

Green Audit Report

(2022-23)



Kai. Rasika Mahavidyalaya
Deoni Tq. Deoni, Dist. Latur -413519 (MS)



Green Audit report Submitted by :-



KEDAR KHAMITKAR & ASSOCIATES

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INDEX:

Sr.	Titles/Topics	Page
1	Acknowledgement	3
2	Executive Summary	4
3	Chapter No. 1: Scope of work & Methodology	5
4	Chapter No. 2: Introduction about Institute	7
5	Chapter No. 3: Categories of Land use	8
6	Chapter No. 5: Study of Waste Management	9
8	Chapter No. 6: Study of Carbon Footprint	11
8	Chapter No. 7: Best Practices & Activities	12
9	Annexures : List of Plants at CSMSS campus	15



GREEN
AUDIT

ACKNOWLEDGEMENT

We express our sincere gratitude to the management of The Kai. Rasika Mahavidyalaya, for awarding us the assignment of Green Audit of their Deoni Campus.

We are thankful to: Honorable Principal & Staff given opportunity to conduct green audit.

We are also thankful to various Head of Departments & other Staff members for helping us during the field measurements.



Green Audit Team:

Kedar Khamitkar

Energy Auditor

Certified by Bureau of Energy Efficiency, Ministry of Power, Gov. of India
Empanelled Consultant MAHAURJA (Govt. of Maharashtra Institution)

Kishore Khamitkar

B.E. (Chemical) ; DIS ; DNY

Holistic Health Researcher

प्रतिज्ञा

हम सत्यनिष्ठा से प्रतिज्ञा करते हैं कि अपने सभी कार्यों में पेट्रोलियम उत्पादों के संरक्षण हेतु सतत प्रयासरत रहेंगे, ताकि देश की प्रगति के लिए आवश्यक इन सीमित संसाधनों की आपूर्ति अधिक समय तक सम्भव हो सके। आदर्श नागरिक होने के नाते हम लोगों को पेट्रोलियम पदार्थों के व्यर्थ उपयोग से बचने तथा पर्यावरण संरक्षण हेतु स्वच्छ ईंधन का प्रयोग करने के लिए जागरूक करेंगे।

EXECUTIVE SUMMARY:

Objective	Observation	Remarks / Recommendation
Green Cover - Plantation of Trees	Good Plantation of trees found in the campus and the green cover is extended every year in the CSMSS campus. At Present 10% area campus is having the Green cover.	Good initiative to save the endangered environment and to beautify our life.
Use of Renewable Energy	Institute is planning to install 2KW rooftop solar power plant	Recommended for Solar Streetlight
Water Conservation	Institute is planning to install STP plant	Recommended - To treat and purify wastewater before its safe discharge into the environment.
Rain Water harvesting	Rainwater Harvesting has been installed for recharge bore well. (Attached Photograph)	Good initiative for sustainability.
Avoid Misuse/ wastage of water	Installed Water conservation Sign Board for conservation	Institute has been taken good initiative for water conservation
Non Bio Waste	Non Bio Waste – Plastic Bottles / Paper Waste Metals waste is being collected in the dust bins placed across the campus.	College is doing well for "Swachh Bharat: Swasth Bharat"
E Waste	E Waste – All Electronic Junk is generated in the campus in the form of Used Computer key boards/ Mouse/ CPU's/ Damaged Printers etc.	An agreement is in place with local Company to pick up the E-waste Every Six Month
Carbon Foot Print	Mostly Staff & Student's commute in the College ST Buses	Found Good Awareness in the Staff & Students
Transportation	Few Students & Staff using EV Vehicles(Attached Photograph)	

Chapter No.1 Scope of Work & Green Audit Methodology

Kai. Rasika Mahavidyalaya, Deoni entrusted the work of conducting a detailed Green Audit of campus with the main objectives are as bellows:

Objectives of Green Audit:

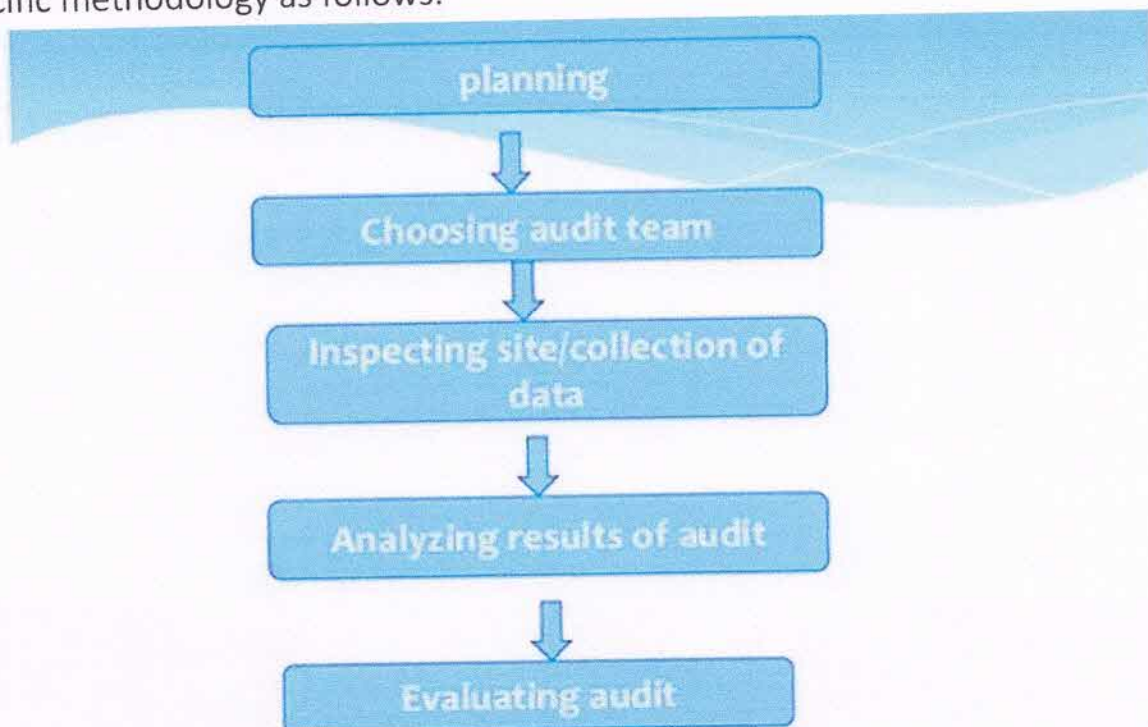
1. To examine the current practices, which can impact on environment such as of resource utilization, waste management etc.
2. To identify and analyze significant environmental issues.
3. Setup goal, vision, and mission for Green practices in campus.
4. Establish and implement Environment Management in various departments.
5. Continuous assessment for betterment in performance in green

