issues.
- These uses are based on traditional knowledge and should be approached with caution.

Marigold





Botanical Name: *Tagetes erecta* L.

Family: Asteraceaes

Common Name: Marigold, Zendu

Medicinal Uses:

- *Tagetes erecta* has anti-inflammatory properties, which can help reduce inflammation and associated symptoms in conditions such as arthritis, muscle pain, and other inflammatory disorders.
- The plant has demonstrated antibacterial properties in traditional medicine, which can help treat infections and prevent bacterial growth.
- *Tagetes erecta* also has antifungal properties, making it useful for managing fungal infections such as athlete's foot and ringworm.
- The flowers of *Tagetes erecta* are used in poultices and ointments for their wound-healing properties.
- They can help promote healing of minor cuts, bruises, and abrasions and prevent infection.
- *Tagetes erecta* is used traditionally to aid digestion and treat gastrointestinal issues such as indigestion and constipation. It helps in improving digestive function and relieving symptoms.
- The plant is used to manage various skin conditions due to its anti-inflammatory and antimicrobial properties.
- It can be used in topical applications to treat conditions such as eczema and psoriasis.
- Some studies suggest that *Tagetes erecta* may have anticancer properties.

Tamhan





Botanical Name: *Lagerstroemia speciosa* (L.) Pers.

Family: Lythraceae

Common Name: Tamhan

Medicinal Uses:

- The plant has been traditionally used to manage diabetes.
- Extracts from *Lagerstroemia speciosa*, particularly its leaves, have been shown to help lower blood glucose levels and improve insulin sensitivity.
- The plant contains antioxidant compounds that help neutralize free radicals and protect cells from oxidative damage, which can reduce the risk of chronic diseases and support overall health.
- *Lagerstroemia speciosa* has anti-inflammatory properties, which can help in reducing inflammation and alleviating symptoms related to inflammatory conditions such as arthritis.
- The plant exhibits antibacterial properties and has been used traditionally to treat infections caused by bacteria.
- *Lagerstroemia speciosa* also has antifungal properties that help in managing fungal infections.
- The plant has been used to support liver health and protect against liver damage. It is used in traditional medicine to treat liver disorders and support detoxification.
- Some studies suggest that *Lagerstroemia speciosa* may have anticancer properties. Compounds in the plant have shown potential in inhibiting the growth of cancer cells, although further research is needed to confirm these effects.

Hirava Chafa





Botanical Name: *Artabotrys hexapetalus* (L. f.) Bhandari

Family: Annonaceae

Common Name: Hirava Chafa, Madanmast

Medicinal Uses:

- *Artabotrys hexapetalus* has been used traditionally for its anti-inflammatory effects. It can help reduce inflammation and alleviate symptoms associated with inflammatory conditions such as arthritis.
- The plant has demonstrated antibacterial properties, making it useful for treating bacterial infections. Extracts from *Artabotrys hexapetalus* are used in traditional medicine to manage infections and prevent bacterial growth.
- It also exhibits antifungal activity, which helps in treating fungal infections like athlete's foot and ringworm.
- The plant contains compounds with antioxidant properties, which help protect cells from oxidative damage caused by free radicals. This can reduce the risk of chronic diseases and support overall health.
- *Artymobtyrs hexapetalous* is used in traditional medicine to aid digestion and treat gastrointestinal issues such as indigestion and dysentery. It helps improve digestive function and alleviate symptoms.
- The plant has been used traditionally to relieve pain, including headaches, muscle pain, and joint pain. Its analgesic properties help in reducing pain and discomfort.
- Some preliminary studies suggest that *Artymobtyrs hexapetalous* may have anticancer properties. Compounds in the plant have shown potential in inhibiting the growth of cancer cells, though further research is needed to confirm these effects.

Guava





Botanical Name: *Psidium guajava* L.

Family: Myrtaceae

Common Name: Guava, Peru

Medicinal Uses:

- Guava leaves are known for their anti-diarrheal properties.
- They are used in traditional medicine to treat diarrhoea and dysentery.
- The leaves contain compounds that help reduce intestinal inflammation and inhibit the growth of pathogens.
- The fruit itself aids digestion and helps in managing digestive issues such as indigestion and constipation.
- Guava leaves and extracts have demonstrated antibacterial properties, which help in treating infections caused by bacteria. They are used to manage conditions such as sore throats and wound infections.
- The plant also has antifungal properties, useful for treating fungal infections like athlete's foot and ringworm.
- Guava leaves and fruit have anti-inflammatory effects, making them beneficial for reducing inflammation and alleviating symptoms related to conditions like arthritis and other inflammatory disorders.
- Guava is rich in antioxidants, such as vitamin C and flavonoids, which help protect cells from oxidative damage caused by free radicals. This can contribute to reducing the risk of chronic diseases and supporting overall health.

Karvand





Botanical Name: *Carissa carandus* L.

Family: Apocynaceae

Common Name: Karvand

Medicinal Uses:

- The fruit and leaves of *Carissa carandus* are used traditionally to treat diarrhoea and dysentery.
- They help in reducing intestinal inflammation and controlling gastrointestinal disturbances.
- The fruit is also used to improve digestion and relieve symptoms of indigestion.
- *Carissa carandus* exhibits antibacterial properties. Extracts from the plant are used in traditional medicine to manage bacterial infections and promote wound healing.
- The plant has antifungal properties, which help in treating fungal infections such as athlete's foot and ringworm.
- *Carissa carandus* is used to reduce inflammation and relieve symptoms associated with inflammatory conditions such as arthritis.
- The plant contains antioxidants like vitamin C, which help neutralize free radicals and protect cells from oxidative damage, potentially reducing the risk of chronic diseases.
- The fruit is rich in vitamin C, which supports immune function and helps the body fight off infections and illnesses.
- *Carissa carandus* is used traditionally to manage blood sugar levels.

Mogra





Botanical Name: *Jasminum sambac* (L.) Aiton

Family: Oleaceae

Common Name: Mogra

Medicinal Uses:

- *Jasminum sambac* has anti-inflammatory properties that can help alleviate inflammation and related symptoms in conditions like arthritis and muscle pain.
- The plant contains antioxidants that help neutralize free radicals, protecting cells from oxidative damage and reducing the risk of chronic diseases.
- The aromatic properties of *Jasminum sambac* make it useful in traditional medicine for treating respiratory issues. It is used to alleviate symptoms of coughs, colds, and bronchitis.
- *Jasminum sambac* is traditionally used to aid digestion and relieve gastrointestinal discomfort, such as indigestion and bloating.
- Extracts from *Jasminum sambac* are used topically to promote wound healing and treat minor skin injuries. The plant's antimicrobial and anti-inflammatory properties contribute to faster recovery.
- The plant is used in traditional remedies to manage skin conditions like acne and eczema due to its soothing and anti-inflammatory effects.
- The fragrant flowers of *Jasminum sambac* are used in aromatherapy to promote relaxation and reduce stress and anxiety. The scent is believed to have a calming effect on the nervous system.
- The plant has antimicrobial properties, which help in treating bacterial and fungal infections. It is used in traditional medicine to manage infections and promote overall health.

Karanj





Botanical Name: *Pongamia pinnata* L.

