GREEN AUDIT REPORT

2021-22

Dr. Khatri Mahavidyalaya,

Tukum, Chandrapur, Maharashtra
India

Report Prepared By

TLCs Nagpur

Dr. Khatri Mahavidyalaya, Tukum Chandrpur

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Preface

Nature provides free services to all. In recent years, environmental problems have increased by human activities and development of science and technology and planet earth is facing tremendous pressure from increases in population. The planet is becoming warmer by most discussed phenomena, the "Global warming". Quality of water, air, noise and soil is deteriorating beyond recovery. In order to know more about environmental degradation, there is need to identify them and implement mitigation measures for environmental protection.

Sustainable development is becoming popular in the world for saving the earth. Utilizing resources in judicially can save the earths precious resources. Measurement of environmental components is the most effective step to conserve and protect natural resources.

Environmental auditing had begun in the early 1970s with provision of civil lawsuits for non-compliance with environmental regulations. Green auditing involves on site visit, collection of samples, performing analyses, and report results to competent authorities. Industry, the corporate world is initiating auditing for saving natural resources. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

In the present write up "Green Audit" report, outline existing scenario of campus. A brief content of this report would help everyone to think about preserving resources, show willingness to learn their importance, adopt steps to minimize resource use and set an example for others to follow the path of green practices to achieve the goal of sustainable development.

We express our deep sense of gratitude to the Chairman of the of Dnyandeep Shikshan Prasarak Mandal, Dr. N. H. Khatri and management body of DSPM and Dr. S. B. Mohitkar, Principal of the college for their support in preparation of the report.

We would also like to acknowledge Dr. N.R. Dahegaonkar and Dr. P. M. Telkhade, NAAC coordinators for their encouragement in preparing the report. We are also thankful to Dr. Sushil B. Kapoor, for his whole hearted support.

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1. Introduction

Auditing is an evaluating system of college in terms of internal controls for achieving goals. Planning, on-site work, audit report preparation, and follow-up are the most essential stages of the auditing process. College, in addition to imparting education is committed to environmental protection by reducing environmental impacts such as reducing waste, water and energy consumption. The basic motive is to inspect ongoing processes in college whose exercises can be harmful to the health of students, all workforce and environment. Our intention is to achieve environmental sustainability by implementation of better environmental sound practices.

1.1 Planning of preparation of Green Audit involves comprehensive steps of observation and verification by on-site visit. Planning process started with a discussion among committee members, the objectives were framed, the methodology followed by sampling and final report preparation ended with a number of initiatives to be undertaken for environmental sustainability.

2. Objectives

Objectives are significant to enhance our vision which further converts in the measurement of environmental components for achieving goals. Earth's natural resources are important to support life, but its overexploitation can lead to disturbance of the natural balance. In present time, conventional auditing supported by Green Auditing may assist the college to manage environmental resources by effective environmental mitigation measures. The following objectives are systematic attempt to reach at a target which could guide us for safe and clean environment for all.

1. To observe land use for various purposes.

2. To record and document tree species and faunal diversity in the college premises.

3. To prepare an air quality observation report.

4. To analyse water samples for aesthetic parameters.

5. To record noise level in the college premises and outside area.

6. To study soil quality of the college campus.

8. To prepare report on E-waste disposal and management.

9. To study solid waste management practices in college campus.

10. To study electrical power consumption in college.

Environment Policy

Dr. Khatri Mahavidyalaya, Chandrpur has made it a policy to include environmental conservation in decision-making at all levels by stakeholders and to ensure that everyone is aware of the importance of environmental and natural resource conservation. Dr. Khatri Mahavidyalaya, Chandrpur encourages a forestation, landscape and ecosystem restoration, soil and water conservation, water quality maintenance, waste management, sustainable energy resources, biodiversity, and climate change mitigation programs and initiatives.

Mission of Environment Policy

Dr. Khatri Mahavidyalaya, Chandrpur policy is to protect the environment, create sustainable solutions, start-ups, encourage rural technology, and reduce energy usage in order:

- To raise student understanding of the need of natural resource protection and the creation of sustainable environments for national success.
- To encourage the development of technology in rural areas in order to achieve more inclusive growth.
- Adopting a fair, ethical, and ecologically conscious strategy that encompasses everything from implementation to student instruction via institutions.
- To assist in the development of a society that is conversion orientated and lives in peace with environment.

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Google Earth Image

Longitude - 19◦59’07”N79◦18’03”E-197m

Latitude - 79◦18’03”E

Figure 1- A green view of college campus

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Land use observation

The total area of Arts, Commerce & science, College is 10100 sq. meters out of which the built up area is 1908.397 sq. meters and open space & plantation area is 4691.6 and 563 sq.meters. Based on finding, it can be concluded that college campus covered with vegetation is adequate to curb pollutants from the air.