Need of Green Audit:

Green auditing is the process of identifying and determining whether institutions practices are eco-friendly and sustainable. Green audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

Methodology of Green Audit:

Green Audit of Kai. Rasika Mahavidyalaya, Deoni Campus has been conducted with specific methodology as follows:



Goals of Green Audit:

Conducted a green audit of Kai. Rasika Mahavidyalaya, Deoni Campus with specific goals as:

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



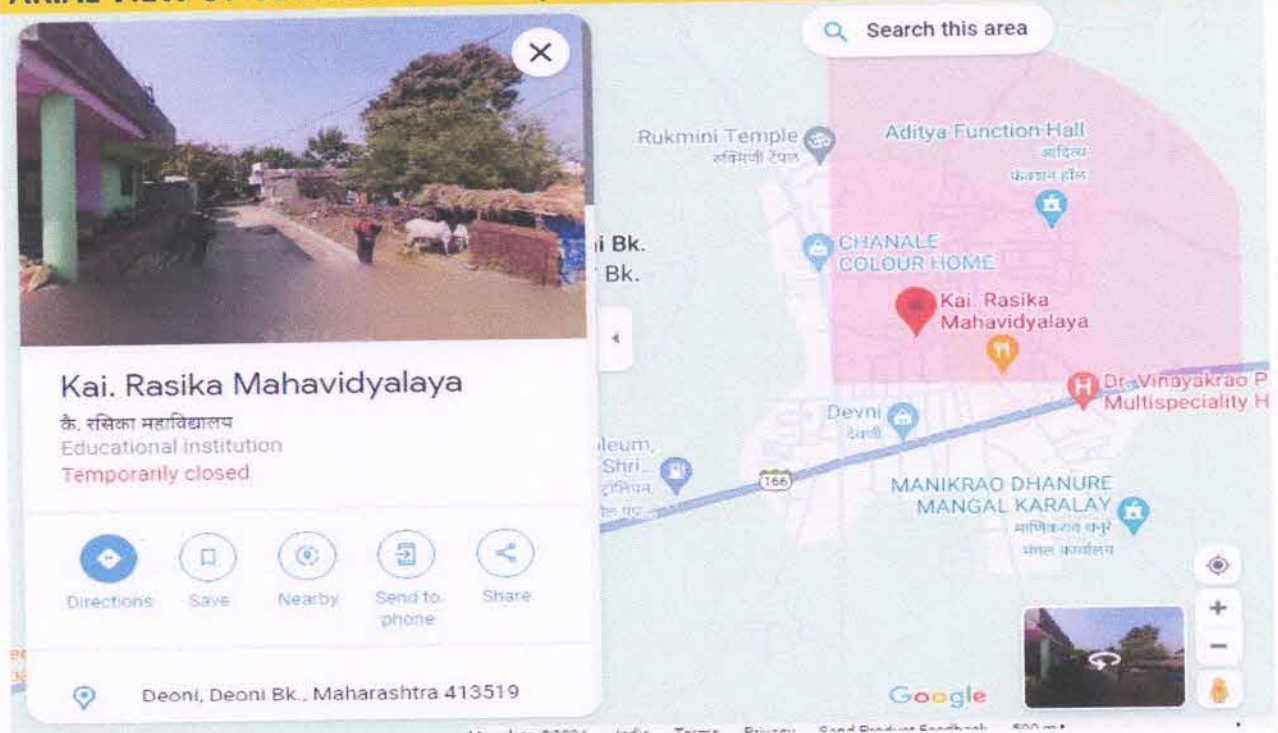
Chapter No.2 Introduction about the Institute

About the Institute

Janseva Sevabhavi Pratishthan, Bhopni's Kai. Rasika Mahavidyalaya, Deoni, Dist. Latur is established in the year 2008. The college is recognized by Government of Maharashtra and affiliated to Swami Ramanand Teerth Marathwada University, Nanded. The college has independent spacious and attractive building. All science departments Botany, Chemistry, Physics, Mathematics, Zoology and Computer science have well equipped laboratories. College has been included under 2(F) status in 2015 and 12(B) status in 2018. College is imparting the higher education to economically and socially backward class students of rural and remote area. It offers UG programs leading to B.Sc., B.Com, BCA and BCS. College located at Deoni, Dist. Latur. The college has been established mainly for Marathi speaking peoples in border disputed villages in Karnataka. College is engaged in the sustainable overall development of the students.

The Vision of the College is to provide accessibility towards higher education in rural areas, to impart quality education, to educate self-dependent & empower rural students. The mission of the college is to make real & practical oriented lives of rural students through holistic education.

ARIAL VIEW OF COLLEGE CAMPUS (SOURCE GOOGLE EARTH)