Family: Fabaceae

Common Name: Karanj

Medicinal Uses:

- *Pongamia pinnata* has anti-inflammatory properties that help reduce inflammation and alleviate symptoms of inflammatory conditions like arthritis and joint pain.
- The plant exhibits antibacterial properties, which are used traditionally to manage infections and promote wound healing.
- *Pongamia pinnata* also has antifungal properties, helping to treat fungal infections such as athlete's foot and ringworm.
- The oil extracted from *Pongamia pinnata* seeds is used topically to promote wound healing and treat minor cuts and abrasions. It helps in reducing inflammation and preventing infection.
- The oil is also used to manage skin conditions such as eczema, psoriasis, and acne due to its anti-inflammatory and antimicrobial effects.
- *Pongamia pinnata* is traditionally used to manage diabetes. Extracts from the plant may help lower blood glucose levels and improve insulin sensitivity.
- The plant is used to support liver health and protect against liver damage. It is traditionally used to treat liver disorders and support detoxification.
- *Pongamia pinnata* is used traditionally to aid digestion and treat gastrointestinal issues such as dysentery and diarrhoea. The plant helps improve digestive function and relieve symptoms.

Bakuli





Botanical Name: *Mimusops elengi* L.

Family: Sapotaceae

Common Name: Bakuli

Medicinal Uses:

- The bark and leaves of *Mimusops elengi* are used in traditional medicine for dental care. They are used to treat toothaches, gum infections, and as a mouthwash to improve oral hygiene.
- *Mimusops elengi* has anti-inflammatory properties that help in reducing inflammation and alleviating symptoms related to inflammatory conditions such as arthritis and joint pain.
- The plant has antibacterial properties, making it useful in treating bacterial infections. It is traditionally used to manage infections and promote wound healing.
- *Mimusops elengi* also exhibits antifungal properties, which help in managing fungal infections like athlete's foot and ringworm.
- The plant is used traditionally to aid digestion and treat gastrointestinal issues such as diarrhoea and dysentery. It helps in improving digestive function and alleviating symptoms.
- The bark and leaves of *Mimusops elengi* are used topically to promote wound healing and treat minor skin injuries. Their antimicrobial and anti-inflammatory effects contribute to faster recovery.
- The plant is used to manage various skin conditions, including acne and eczema, due to its soothing and antimicrobial effects.

Touch-me-not





Botanical Name: *Mimosa pudica* L.

Family: Mimosaceae

Common Name: Touch-me-not, Lajalu

Medicinal Uses:

- *Mimosa pudica* has anti-inflammatory effects that help reduce inflammation and alleviate symptoms associated with conditions like arthritis and joint pain.
- The plant exhibits antibacterial properties, which are useful in managing bacterial infections and promoting wound healing.
- *Mimosa pudica* also has antifungal properties, making it effective in treating fungal infections such as athlete's foot and ringworm.
- The plant is used traditionally to aid digestion and treat gastrointestinal issues such as diarrhoea and dysentery. It helps improve digestive function and relieve symptoms.
- *Mimosa pudica* is used in traditional medicine to promote wound healing and treat minor skin injuries. Its antimicrobial and anti-inflammatory properties contribute to faster recovery.
- The plant has been used to manage anxiety and stress. It is believed to have mild sedative effects that help in calming the nervous system and improving sleep.
- *Mimosa pudica* contains antioxidants that help neutralize free radicals and protect cells from oxidative damage, which can reduce the risk of chronic diseases.
- In traditional medicine, *Mimosa pudica* is used to relieve menstrual cramps and regulate menstrual flow.

Adulasa





Botanical Name: *Justicia adhatoda* L.

Family: Acanthaceae

Common Name: Adulsa

Medicinal Uses:

- *Justicia adhatoda* is well-known for its use in treating respiratory conditions. It is effective in managing coughs, colds, and bronchitis due to its expectorant properties, which help in expelling mucus from the respiratory tract.
- The plant has been traditionally used to manage asthma and other chronic respiratory disorders. It helps in relieving symptoms and improving breathing.
- *Justicia adhatoda* has anti-inflammatory effects that help reduce inflammation and alleviate symptoms related to conditions like arthritis and joint pain.
- The plant exhibits antibacterial properties, which are useful in treating bacterial infections and promoting overall health.
- *Justicia adhatoda* also has antifungal properties, making it effective in managing fungal infections.
- It is used traditionally to aid digestion and treat gastrointestinal issues such as dyspepsia and dysentery. It helps in improving digestive function and relieving symptoms.
- *Justicia adhatoda* is used to support liver health and protect against liver damage. It is traditionally used to treat liver disorders and support detoxification.

Shatavari





Botanical Name: *Asparagus racemosus* Willd.

Family: Asparagaceae

Common Name: Mogra

Medicinal Uses:

- Shatavari is traditionally used to support female reproductive health. It is believed to balance hormones, regulate menstrual cycles, and alleviate symptoms of premenstrual syndrome (PMS) and menopause.
- It is used to enhance fertility and improve reproductive health in women.
- Shatavari is used to improve digestion and treat gastrointestinal issues such as indigestion, constipation, and dyspepsia. It helps soothe the digestive tract and support overall digestive function.
- Shatavari has anti-inflammatory effects that help reduce inflammation and relieve symptoms related to conditions like arthritis and joint pain.
- The herb is known for its immune-boosting properties. It helps strengthen the immune system and improve the body's ability to fight infections and diseases.
- Shatavari contains antioxidants that help neutralize free radicals and protect cells from oxidative damage, potentially reducing the risk of chronic diseases.
- Shatavari is used as an adaptogen, helping the body cope with stress and reduce anxiety. It promotes overall mental well-being and helps in maintaining emotional balance.
- Shatavari supports liver health and helps protect the liver from damage. It is traditionally used to treat liver disorders and aid in detoxification.
- The herb is used to improve skin health by nourishing and rejuvenating the skin. It can help manage skin conditions such as dryness and inflammation.

Allspice





Botanical Name: *Pimenta dioica* (L.) Merr.

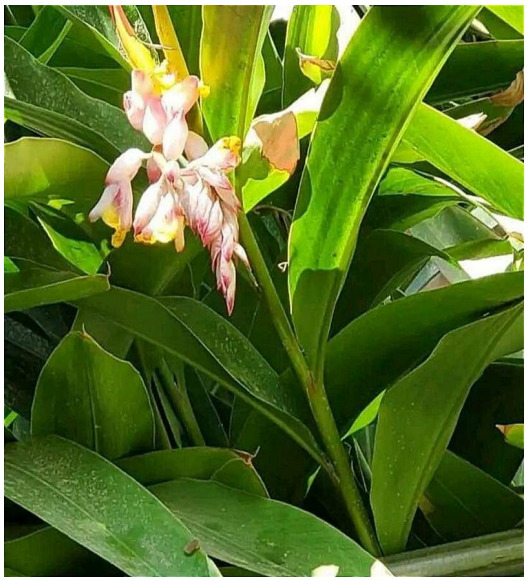
Family: Myrtaceae

Common Name: Allspice

Medicinal Uses:

- Allspice is traditionally used to relieve digestive issues such as indigestion, bloating, and gas. It helps stimulate the digestive system and enhance overall digestive function.
- Allspice contains compounds with anti-inflammatory effects, which can help reduce inflammation and alleviate symptoms associated with inflammatory conditions like arthritis.
- The spice has analgesic properties that can help in relieving pain, including headaches, muscle pain, and joint pain. It is used topically or ingested to manage pain.
- Allspice has antibacterial properties that help in fighting bacterial infections and promoting overall health.
- It also exhibits antifungal activity, which can aid in treating fungal infections like athlete's foot and ringworm.
- Allspice is used in traditional medicine to alleviate symptoms of coughs, colds, and respiratory congestion. It helps in relieving respiratory discomfort and promoting respiratory health.
- Allspice contains antioxidants that help protect cells from oxidative damage caused by free radicals, potentially reducing the risk of chronic diseases.