Build Up Area of the Institute	**1908.397 sq./M (3 storey building)**
Area of Plantation	**50%**
Total Area	**0.33 hectares**

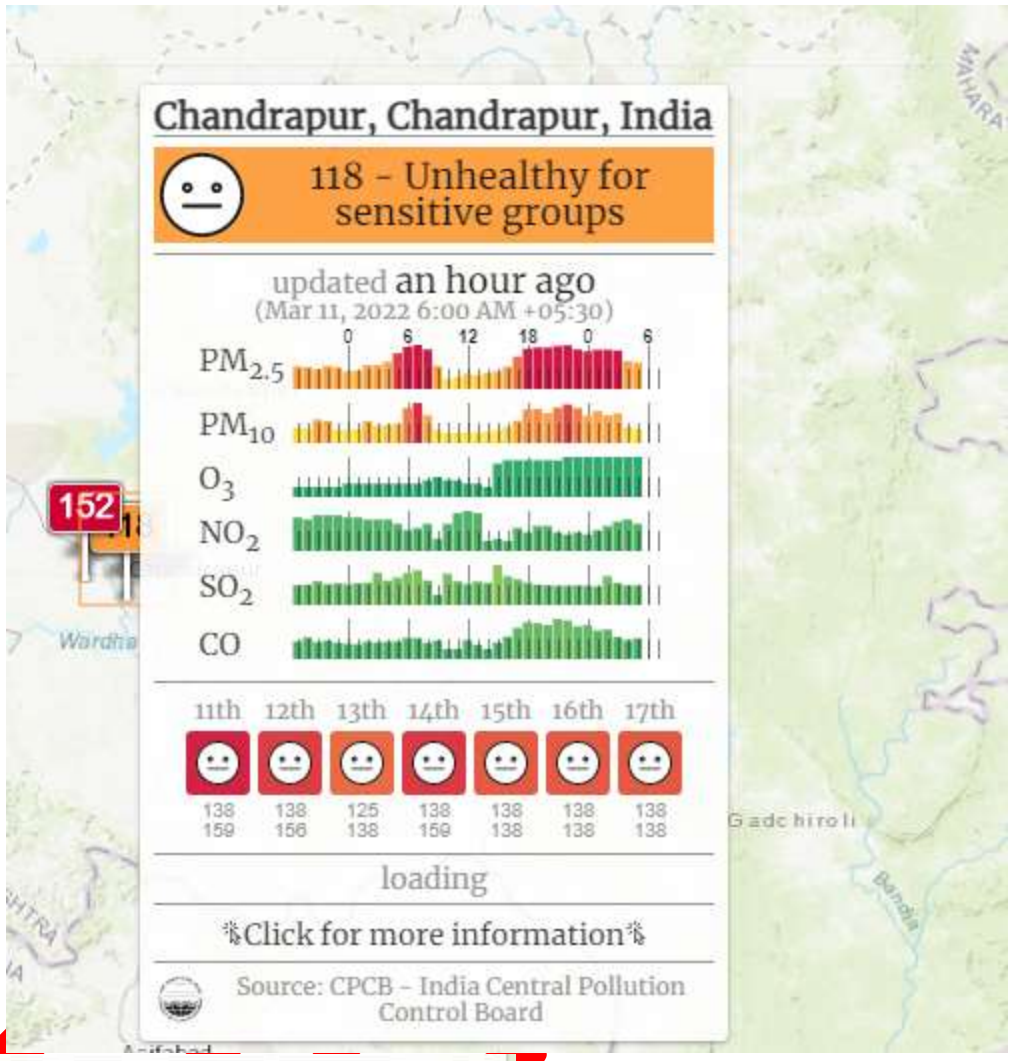
Air quality in college campus

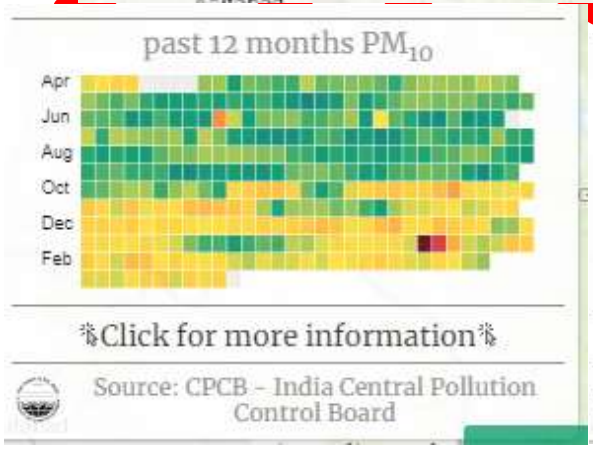
1. Temperature

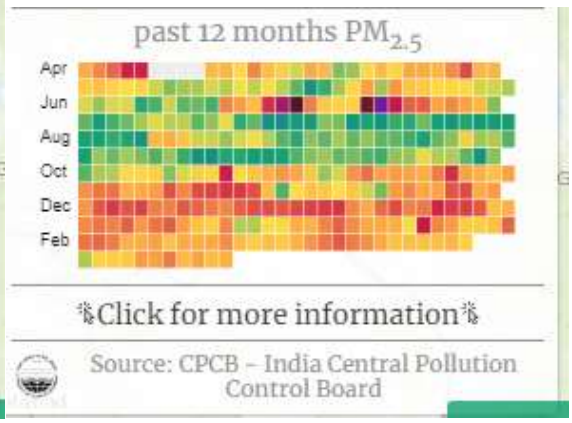
Average Temp of Summer	45°C
Average Temp of Winter	20°C
Average Temp of Rainy Season	30°C

The climate of Chandrapur has a hot and dry. December is the coldest month.

2. Air Quality Index







Dust collected over a period of time shows slightly higher concentration because of nearness of college to Thermal power plant, but green vegetation of college is effective to reduce dust pollution.

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Noise quality assessment report

The most crucial aspect of the noise management programme is noise quality measurement. It provides information about potential noise-generating areas in the workplace, as well as students and employees who may be affected. Noise measurements taken during peak hours provide useful data for planning, preventing, and managing noise in the workplace. If there is a noise problem in the workplace, it is useful to track noise measurements taken at several locations.

Sound Meter Results

Location	Noise Level In dB
First floor	**29**
Open passage- First floor	**33**
Ground floor	**38**
Library	**10**
Open Ground	**35**
College Office	**37**
Outside entry gate	**90**

Highest dB	**dB (Main Ga of Col**
Avg dB	65dB
Lowest dB	10dB (Library)

Because the en gate is loc d near Durgapur road, the noise level outside the entry gate is higher than e rest of e places.

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Water management and quality assessment report