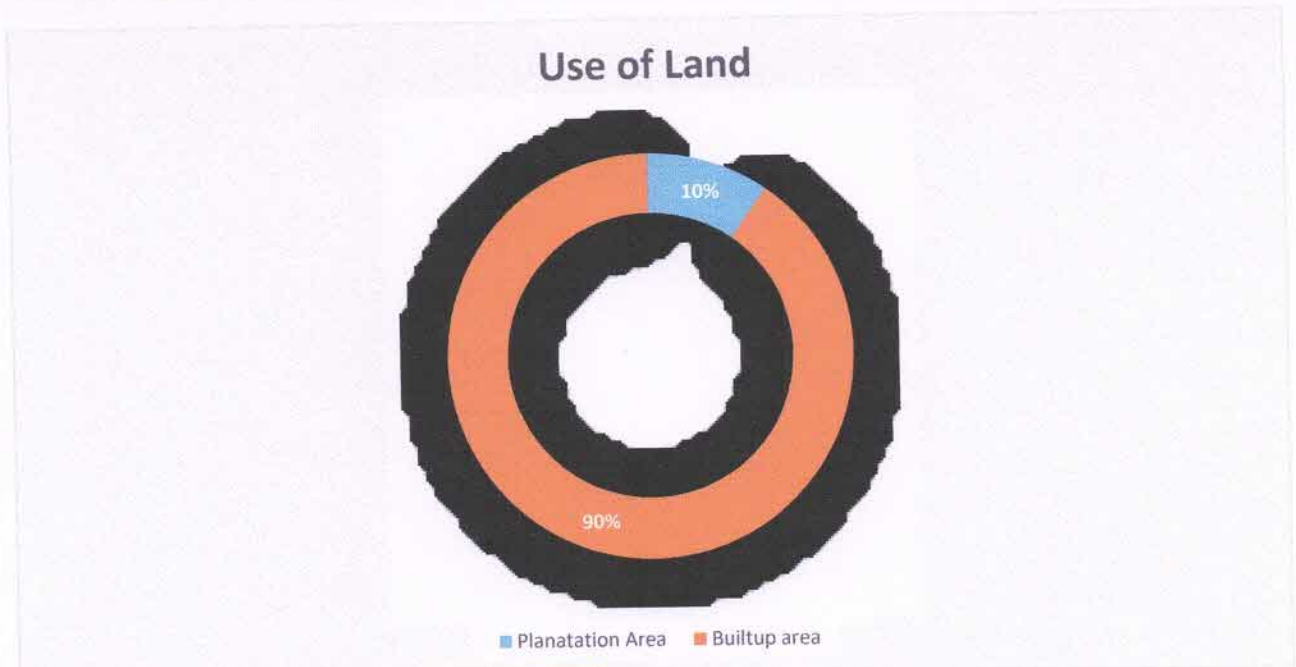


Address : Deoni, Deoni Bk., Maharashtra 413519

Chapter No.3 Categories of Land Use

Good Plantation of trees found in the campus and the green cover is extended every year in the college campus.

Audit Framework and detailed findings of the Audit:		
Built up Area	2860.26	SQM
Plantation Area	310.29	SQM



Observations : Plantation area 10%



Chapter No.4 Study of Waste Management

Solid waste Management



Observations: Institute has been done Good Management of the various types of degradable and non-degradable waste.

The college is taking utmost care of cleanliness and hygiene. Daily waste is collected by the cleaning staff and segregated into degradable and non-degradable waste.

Water Management



RAINWATER HARVESTING

The Future of Water Conservation



Observations:

Institute has been taken good initiative for water conservation.

Rainwater percolation pits were built in the campus to recharge bore well and help the water infiltration.

Rain Water Harvesting Filter Bed

Liquid Waste Management

Liquid waste is generated in the form of solvents, solutions, reaction mixtures, preparations, etc. It is scientifically disposed as per waste management norms. The liquid waste generated during practical is disposed through well-constructed drainage system which is flushed with water from wash basins.

E-waste management

The college is having facility to collect and disposed off periodically the e-waste from institutes, E-wastes such as old computers, printers, laptops, scanner, CD's etc. batteries are collected centrally. E-waste is given to authorized vendors for possible recycling. We have put the collection box in the institute, where e-waste is collected. Students are also made aware of E-waste issues and its safe disposal.

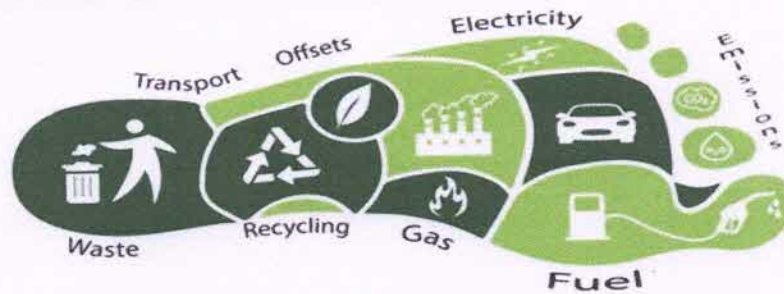
E. Hazardous chemicals and radioactive waste management

Campus is free from any kind of radioactive waste. Hazardous chemicals like strong acids, strong alkalis and oxidizing agents are used in restricted and small quantities during practical's and research. Separate space is provided for storage of hazardous chemicals with highly visible sign. Chemicals are diluted sufficiently and then released into soak pits. Use of hazardous liquid chemicals generating hazardous fumes is carried out strictly in fuming cupboard to avoid spread of fumes.