Cardamom





Botanical Name: *Elettaria cardamomum* (L.) Aiton

Family: Zingiberaceae

Common Name: Cardamom, Elaichi, Veldode

Medicinal Uses:

- Cardamom can aid digestion by stimulating the production of digestive enzymes and reducing bloating and gas.
- It has anti-inflammatory properties, which can help in managing conditions like arthritis.
- Cardamom contains antioxidants that help protect cells from damage and support overall health.
- It has antimicrobial properties that may help in reducing bad breath and improving oral hygiene.
- Cardamom can help with respiratory issues, such as asthma and bronchitis, by acting as an expectorant.

Clove





Botanical Name: *Syzygium aromaticum* (L.) Merr.

Family: Myrtaceae

Common Name: Clove, Lavang

Medicinal Uses:

- Cloves have antibacterial and analgesic properties, making them useful for relieving toothache and improving oral health.
- They can help with indigestion, bloating, and nausea due to their digestive stimulant properties.
- Cloves contain compounds that reduce inflammation and can help manage conditions like arthritis.
- They are rich in antioxidants, which protect cells from oxidative stress and support overall health.
- Cloves have antimicrobial properties that can help fight infections and boost the immune system.

Curry Leaves





Botanical Name: *Murraya koenigii* (L.)

Family: Rutaceae

Common Name: Curry Leaves, Kadipatta

Medicinal Uses:

- Curry leaves can aid digestion and help manage issues like diarrhoea and constipation due to their digestive stimulant properties.
- They are rich in antioxidants, which help protect cells from damage and support overall health.
- Some studies suggest that curry leaves may help lower blood sugar levels and manage diabetes.
- The leaves have anti-inflammatory properties that can help reduce inflammation and pain.
- Curry leaves are traditionally used to promote hair growth and prevent premature graying.

Cluster Fig





Botanical Name: *Ficus racemosa* L.

Family: Moraceae

Common Name: Cluster Fig, Umber

Medicinal Uses:

- It is used in traditional medicine to help manage diabetes by lowering blood sugar levels.
- The plant has anti-inflammatory properties, which can help reduce inflammation and pain.
- It may aid in digestion and help with gastrointestinal issues.
- *Ficus racemosa* contains antioxidants that help protect cells from oxidative stress.
- The plant is sometimes used in treatments for skin conditions like acne and eczema due to its astringent properties.

Moringa





Botanical Name: *Moringa oleifera* Lam.

Family: Moringaceae

Common Name: *Moringa*, Shevaga

Medicinal Uses:

- *Moringa* leaves are rich in antioxidants like quercetin, chlorogenic acid, and beta-carotene, which help reduce inflammation and oxidative stress in the body.
- Some studies suggest that *Moringa* may help lower blood sugar levels, which can be beneficial for managing diabetes. The leaf extract has been shown to have hypoglycemic effects.
- *Moringa* has been found to lower cholesterol levels, which may contribute to improved cardiovascular health and reduced risk of heart disease.
- *Moringa* has antibacterial and antifungal properties. Its leaves and seeds have been used traditionally to treat infections and to purify water.
- The high fiber content in *Moringa* can aid in digestion and help alleviate constipation. The leaves are also known to have properties that support gastrointestinal health.
- *Moringa* leaves are packed with vitamins and minerals, including vitamins A, C, and E, calcium, potassium, and protein. This makes them beneficial for overall nutritional support and combating malnutrition.
- The antioxidant and anti-inflammatory properties of *Moringa* may support skin health by protecting against oxidative damage and promoting wound healing.
- *Moringa* may help in regulating hormones and has been traditionally used to support menstrual health and alleviate symptoms of premenstrual syndrome (PMS).
- *Moringa's* rich nutrient profile, including vitamin C and beta-carotene, supports the immune system and helps the body fight off infections.
- Some research indicates that *Moringa* can help protect the liver from damage and may aid in its detoxification processes.

Rugmini





Botanical Name: *Ixora coccinea* L.

Family: Rubiaceae

Common Name: Rugmini

Medicinal Uses:

- *Ixora coccinea* has been traditionally used to help reduce inflammation. The plant contains compounds that may have anti-inflammatory effects, potentially aiding in the management of conditions characterized by inflammation.
- The plant is known to possess antioxidant properties, which can help combat oxidative stress and protect cells from damage caused by free radicals.
- *Ixora coccinea* has been used in traditional medicine for its antimicrobial properties. It may help in combating bacterial and fungal infections, though more research is needed to fully understand its effectiveness.
- In some traditional practices, parts of the *Ixora coccinea* plant are used to treat digestive issues. This includes its potential use as a remedy for stomach ailments and promoting overall digestive health.
- Some traditional uses include applying the plant to wounds or sores, leveraging its potential antimicrobial and anti-inflammatory properties to support healing.
- The plant is used in some cultures for skin conditions, including topical applications to address issues like rashes or minor irritations.
- In traditional medicine, *Ixora coccinea* is sometimes used to help reduce fever. This use is based on its general medicinal properties, though specific evidence for this use is limited.
- The plant may be used to promote urine production, which can help in conditions related to fluid retention or urinary issues.

Sweet Tamarind





Botanical Name: *Pithecellobium dulce* (Roxb.) Benth.

Family: Fabacea

Common Name: Sweet Tamarind, Vilayati Chinch

Medicinal Uses:

- *Pithecellobium dulce* has been traditionally used to help reduce inflammation. Extracts from the plant may have compounds that can mitigate inflammatory responses.
- The plant is known to possess antioxidant properties, which can help neutralize free radicals and protect cells from oxidative stress.
- Traditionally, parts of the *Pithecellobium dulce* plant, such as its pods, are used to support digestive health. It is believed to help alleviate symptoms like indigestion or constipation.
- Some traditional uses involve using the plant to treat infections. Its extracts may have antimicrobial properties that help combat bacterial and fungal infections.
- In traditional medicine, the plant is sometimes used to manage fever, leveraging its general medicinal properties to help lower body temperature.
- *Pithecellobium dulce* may be used to promote urination, which can be beneficial in conditions related to fluid retention or urinary health.
- Preliminary studies suggest that *Pithecellobium dulce* may have potential antidiabetic effects, which could help in managing blood sugar levels, though more research is needed to confirm this benefit.
- Some traditional uses involve promoting cardiovascular health, though specific evidence on this use is limited.

Cinnamon





Botanical Name: *Cinnamomum verum* J. Presl

Family: Lauraceae

Common Name: Cinnamon, Dalchini

Medicinal Uses:

- True cinnamon contains compounds like cinnamaldehyde that have anti-inflammatory properties. This can help reduce inflammation in the body, potentially benefiting conditions such as arthritis.
- The plant has strong antioxidant activity, which helps neutralize free radicals and protect cells from oxidative stress and damage.
- Ceylon cinnamon may help improve insulin sensitivity and lower blood sugar levels. It has been studied for its potential to assist in managing type 2 diabetes by enhancing glucose metabolism.
- Cinnamon has natural antimicrobial properties that can help combat bacterial and fungal infections. It's sometimes used in traditional medicine to treat respiratory infections and digestive issues.
- Cinnamon can aid digestion by helping to alleviate bloating, gas, and indigestion. It also has carminative properties that support overall digestive function.
- Some studies suggest that cinnamon can help lower cholesterol levels and reduce blood pressure, contributing to better cardiovascular health.
- Preliminary research indicates that cinnamon may have potential neuroprotective effects, which could support cognitive function and potentially offer protective benefits against neurodegenerative diseases.