Working-place water quality is critical since it affects people's health and livelihoods. A primary requirement is the provision of safe and reliable water. Groundwater and privately owned R.O. systems are the primary sources of drinking water. The groundwater is treated by the R. O. unit on the ground floor and first floor prior to being used by students and staff. Water is used by directing it towards the area that leads to the plantation after it has been used. The front-side rainwater harvesting equipment is operating at maximum percolation of rainwater. Water used in laboratories is diluted before being disposed of in a sewer line, where it mixes with sewage. Ground Physical and chemical properties of water used for drinking and laboratory purposes are measured. The College's Department uses air conditioners and free distilled water from the city, so the cost of producing distilled water by traditional distillation is reduced, and capital and electricity are saved.

Source of Drinking Water	Bore Well, Other
Source of Water that requires other than drinking	Bore Well
Hardness of Water	650mg/l(R.O.100 mg/l)
pH of Water	7.4
Quality of Water	Good

Parameter	Physical and Chemical analysis of water sample				
	Ground Water	R.O.Unit1	R.O.Unit 2	R.O. Water supplied by private owner	A/Cs condensed water
Colour	Colourless	Colourless	Colourless	Colourless	Colourless
pH	7.3	7.1	7.2	7.1	6.9
Conductance µS/cm	630	80	95	70	04
Total Hardness mg/l	330	12	10	14	NIL
Chloride mg/l	75	BDL	BDL	BDL	NIL
Fluoride mg/l	0.8	BDL	BDL	BDL	NIL
Sulphate mg/l	105	BDL	BDL	BDL	NIL
Phosphate mg/l	10	BDL	BDL	BDL	NIL

BDL-Below detectable limit

Soil quality assessment report

The goal of the soil quality assessment is to protect and improve the soil on campus while also increasing its fertility for plant development. The level of organic matter in soil is the most significant factor in sustaining soil quality. Litterfall in plantation areas is more than enough to keep soil organic matter at a healthy level. The following are the results of soil samples taken from the campus area.