Chapter No. 5: Study of Carbon Footprint

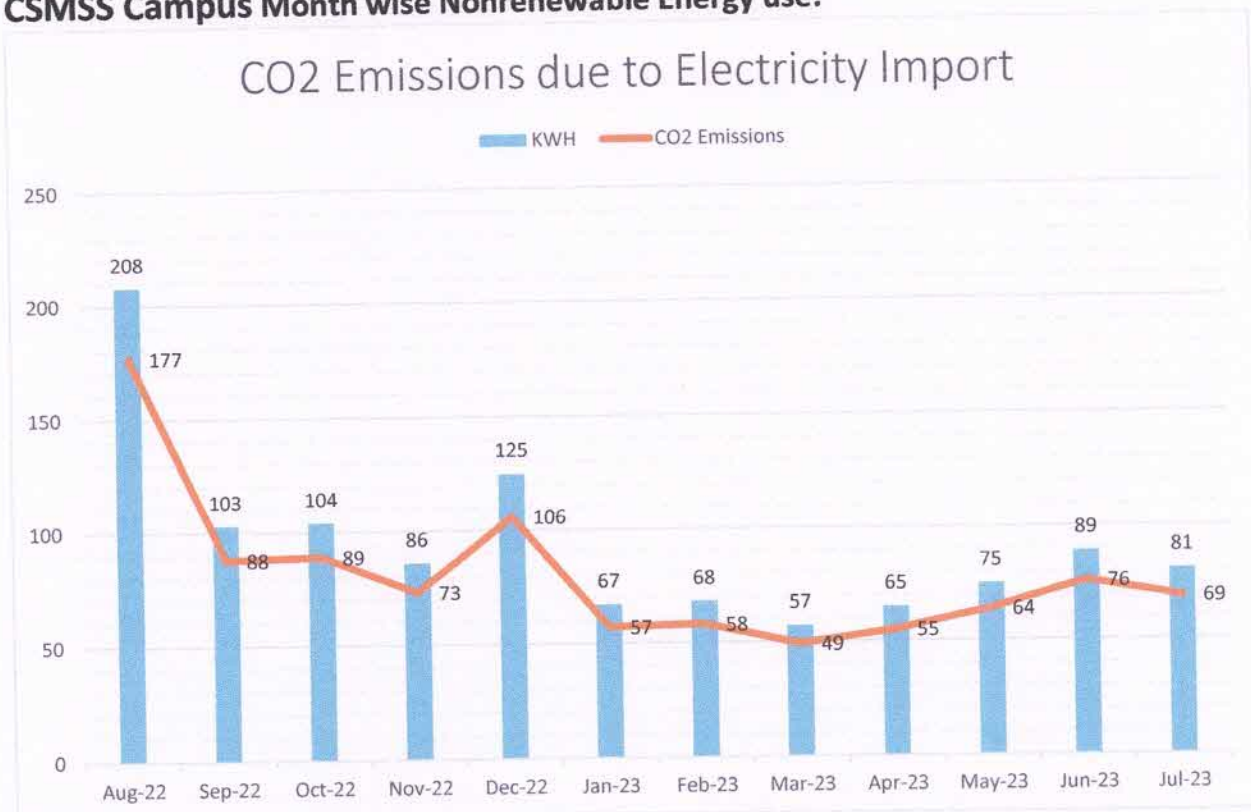
A **Carbon Foot print** is defined as the Total Greenhouse Gas emissions, emitted due to various activities. In this we compute the emissions of Carbon-Di-Oxide, by usage of the various forms of Energy used by the College for performing its day to day activities. The College Imports Electrical Energy during Night for various Electrical gadgets.



Basis for computation of CO2 Emissions:

The basis of Calculation for CO2 emissions due to Electrical Energy are as under 1 Unit(kWh) of Electrical Energy releases **0.8 Kg of CO2** into atmosphere. Based on the Data we compute the CO2 emissions which are being released in to the atmosphere by the College due to its Day to Day operations.

CSMSS Campus Month wise Nonrenewable Energy use:



Observations: The College Imports Electrical Energy during Night for various Electrical gadgets. Annual Electricity Import = **1128** KWH/year

Calculations: Electricity: Input value (in KWh/Yr.) X 0.85 (Emission Factor)
= Output value in (Kg of CO₂)

CO2 emissions due to IMPORT Electrical Energy = 958 Kg of CO₂ /year

Chapter No. 6 : Best Practices & Activities

Institute has been declared their Environment Policy

Policy Document On Environment and Energy Usage

- To install LED bulbs in the complete campus to save energy
- To operate institute building in most efficient energy manner.
- Maximum use of Renewable Energy.
- Encourage a culture of Energy conservation on campus.
- To take additional measures to continuously improve our energy consumption.
- To develop and maintain Energy Management System based on ISO: 50001.
- To encourage use of advanced technology to minimize energy consumption.
- To engage in dialogue with the government agencies, and actively work with the local organizations in the areas of environment, energy efficiency and sustainable development.
- To strengthen our employees' and students' environmental knowledge and skills in order to improve our own environmental performance.
- To provide information and training opportunities on energy saving measures.
- To train our employees and students through our Enviro Club to make them 'Go Green Specialists' and partners to plant trees each year.

Principal



Best Practices & Activities

Several significant and fruitful awareness programs both students and staff of the Campus are arranged every year in the campus. Reflections from students are Evident how effective such awareness programs conducted in the campus. Major programs conducted in the campus during the last Five years.

The National Pollution control day: The National Pollution Control Day or National Pollution Prevention Day is observed on December 2 every year in India. The objective of the day is to raise awareness about the different measures to control pollution and the prevention of industrial disasters.

Tree Plantation Campaign NSS DAY 24th September

Lifestyle for Environment NSS Activity



Environmental education through systematic environmental management approach





Campaigns: Nature camps, field trips and some of these activities are year round programs and others are regular year wiser semester wise or any other stipulated time bound programs.

Tree Plantation Campaign World Environment day 5th June



Green Initiative



Green Cover - Plantation of Trees

At present 33 No's of Plants recorded.

Plants List in College Campus

Sl. No	Botanical Name	Common Name	Family
1)	<i>Azadirachta indica</i>	Neem	Meliaceae
2)	<i>Ocimum sanctum</i>	Tulsi	Lamiaceae
3)	<i>Tectona grandis</i>	Sag	Lamiaceae
4)	<i>Phyllanthus emblica</i>	amla	Phyllanthaceae
5)	<i>Mangifera indica</i>	Mango	Anacardiaceae
6)	<i>Bambusa vulgaris</i>	Bamboo	Poaceae
7)	<i>Citrus lemonis</i>	Lemon	Rutaceae
8)	<i>Caesalpinia pulcherrima (L.)</i>	Peacock flower	Fabaceae
9)	<i>Callistemon citrinus</i>	bottlebrush	Myrtaceae
10)	<i>Caryota urens</i>	Sago palm	Arecaceae
11)	<i>Cathartus roseus</i>	Sada fulli	Apocynaceae
12)	<i>Duranta Erecta (L.)</i>	Golden dewdrop	Verbenaceae
13)	<i>Aegle marmelos</i>	Bel	Rutaceae
14)	<i>Pongamia pinnata</i>	Karanj	Fabaceae
15)	<i>Senecio asoca</i>	Ashoka tree	Apocynaceae
16)	<i>Nerium oleander</i>	Kaner	Fabaceae
17)	<i>Bauhinia purpurea</i>	butterfly tree	Fabaceae
18)	<i>Neolamarckia cadamba</i>	Cadamba	Rubiaceae
19)	<i>Ficus benghalensis</i>	Banyan tree	Moraceae
20)	<i>Epipremnum aureum</i>	Money plant	Araceae
21)	<i>Spathodes campanulate</i>	African tulip tree	Bignoniaceae
22)	<i>Melaleuca bracteata</i>	black tea-tree	Myrtaceae
23)	<i>Enteolobium cyclocarpum</i>	Ear pod tree	Fabaceae
24)	<i>Butea monosperma</i>	Palash	Fabaceae
25)	<i>Delonix regia</i>	Guinchar	Fabaceae
26)	<i>Ziziphus Juguba</i>	ber	Rhamnaceae
27)	<i>Cycas revoluta</i>	Sago Palm	Cycadaceae
28)	<i>Platycladus orientalis</i>	Thuja	Cupressaceae
29)	<i>Hibiscus rosa-sinensis</i>	Jaswand	Malvaceae
30)	<i>Canna indica</i>	Kardal	Cannaceae
31)	<i>Tabernaemontana divaricata</i>	Crepe jasmine	Apocynaceae
32)	<i>Bergora koenigii</i>	curry tree, Kadipatta	Rutaceae
33)	<i>Alstonia scholaris</i>	Palni	Apocynaceae