Korphad





Botanical Name: *Aloe vera* (L.) Berm f.

Family: Asphodelaceae

Common Name: Korphad

Medicinal Uses:

- *Aloe vera* gel is widely used for its skin-soothing and healing properties. It can help in the treatment of minor burns, cuts, and abrasions.
- Its anti-inflammatory and antimicrobial properties promote faster healing and reduce pain and swelling.
- *Aloe vera* is an excellent natural moisturizer. Its gel can hydrate the skin and help treat dry skin conditions. It's often used in lotions, creams, and gels for its moisturizing effects.
- *Aloe vera* contains compounds like acemannan that have anti-inflammatory properties, which can be beneficial for conditions like psoriasis and eczema, reducing redness and inflammation.
- *Aloe vera* juice is sometimes used to support digestive health. It may help soothe the digestive tract and alleviate symptoms of heartburn and irritable bowel syndrome (IBS). However, excessive consumption should be avoided due to potential laxative effects.
- The plant's polysaccharides, particularly acemannan, are believed to support immune function by enhancing the body's defense mechanisms and promoting overall health.
- *Aloe vera* has natural antimicrobial properties that can help fight bacterial, fungal, and viral infections. It is sometimes used in topical treatments to manage infections.

Insulin





Botanical Name: *Costus igneus* N.E.Br.

Family: Costaceae

Common Name: Insulin

Medicinal Uses:

- The most well-known medicinal use of *Costus igneus* is its potential to help manage blood sugar levels. The plant is reputed to have properties that can mimic insulin, making it beneficial for people with diabetes. Some studies suggest that it can help lower blood sugar levels and improve glucose metabolism.
- *Costus igneus* is often used in traditional medicine to support the management of diabetes. Its leaves are believed to have compounds that can enhance insulin sensitivity and aid in glucose control.
- The plant is also known to have antioxidant properties, which help combat oxidative stress and protect cells from damage caused by free radicals. This can be beneficial in reducing the risk of complications associated with diabetes.
- *Costus igneus* contains compounds that may help reduce inflammation. This can be useful in managing inflammatory conditions and supporting overall health.
- In traditional medicine, *Costus igneus* is sometimes used to support digestive health. It is believed to help alleviate symptoms of indigestion and promote overall gastrointestinal function.
- The plant's antioxidant and anti-inflammatory properties contribute to immune support, helping the body defend against infections and other health issues.
- By helping to manage blood sugar levels and reduce oxidative stress, *Costus igneus* may contribute to cardiovascular health and reduce the risk of diabetes-related heart issues.

Air Plant





Botanical Name: *Kalanchoe pinnata* (Lam.) Pers.

Family: Crassulaceae

Common Name: Air Plant, Panphuti

Medicinal Uses:

- *Kalanchoe pinnata* is traditionally used to promote wound healing. The plant's leaves are often applied topically to cuts, burns, and sores to speed up healing and reduce inflammation.
- The plant has been shown to have anti-inflammatory effects, which can help reduce swelling and pain in conditions such as arthritis and other inflammatory disorders.
- *Kalanchoe pinnata* has demonstrated antimicrobial properties, making it useful in treating infections. It has been traditionally used to manage bacterial and fungal infections, though more research is needed to confirm its efficacy.
- The plant has been used traditionally to alleviate digestive issues such as stomach aches and indigestion. Its leaves are sometimes used in herbal remedies to support gastrointestinal health.
- *Kalanchoe pinnata* is known for its diuretic properties, which can help promote urine production and manage fluid retention. This may be beneficial for conditions related to excess fluid in the body.
- The plant contains compounds with antioxidant properties that can help combat oxidative stress and protect cells from damage caused by free radicals.
- Traditional uses include employing *Kalanchoe pinnata* to support respiratory health. It is sometimes used in remedies to help manage coughs and colds.

The plant's topical application is believed to help with various skin conditions, including minor irritations and eczema. Its soothing and anti-inflammatory properties can benefit skin health.

Gokarn





Botanical Name: *Clitoria ternatea* L.

Family: Fabaceae

Common Name: Gokarn

Medicinal Uses:

- *Clitoria ternatea* is often associated with cognitive enhancement. It's believed to have nootropic properties that may improve memory, learning, and mental clarity. Some studies suggest that it can help reduce symptoms of cognitive decline and promote overall brain health.
- The plant is thought to have anxiolytic properties. It may help reduce anxiety and stress, possibly through its effects on neurotransmitters in the brain.
- *Clitoria ternatea* contains various antioxidants, which can help neutralize free radicals in the body. This can reduce oxidative stress and may contribute to overall health and longevity.
- The plant has been shown to have anti-inflammatory properties, which may help in reducing inflammation-related conditions.
- Some research suggests that *Clitoria ternatea* might help manage blood sugar levels and improve insulin sensitivity, which could be beneficial for individuals with diabetes.
- Due to its antioxidant and anti-inflammatory properties, the plant is used in skincare. It can help soothe the skin, reduce signs of aging, and promote overall skin health.
- The plant has been traditionally used to support digestive health, including alleviating gastrointestinal discomfort and promoting healthy digestion.
- There is evidence suggesting that *Clitoria ternatea* has antibacterial and antiviral activities, which may help in fighting infections.
- It's sometimes used in hair care products due to its potential to strengthen hair and reduce hair loss.

Kanchan





Botanical Name: *Bauhinia purpurea* L.

Family: Caesalpiniaceae

Common Name: Kanchan

Medicinal Uses:

- *Bauhinia purpurea* has been traditionally used in the management of diabetes. Some studies suggest that extracts of the plant can help lower blood glucose levels and improve insulin sensitivity, making it a potential aid for managing diabetes.
- The plant contains compounds that have anti-inflammatory effects, which can help in reducing inflammation and alleviating conditions related to inflammation.
- *Bauhinia purpurea* exhibits antioxidant properties, which help in neutralizing free radicals in the body. This can contribute to overall health and may protect against oxidative stress-related diseases.
- The plant has been shown to possess antimicrobial properties. It may help in combating various microbial infections due to its antibacterial and antifungal activities.
- Traditional medicine often uses *Bauhinia purpurea* for its wound-healing properties. Extracts from the plant are applied to wounds and ulcers to promote healing.
- Some traditional practices use *Bauhinia purpurea* to support liver function and treat liver disorders. Its hepatoprotective properties help in protecting the liver from damage.
- The plant is sometimes used to aid in digestive issues. It may help with symptoms like diarrhea and dysentery.
- Preliminary studies suggest that *Bauhinia purpurea* might have potential anti-cancer properties. However, more research is needed to confirm its effectiveness and safety in cancer treatment.

Peregrina





Botanical Name: *Jatropha integerrima* Jacq.