VISUAL TEST (Main Campus Area)

Particle Type:	Fine grained (cohesive) & Granular (sand/sift or gravel)
Water Conditions:	Seeping Water
Type of material used to make Road	Cement, Gravels
Fertility of Land	Semi Fertile

Figure 2- Road inside the college

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Tree species diversity in the college premises

The majority of the trees are planted with the goal of lowering carbon dioxide levels in the atmosphere. The trees on the college campus help to stabilize the soil, provide habitat for diurnal and nocturnal creatures, and provide shelter for invertebrates. During the university examinations in the summer, trees on campus protect students from other colleges from the heat. Planting ornamental trees helps to maintain the aesthetic quality of the area. The college's plantation program had been in place since its founding. During an on-site visit, the following tree species were seen.

List of Tree Species in the college premises

Sl. No.	**Vernacular Name**	**Botanical Name**	**Family Name**	Number
1.	Teak (Sagwan)	*Tectona grandis*	*Verbenaceae*	03
2.	Karanj	*Pongamia pinnata*	Fabaceae	06
3.	Shisam	*Dalbergia sissoo*	Fabaceae	02
4.	Gulmohar	*Caesalpinia species*	Caesalpinioideae	01
5.	Gulmohar	*Peltophorum pterocarpum*	Caesalpinioideae	01
6.	Neem	*Azadirachta indica*	Meliaceae	05
7.	Jamun	Syzygium cumini	Myrtaceae	01
8.	Nilgiri	*Eucalyptus spceies*	Myrtaceae	02
9.	Ashoka	*Saraca indica*	Caesalpinioideae	04
10.	Ghanti	Cascabela thevetia	Apocynaceae	01
11.	Cotton Silk	*Ceiba pentandra*	Malvaceae	03
12.	Sitaphal	*Annona squamosa*	Annonaceae	01
13.	Vidya	*Thuja species*	Cupressaceae	02
14.	Fire craker plant	*Hemelia patens*	Rubiaceae	01
15.	Jungle Flame	*Ixora coccinea*	Rubiaceae	01
16.	Pygmy date Palm	*Phoenix roebelenii*	Arecaceae	06
17.	Dracaena	*Dracaena fragrans*	Asparagaceae	01
18.	Colcasiaesculanta	*Xanthosoma sagittifolium*	Araceae	02
19.	Shatavari (Musli)	*Asparagus racemosus*	Asparagaceae	01

20.	Ornamental	*Tradescantia pallida*	Commelinaceae	01
21.	Ornamental	*Rhoeo discolor*	Commelinaceae	01
22.	Cactus	*Euphorbia trigona*	Euphorbiaceae	01
23.	Bougainvillea	*Bougainvillea*	Nyctaginaceae	02

E-waste disposal and management

Because of technological advancements, the use of electronic devices is increasing at a quicker rate. People are buying more advanced electronic equipment while discarding older ones, resulting in an increase in E-waste generation. E-waste contains harmful compounds such as cadmium, chromium, and PCBs, which pose a health concern. On a college campus, e-waste creation is at a minimum. Because there is no adequate e-waste collection facility in the city, e-waste created in the college is simply handed over to a scrap collector.

Solid waste management

Solid waste is a heterogeneous material that must be disposed of in a methodical and environmentally conscious manner. The administrative office and the campus generate solid trash in college. Solid garbage generated on campus is separated and placed in green and blue collection receptacles. The Chandrapur Municipal Corporation has set up a system to collect solid trash on a regular basis. Plant litter is gathered and decomposed in a specially constructed hole (5x3.5x1.75). The configuration of laboratories' ventilation is efficient in reducing gaseous waste. There is no provision for proper lab waste disposable procedures installed in the college.

Electrical power consumption

Electrical power usage is linked to people's living standards, city growth, industry, and transportation sectors. Electricity is required to do normal tasks. By replacing obsolete fluorescent lighting with LED bulbs and tube lights, the college is committed to reducing electricity use. Students and staff are aware of the need of conserving energy by turning off electrical equipment when they are not in use.

Recommendations

Issue	Recommendation
1. Higher Noise level at Main Gate	1. Make a Green Canopy (Dense plantation) along the side of the college border. 2. Display No honking board or Sound Limit Board outside the gate.
2. Dust Particles from Thermal Power Plant	1. Denser plantation inside the college campus.
3. Proper disposable procedure for Chemical waste from Lab is not installed	1. Make a proper provision for the disposal of chemical waste.
4. Proper E-waste disposable	1. Find Out vendors from other cities for proper disposable.
5. Other	1. Display of Switch off Light, Energy saving, water Saving boards in Each Classroom, Staff rooms, and all Labs. 2. Display of Use Dustbin boards in college premises. 3. Display Parking board at proper Places. 4. Prepare one medicinal Garden. 5. Display No smoking and No tobacco boards.

------The End of Report -------