FIVE WAYS TO CONTROL CLIMATE CHANGE

	GREEN YOUR COMMUTE	<p>Explore new options to commute and reduce your carbon footprint. Choose to walk, share car, ride bicycle, or electric vehicle.</p>
	CONSERVE FUEL	<p>Stop the reckless of fuel and use it more sensibly. Conserving fuel reduces pollution for a cleaner and greener environment.</p>
	GET AN ENERGY AUDIT DONE	<p>Get an energy audit done to determine the overuse of energy.</p>
	PLANT TREES	<p>Plant trees and support reforestation. This way CO₂ level will be decreased, as trees use sunlight to absorb carbon dioxide from the atmosphere through photosynthesis and store it as carbon in the form of wood.</p>
	REDUCE, REUSE & RECYCLE	<p>Reduce paper use, reuse whatever you can and recycle waste materials into a valuable resource. Be an environmentally conscious consumer.</p>

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B.E. (Chemical) ; DIS ; DNY

Holistic Health Researcher



Kishore

प्रतिज्ञा

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EXECUTIVE SUMMARY:

Objective	Observation	Remarks / Recommendation
Green Cover - Plantation of Trees	Good Plantation of trees found in the campus and the green cover is extended every year in the CSMSS campus. At Present 9% area campus is having the Green cover.	Plantation started in the Campus and it is extended every year.
Use of Renewable Energy	Institute is planning to install 2KW rooftop solar power plant	Recommended for Solar Streetlight
Rain Water harvesting	Rainwater Harvesting has been installed for recharge bore well.	Good Water Management
Avoid Misuse/ wastage of water	Installed Water conservation Sign Board for conservation	Celebrate World Water day
Non Bio Waste	Non Bio Waste – Plastic Bottles / Paper Waste Metals waste is being collected in the dust bins placed across the campus.	Good Management
E Waste	E Waste – All Electronic Junk is generated in the campus in the form of Used Computer key boards/ Mouse/ CPU's/ Damaged Printers etc.	
Carbon Foot Print	Staff & Student's commute in the College ST Buses	
Transportation	Few Students & Staff using EV Vehicles(Attached Photograph)	Install Charging station for EV Vehicles



सर्वोच्च न्यायालय
केन्द्र शासित प्रदेश
केन्द्र शासित प्रदेश



ईंधन संरक्षण

आपके साथ शुरू होता है |



Chapter No.1 Scope of Work

Kai. Rasika Mahavidyalaya, Deoni entrusted the work of conducting a detailed Green Audit of campus with the main objectives given below.

Objectives:

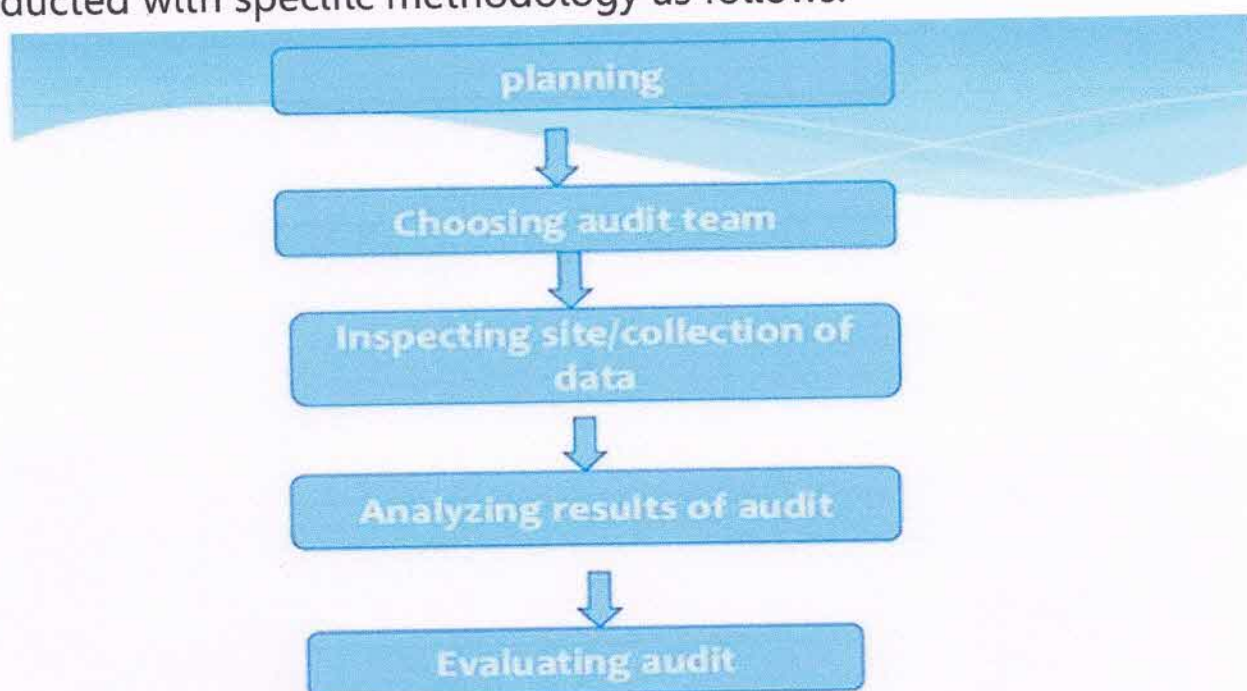
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2. To identify and analyze significant environmental issues.
3. Setup goal, vision, and mission for Green practices in campus.
4. Establish and implement Environment Management in various departments.
5. Continuous assessment for betterment in performance in green