Family: Euphorbiaceae

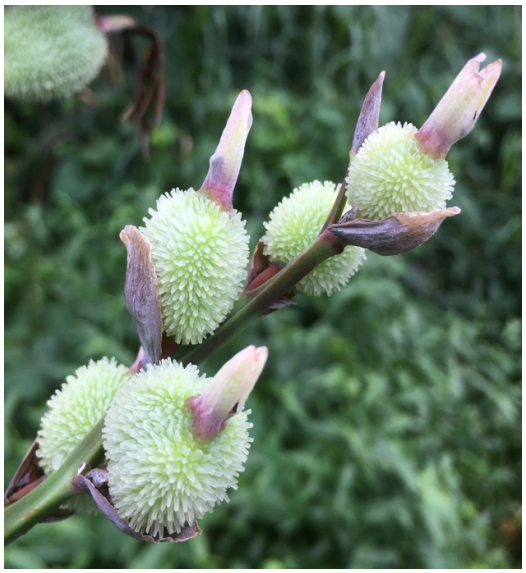
Common Name: Peregrina

Medicinal Uses:

- *Jatropha integerrima* has been traditionally used for its anti-inflammatory effects. It may help in reducing inflammation and managing conditions associated with inflammation.
- The plant is known to exhibit antimicrobial properties, which can be effective against certain bacterial and fungal infections. Extracts from the plant may be used topically to treat wounds or infections.
- *Jatropha integerrima* contains compounds that have antioxidant properties. These can help in neutralizing free radicals and reducing oxidative stress, potentially protecting cells from damage.
- Traditionally, the plant has been used in wound healing. Its extracts may be applied to the skin to promote the healing of cuts, wounds, and ulcers.
- In traditional medicine, the plant is sometimes used to treat gastrointestinal issues. It may help alleviate symptoms such as diarrhea and dysentery.
- The plant has been used in some cultures to manage fever. It is thought to have febrifuge properties that help in lowering elevated body temperatures.
- *Jatropha integerrima* may have analgesic properties, which could provide relief from pain. This includes its traditional use in managing conditions like arthritis or muscle pain.
- Due to its antimicrobial and anti-inflammatory properties, the plant may be used in skincare. It can help in treating skin conditions like acne or eczema.

Kardal





Botanical Name: *Canna indica* L.

Family: Cannaceae

Common Name: Kardal

Medicinal Uses:

- The rhizomes of *Canna indica* are traditionally used to address digestive issues. They are believed to have properties that help with digestion, alleviate symptoms of diarrhea, and treat gastrointestinal disorders.
- *Canna indica* is used for its anti-inflammatory properties. It may help reduce inflammation and manage conditions associated with inflammation, such as arthritis.
- Traditional medicine often uses the plant's rhizomes to promote wound healing. They are applied topically to help speed up the healing process of cuts, wounds, and ulcers.
- The plant is sometimes used as a diuretic to help increase urine output, which can be beneficial in managing fluid retention and supporting kidney function.
- *Canna indica* has been reported to have antimicrobial properties. Extracts from the plant may help in fighting bacterial and fungal infections.
- Some traditional uses suggest that *Canna indica* might help in managing blood sugar levels, although scientific evidence supporting this use is limited.
- Preliminary studies have explored the anti-cancer potential of *Canna indica*. It may contain compounds that could have protective effects against certain types of cancer, but more research is needed to confirm these findings.
- The plant is sometimes used in skincare for its potential benefits in treating various skin conditions. Its anti-inflammatory and antimicrobial properties can be helpful in managing acne, eczema, and other skin issues.

Conclusion

An implemented medicinal garden in a college should reflect on the achievements, challenges, and overall impact of the initiative. The implementation of the medicinal garden at P. V. P. Mahavidyalaya, Kavathe Mahankal has been a significant success, achieving its primary aims and objectives while contributing to the educational, practical and community-focused goals set out at the project's inception.

- The garden has provided students with hands-on learning experiences in botany, herbal medicine, and sustainable gardening practices. Workshops and classes have successfully integrated the use of medicinal plants into the curriculum, enriching students' academic and practical knowledge.
- The garden has served as a living laboratory for student research projects, allowing for the exploration of plant properties and their potential therapeutic uses. Several research projects have been conducted, contributing valuable insights to the field of medicinal botany.
- The medicinal garden has promoted sustainable gardening practices, including organic methods and biodiversity conservation, reflecting the college's commitment to environmental responsibility.
- The garden has provided a serene space for relaxation and mental well-being, benefiting students and staff through its therapeutic environment.
- Some initial gaps in knowledge about specific plant care and medicinal uses were addressed through ongoing training and collaboration with experts, enhancing the overall effectiveness of the garden.
- The medicinal garden develops new educational modules and research opportunities to further integrate the garden into the college’s curriculum.
- With using this garden we increased community engagement through additional workshops, events, and collaborations with local organizations.
- The garden has focused on sustainable practices and seeks additional resources to support the garden’s long-term growth and success.

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Padambhushan Vasantraodada Patil Mahavidyalaya

Kavathe Mahankal, Dist- Sangli

Department of Botany

Report On

Vermicomposting

Introduction-

Bioxidation and stabilization process of organic materials that involves the joint action of earthworms and microorganisms. Compared with composting, vermicomposting has a higher rate of stabilization and it greatly modifies its physical and biochemical properties, with a low C: N ratio and homogenous end product. It is also cost-effective and eco-friendly waste management. Due to its innate biological, biochemical, and physicochemical properties, vermicomposting can be used to promote sustainable ruminant manure management. Vermicomposts are excellent sources of biofertiliser and their addition improves the physiochemical and biological properties of agricultural soils. In addition, earthworms from vermicomposting can be used as a source of protein fishes and monogastric animals.

Objectives-

- For Waste management

Vermicomposting is an eco-friendly way to manage organic waste. It can help reduce the amount of foul-smelling waste that is dumped in fields and around animal farms.

- To Improve Soil health

Vermicompost can improve soil fertility, structure, aeration, and water retention. It can also help restore damaged soil and reduce erosion.

- For Plant growth

Vermicompost can help plants grow better and increase yields. It can also reduce the need for harmful synthetic fertilizers.

- To Improve Soil biodiversity

Vermicompost can increase the diversity of soil microbes and plants.

- For Nutritional value

Earthworm-fed fish can be a good source of nutrition, and could potentially be used in human and animal diets.

Methodology

Vermicomposting is a method of composting organic waste using earthworms. Vermiculture is prepared in following steps:

- Bed method: This is a simple method that involves making beds of organic matter.
- Worm bins: These can be made from wood or plastic, and should have holes or mesh for aeration. Plastic bins need more drainage than wooden ones because they don't absorb water.
- Temperature: Vermicomposting needs to be kept at temperatures that are suitable for earthworms, which is generally between 15–25°C.
- Food scraps: Bury food scraps completely so they're covered by bedding, and don't add more than the worms can eat in a few days.
- Harvesting: Gently remove the top layer of compost until you find worms, then expose them to sunlight to encourage them to burrow deeper.
- Starting over: After harvesting, you can restart the process with fresh bedding and food.

Advantages of vermicomposting:

1. Soil health Vermicompost improves soil structure, aeration, and texture, and reduces compaction. It also increases the soil's water retention capacity and fertility.
2. Plant growth Vermicompost helps plants grow better, germinate, and produce more crops. It also improves root growth and structure and helps plants absorb nutrients.
3. Pest and disease control Vermicompost can help suppress pests and diseases that affect plants.
4. Environmental benefits Vermicomposting is an eco-friendly way to recycle organic waste without using chemicals.
5. Soil nutrients Vermicompost is rich in nutrients and helps restore soil nutrients. It also contains plant growth hormones that help nurture the soil.
6. Humic acids Vermicompost is rich in humic acids, which help balance the pH of the soil and condition it.
7. Circular economy Vermicomposting can be a profitable enterprise that contributes to a circular economy.