Need:

Green auditing is the process of identifying and determining whether institutions practices are eco-friendly and sustainable. Green audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

Methodology:

Green Audit of **Kai. Rasika Mahavidyalaya, Deoni** Campus has been conducted with specific methodology as follows:

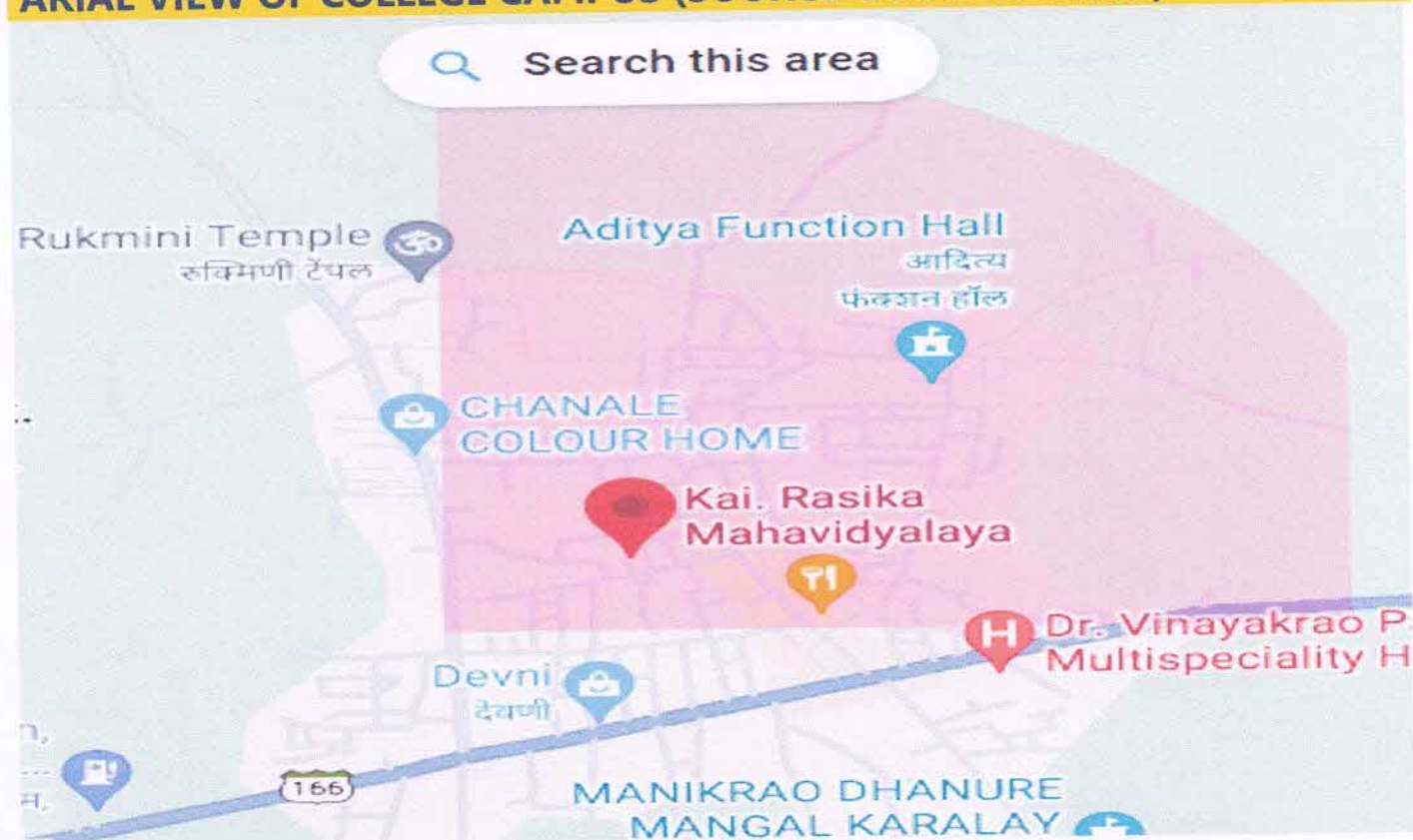


Chapter No.2 Introduction

Janseva Sevabhavi Pratishthan, Bhopni's Kai. Rasika Mahavidyalaya, Deoni, Dist. Latur is established in the year 2008. The college is recognized by Government of Maharashtra and affiliated to Swami Ramanand Teerth Marathwada University, Nanded. The college has independent spacious and attractive building. All science departments Botany, Chemistry, Physics, Mathematics, Zoology and Computer science have well equipped laboratories. College has been included under 2(F) status in 2015 and 12(B) status in 2018. College is imparting the higher education to economically and socially backward class students of rural and remote area. It offers UG programs leading to B.Sc., B.Com, BCA and BCS. College located at Deoni, Dist. Latur. The college has been established mainly for Marathi speaking peoples in border disputed villages in Karnataka. College is engaged in the sustainable overall development of the students.

The Vision of the College is to provide accessibility towards higher education in rural areas, to impart quality education, to educate self-dependent & empower rural students. The mission of the college is to make real & practical oriented lives of rural students through holistic education.

ARIAL VIEW OF COLLEGE CAMPUS (SOURCE GOOGLE EARTH)

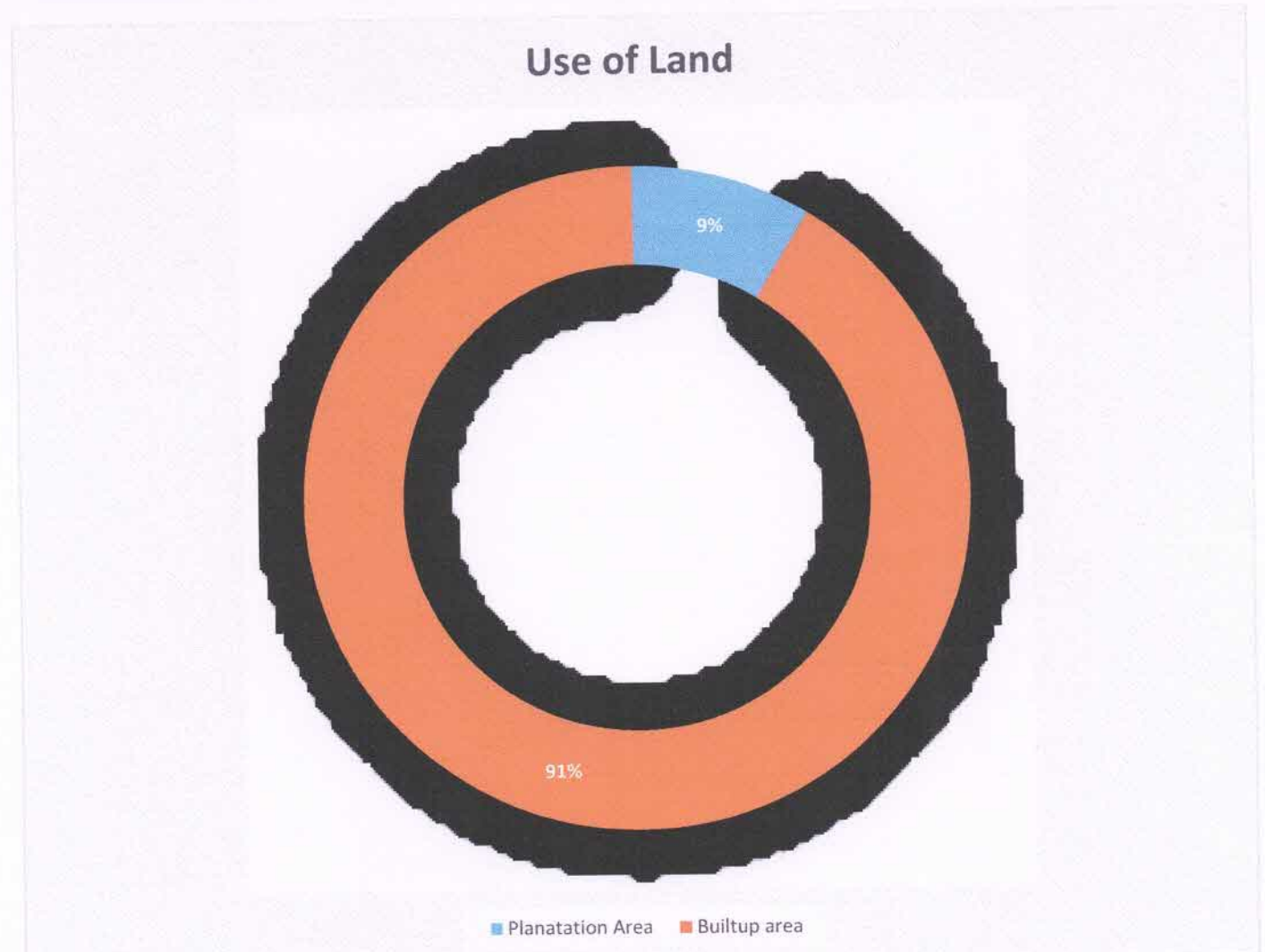


Chapter No.3 Categories of Land Use

Good Plantation of trees found in the campus and the green cover is extended every year in the college campus.

Audit Framework and detailed findings of the Audit:

Built up Area	2860.26	SQM
Plantation Area	275	SQM



Observations : Plantation area 9%

Suggestion's : Increase further Green Area

Green
Initiative



Chapter No.4 Study of Waste Management

Solid waste Management

Observations: Institute has been done Good Management of the s types of degradable and non-gradable waste.



The college is taking utmost care of cleanliness and hygiene. Daily waste is collected by the cleaning staff and segregated into degradable and non-degradable waste.

Water Management



RAINWATER HARVESTING

The Future of Water Conservation

Observations:

Institute has been taken good initiative for water conservation.

Liquid Waste Management

Liquid waste is generated in the form of solvents, solutions, reaction mixtures, preparations, etc. It is scientifically disposed as per waste management norms. The liquid waste generated during practical is disposed through well-constructed drainage system which is flushed with water from wash basins.

E-waste management

The college is having facility to collect and disposed off periodically the e-waste from institutes, E-wastes such as old computers, printers, laptops, scanner, CD's etc. batteries are collected centrally. E-waste is given to authorized vendors for possible recycling. We have put the collection box in the institute, where e-waste is collected. Students are also made aware of E-waste issues and its safe disposal.

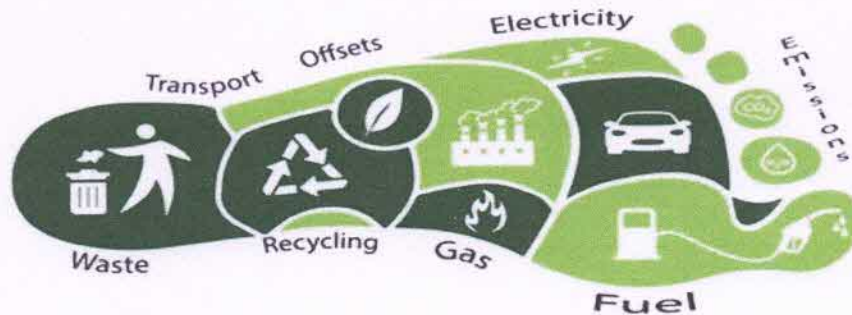
E. Hazardous chemicals and radioactive waste management

Campus is free from any kind of radioactive waste. Hazardous chemicals like strong acids, strong alkalis and oxidizing agents are used in restricted and small quantities during practical's and research. Separate space is provided for storage of hazardous chemicals with highly visible sign. Chemicals are diluted sufficiently and then released into soak pits. Use of hazardous liquid chemicals generating hazardous fumes is carried out strictly in fuming cupboard to avoid spread of fumes.