Photographs



Vermicomposting Bed



Vermiwash Collection



Vermicompost



Vermiwash

Conclusion

Vermicomposting is a process that uses earthworms and microbes to break down organic waste into nutrient-rich compost, also known as vermicompost or "worm castings". Vermicomposting has many benefits, including:

- Enhancement in plant nutrition: Vermicompost is a great source of plant nutrients like nitrogen, phosphorus, potassium, and sulfur. It can improve germination, plant growth, and yield.
- Improvement in soil structure: Vermicompost can enrich soil with microbial biomass and improve root growth and structure.
- Sustainable practice: Vermicomposting is a sustainable way to recycle organic waste.
- Versatility: Earthworms can consume many types of organic waste, including kitchen waste, animal waste, agricultural residues, and paper.

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Department of Botany

REPORT OF

NO VEHICLE DAY



PADMABHUSHAN VASANTRAODADA PATIL MAHAVIDYALAYA
KAVATHE MAHANKAL, Dist. Sangli (Maharashtra) Pin- 416 405
Principal Prof. (Dr.) M. K. Patil M.Sc., M. Phil., Ph.D. Mob.9421185277
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Jr. College Index No. J 22.04.002

Ref No.: PVPMKM/ Date: **01/08/2022**

CIRCULAR

All the students, Teaching and Non-Teaching staff of the college are hereby informed that, as part of our commitment to environmental sustainability and promoting a healthier campus environment, we are pleased to announce the implementation of a "No Vehicle Day" policy starting from the academic year 2022-23.

Policy Details:
Effective Date: Beginning From Academic Year 2022-23
Frequency: Monthly (4th Saturday)
Applicable to: All Teaching Staff, Non-Teaching Staff, and Students

Guidelines:

1. On designated No Vehicle Days, all members of the college community are required to refrain from bringing motorized vehicles onto campus.

2. Alternative transportation methods are encouraged, including:
   - Walking
   - Cycling
   - Public transportation
   - Carpooling (drop-off at campus entrance)

3. Special considerations will be made for individuals with disabilities or medical conditions that require vehicular transportation.

4. Emergency and essential service vehicles will be exempt from this policy.

Objectives:

- Reduce carbon emissions and improve air quality on campus
- Promote physical activity and healthier lifestyle choices
- Foster a sense of community and environmental responsibility
- Reduce traffic congestion and parking issues on campus

Implementation:

- Designated bicycle parking areas will be expanded to accommodate increased bicycle usage.
- Information on public transportation routes and schedules will be made available on the college website and notice boards.
- Security personnel will monitor and enforce the No Vehicle Day policy at campus entry points.

We encourage all members of our college community to embrace this initiative and contribute to creating a more sustainable and environmentally friendly campus.

For any queries or concerns, please contact the Administrative Office.

Thank you for your cooperation and support in this important initiative.

Sincerely,

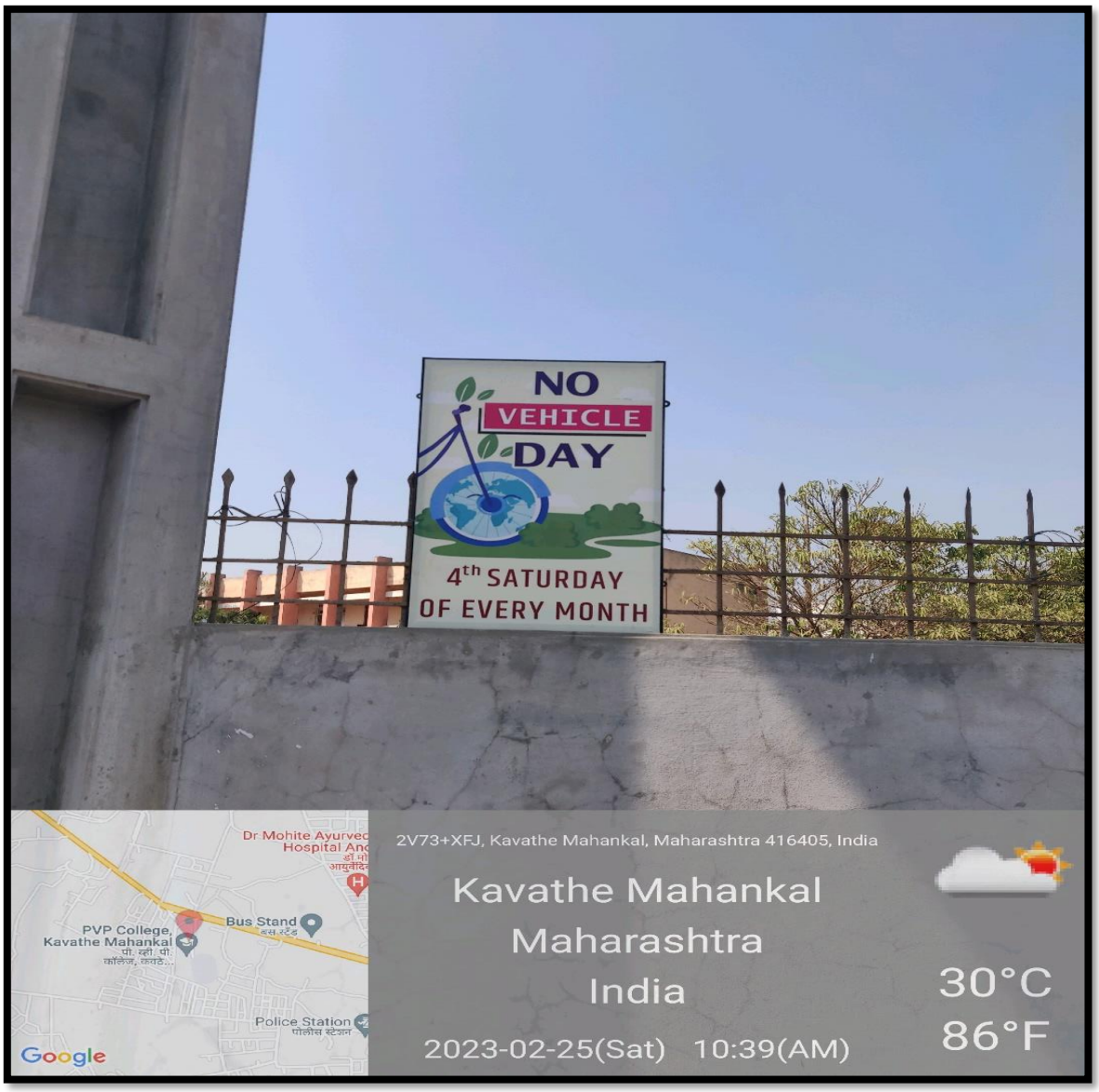
Internal Quality Assurance Cell
Co-ordinator
Padmabhushan Vasantraodada Patil
Mahavidyalaya, Kavathe Mahankal

P.V.P. MAHAVIDYALAYA ★ K.Mahankal, Dist. Sangli.