Chapter No. 5: **Study of Carbon Footprint**

A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. In this we compute the emissions of Carbon-Di-Oxide, by usage of the various forms of Energy used by the College for performing its day to day activities. The College Imports Electrical Energy during Night for various Electrical gadgets.



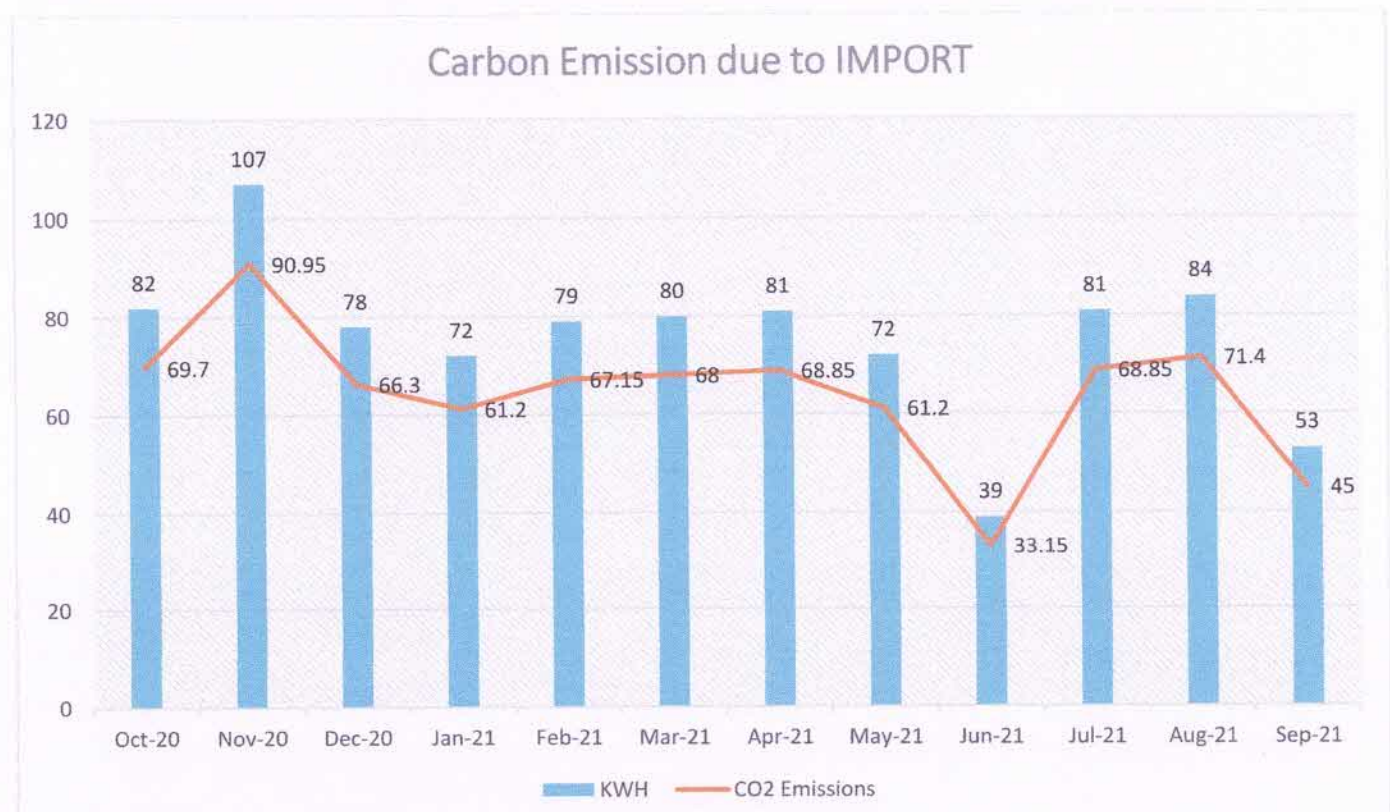
Basis for computation of CO2 Emissions: September 21 to October 20

The basis of Calculation for CO2 emissions due to Electrical Energy are as under **1 Unit(kWh) of Electrical Energy releases 0.8 Kg of CO2 into atmosphere. Based on the Data we compute the CO2 emissions which are being released in to the atmosphere by the College due to its Day to Day operations.**

Observations: The College Imports Electrical Energy during Night for various Electrical gadgets. Annual Electricity Import = **908 KWH/year**

Calculations: Electricity: Input value (in KWh/Yr.) X 0.85 (Emission Factor) = Output value in (Kg of CO₂)

CO2 emissions due to IMPORT Electrical Energy = 771.75 Kg of CO₂ /year



Chapter No. 6 : Best Practices & Activities

Several significant and fruitful awareness programs both students and staff of the Campus are arranged every year in the campus. Reflections from students are Evident how effective such awareness programs conducted in the campus. Major programs conducted in the campus during the last Five years.

Environmental education through systematic environmental management approach

Campaigns: Nature camps, field trips and some of these activities are year round programs and others are regular year wiser semester wise or any other stipulated time bound programs.

Tree Plantation Campaign World Environment day 5th June



FIVE WAYS TO CONTROL CLIMATE CHANGE



GREEN YOUR COMMUTE

Explore new options to commute and reduce your carbon footprint. Choose to walk, share car, ride bicycle, or electric vehicle.



CONSERVE FUEL

Stop the reckless of fuel and use it more sensibly. Conserving fuel reduces pollution for a cleaner and greener environment.



GET AN ENERGY AUDIT DONE

Get an energy audit done to determine the overuse of energy.



PLANT TREES

Plant trees and support reforestation. This way CO₂ level will be decreased, as trees use sunlight to absorb carbon dioxide from the atmosphere through photosynthesis and store it as carbon in the form of wood.



REDUCE, REUSE & RECYCLE

Reduce paper use, reuse whatever you can and recycle waste materials into a valuable resource. Be an environmentally conscious consumer.