PRINCIPAL,
Padmabhushan Vasantraodada Patil
Mahavidyalaya,K.Mahankal,Dist-Sangli

PHOTOS OF ENVIRONMENTAL PROMOTION ACTIVITIES
NO VEHICLE DAY

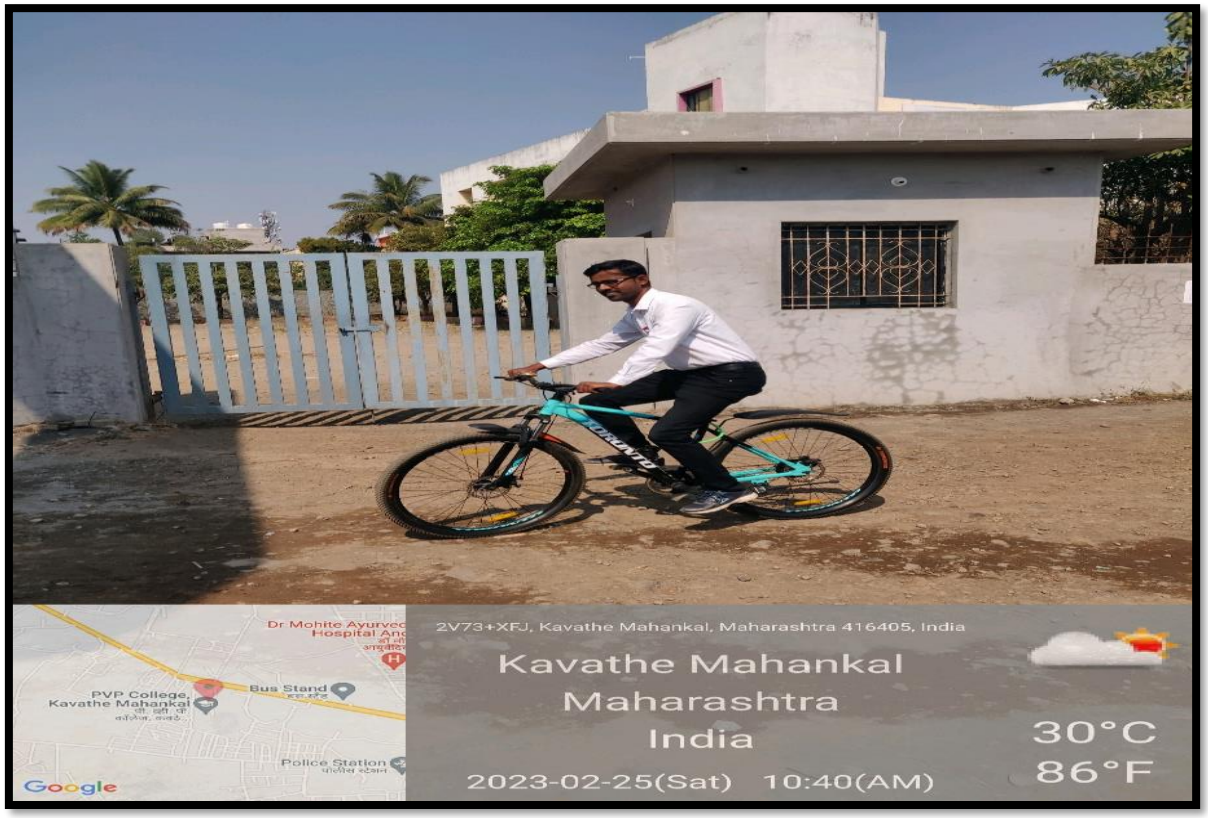
Digital Flex of Maintenance of No Vehicle Day



No Vehicles are in Campus on No Vehicle Day



Faculty Members with Bicycles on No Vehicle Day



Parked Bicycles at College Campus



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Mahavidyalaya. K. Mahankal, Dist. Sangli

Shikshan Prasarak Sanstha's

Padambhushan Vasantraodada Patil Mahavidyalaya Kavathe

Mahankal, Dist- Sangli

Report on

Facilities Provided to Divyangjan (Persons with Disabilities)

Introduction The term Divyangjan refers to individuals with disabilities in India, encompassing a wide range of physical, sensory, and intellectual impairments. The government and various organizations have implemented several initiatives to enhance their quality of life, promote inclusion, and ensure equal opportunities.

Background The Rights of Persons with Disabilities Act, of 2016 aims to safeguard the rights of Divyangjan and ensure their full participation in society. It outlines various provisions for accessibility, education, employment, and social security. & The National Policy for Persons with Disabilities This policy emphasizes the empowerment and inclusion of Divyangjan through various welfare measures and programs.

The following Facilities and services were provided by the institution to provide an inclusive environment for Divyangjan

1. For Accessibility Infrastructure Ramps, lifts, and accessible restrooms in the Institute.
2. For easy asses use of Special vehicles for transportation.
3. For Inclusive Education provisions for special assistive technology.
4. For Financial assistance and scholarships: students with disabilities at various educational levels were awarded scholarships and various governmental schemes.

Conclusion

The institute is committed to providing all possible facilities to Divyangjan. There has been significant improvement over the years, yet ongoing efforts are to enhance accessibility, promote inclusive practices, and change societal perceptions of the institute. This report highlights the progress made and the work still needed to support Divyangjan in leading a fulfilling life.

Provision of Wheel Chair





Provision of Tricycle gifted by one of our Alumni



Disable Student Doing Study at Restroom



Separate Room for Disables



Ramps


GPS Map Camera
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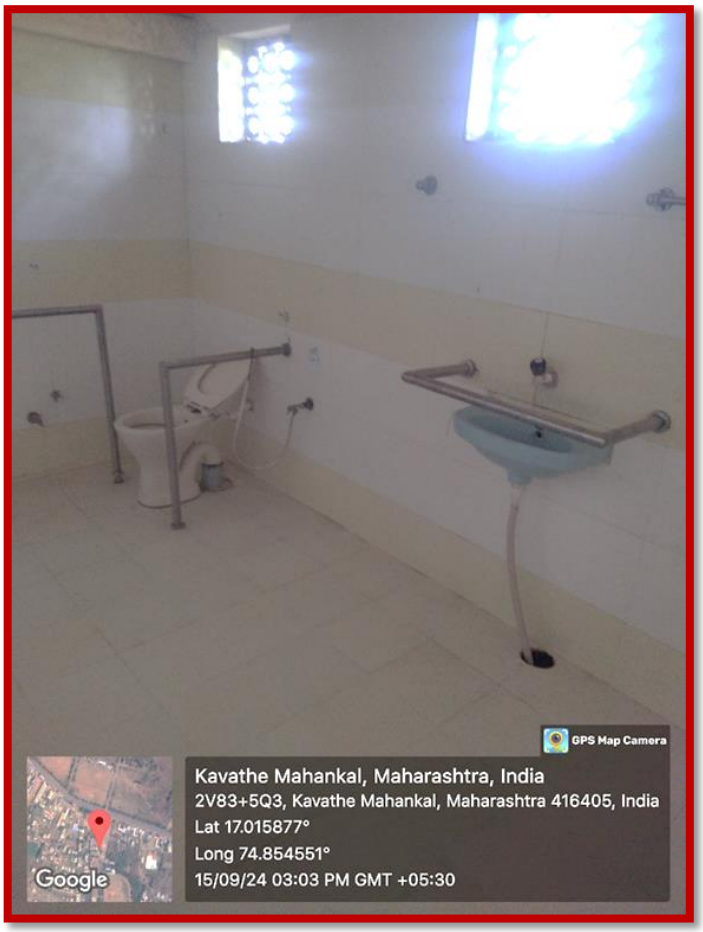

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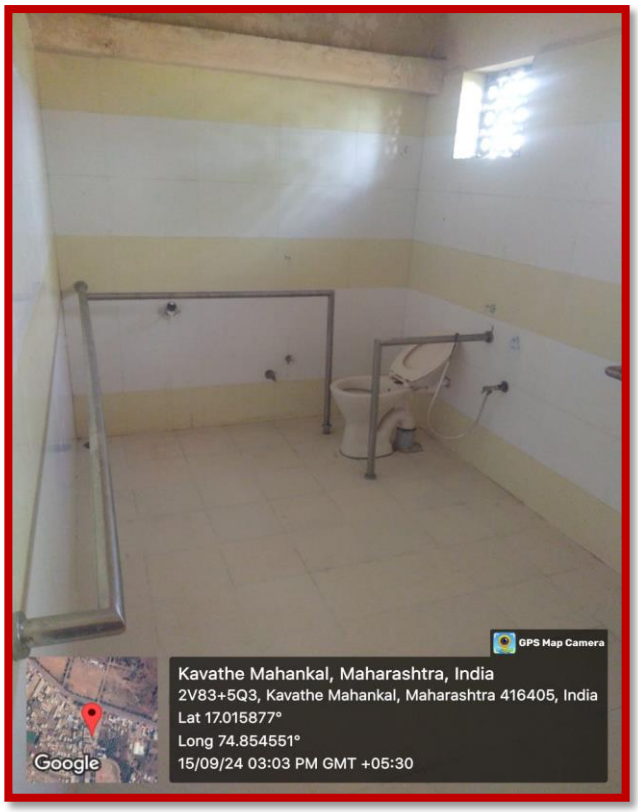

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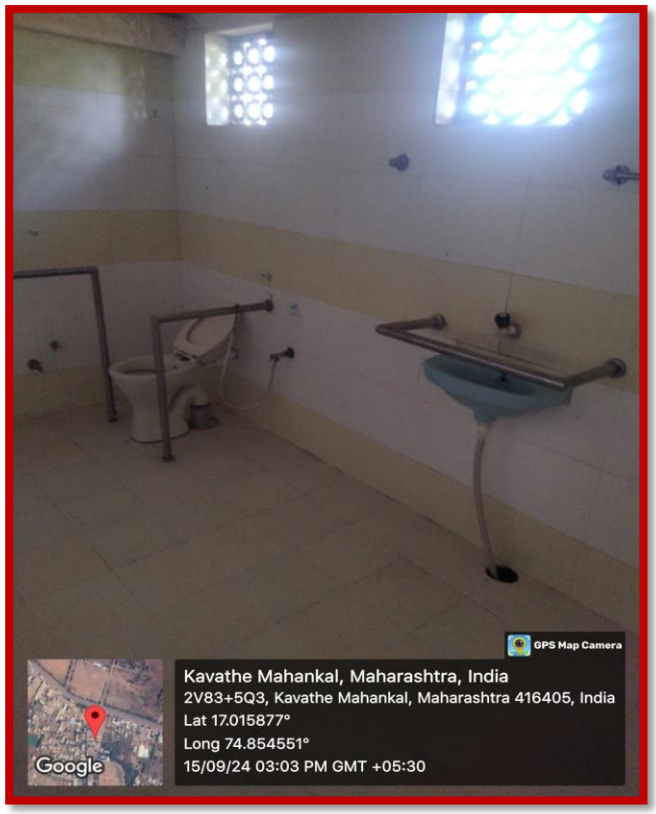

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Washroom

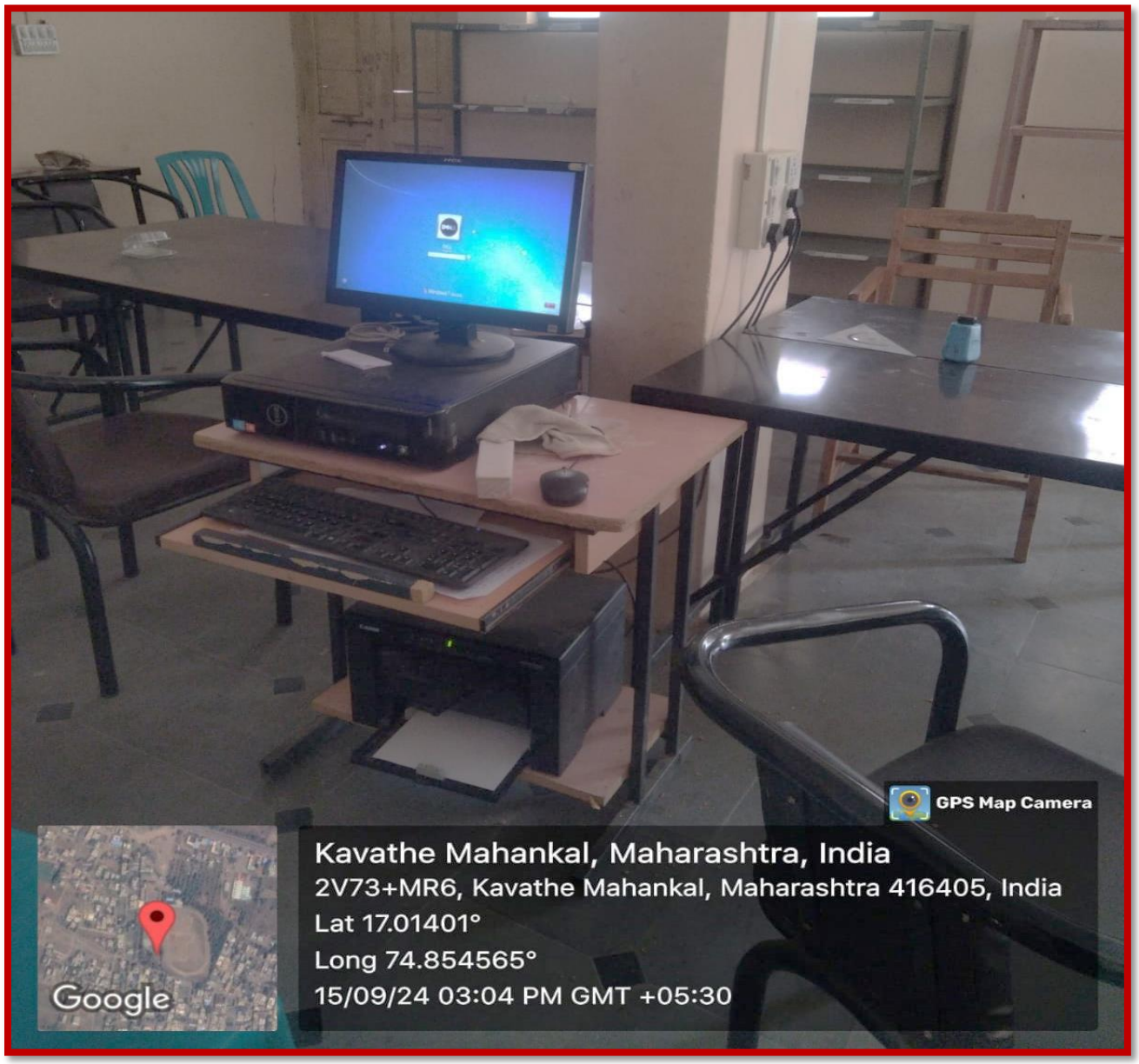

Washroom
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Computer and Internet Facility for Disable Student



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