



Kolhapur Municipal Corporation's
Yashwantrao Chavan (KMC) College Kolhapur
Environment Audit Report



Prepared by
Department of Environmental Science,
Shivaji University, Kolhapur- 416004

2021-22



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with CGPA 3.52

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Certificate

This is to certify that the Department of Environmental Science, Shivaji University, Kolhapur has conducted detailed "Environmental Audit" of "Kolhapur Municipal Corporation's Yashwantrao Chavan (KMC) College Kolhapur" during the academic year 2021-2022. The Environmental audit was conducted in accordance with the applicable standards prescribed by Central Pollution Control Board, New Delhi and Ministry of Environment, Forest and Climate Change, New Delhi. The audit involves water, wastewater, energy, air, green inventory, solid waste etc and gives an 'Environmental Management Plan', which the institute can follow to minimize impact on the institutional working framework. The performance of college was found to have good quality. Eventhough there is more improvement needed with respect to sustainable Green practices in case of water resource management and Solid waste management. In an opinion and to the best of our information and according to the information given to us, said Environmental audit gives a true and fair view in conformity with environmental auditing principles accepted in India.



Aasawari Jadhav

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Yashwantrao Chavan (KMC) College, Kolhapur

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Principal's Message

Now-a-days, Green Audit, Energy Audit and Environment Audit of an institution have become significant topic for self Assessment, which reflects the role of the institution initiating the environmental problems of the present day. The rapid technological, economic, social development and urbanization at all the levels has created many ecological issues related to environment. In such a crucial situation, it is our primary duty to guard the Only Earth we have from the environment pollution. It's the liability of everyone to put in to the actions which save our environment. Our institution has been doing great efforts to keep the environment clean and green since its establishment. The main intention of this present green, environment and energy audits is to recognize measure, illustrate, document and prioritize the structure of surroundings.

Sustainability, Environment Sustainability has become a vital issue today and the role of HEIs in relation to this is more widespread. To find out the environmental performance of our institution, to analyze the possible solutions for converting the organization as eco-friendly campus, the green, environment and energy audits have become necessary. And the objective of such audits is to promote the environmental circumstances in and around the institute. So, I am happy that our institution is conducting these audits very intensely under the leadership of a team from the Shivaji University, Kolhapur. It positively enables us to act in answer to the environmental issues in prospect.

Thank you,

Place: Kolhapur

Dr. Arun V.Paudmal

Date: 04.08.2021 I/C Principal



Dr. ARUN PAUDMAL

I/C Principal

Yashwantrao Chavan (KMC) College,
Kolhapur



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Chapter - I

Introduction

1.1 Environment Audit, a Tool for Environmental Protection:

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

Environment Audit is the most efficient ecological tool to solve such environmental problems. Such audit was invented in late 1970s with the motive for inspecting the work conducted within the organization. It is systematic identification, quantification, recording, reporting and analysis of components of ecological diversity and expressing the same in financial or social terms. Through Environment Audit one gets a direction as how to improve the condition of environment.

1.2 Benefits of Environment Audit:

There are many advantages of Environment Audit if is implemented properly:

- It would help to protect the environment in and around the campus.
- Recognize the cost saving methods through waste minimization and energy conservation.
- Find out the prevailing and forthcoming complications.
- Empower the organization to frame a better environmental performance.
- It portrays good image of institution through its clean and green campus.

Finally, it will help to build positive impression for the upcoming NAAC visit.

1.3 NAAC Criteria VII Environmental Consciousness:

Environment Audit is assigned to Eco-club. The criterion VII of NAAC. National Assessment and Accreditation Council which is a self-governing organization that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time

of accreditation of the institution. The intention of Environment Audit is to upgrade the environmental condition in and around the institution. It is performed by considering some environmental parameters like water and wastewater management, energy conservation, waste management, air monitoring, etc. for making the institution eco-friendlier.

Students are the major strength of any academic institution. Practicing green actions in any educational institution will inculcate the good habit of caring nature in students. Many environmental activities like plantation and nurturing saplings and trees, cleanliness drives, bird watching camp, no vehicle day, rain water harvesting visits to ecologically important places through Eco clubs will make the student a good citizen of country.

Chapter II

Methodology

The College has conducted Environment Audit in the year 2021-22, on a yearly basis. The audit was carried out in three phases.

2.1 Questionnaire survey:

It includes administrative issues associated with the planning of audit, selecting the personnel for the audit team, preparing the audit protocol used by organization, obtaining background information, etc. The scope of the audit was defined at this step. It was decided that the information related to Water and Wastewater management, Energy conservation, Green belt, Carbon inventory, Solid waste management, Hazardous waste management, Air and noise quality status, activities of nature club, etc. should be gathered for the audit purpose. For collecting data related to these different areas, specific questionnaires were prepared.

2. 2 Onsite visit and observations:

The data related to above mentioned areas was collected by visiting each and every facility of College campus. The questionnaires were filled up according to the present situation. Photographic documentation was also done with the help of sophisticated camera.

2.3 Data analysis:

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

Environmental Auditing Process

Planning



Choosing audit
team



Inspecting site/
Collection of data



Analysing results
of audit



Evaluating audit

Chapter III

Overview of Environment Audit

3.1 Yashwantrao Chavan (KMC) College Kolhapur a glance:

Yashwantrao Chavan KMC College is one of the leading college to provide the opportunity of higher education to economically and socially disadvantaged students. Kolhapur Municipal Corporation established Yashwantrao Chavan KMC College to dispel this deficiency to develop college education. The College has huge campus with many classrooms, Arts and Commerce section, canteens, library facility, Auditorium, Gymkhana etc. Enormous manpower including students, administrative faculty, teaching and nonteaching faculty, workers use this huge premises for various purposes.

Yashwantrao Chavan KMC College, Kolhapur is situated in Maharashtra at $74^{\circ}13'4.23''\text{E}$ and $16^{\circ}41'53.77''\text{N}$, in the Kolhapur District. It covers an area of about 2.5 acre.

Satellite image of Campus Yashwantrao Chavan KMC College, Kolhapur.



Source: Google Earth

COLLEGE PROFILE IN BRIEF

| | |
|-------------------------------------|---|
| NAME OF THE COLLEGE: | Yashwantrao Chavan (KMC) College Kolhapur. |
| ESTABLISHMENT: | 1983 |
| PIONEERS: | Kolhapur Municipal Cooperation |
| No. OF STUDENTS: | 783 |
| FACULTY: | 12 |
| NON-TEACHING STAFF: | 11 |
| STRENGTH OF CAMPUS: | To provide the opportunity of higher education to economically and socially disadvantaged students |
| FACILITIES: | Gallery, Library, Sport, NSS and NCC facility |
| RESEARCH AND EXTENSION ACTIVITY: | College conducts different courses for the excellence of PG, Degree and Certificate courses. The College has a good number of extension activities like plantation of trees, cleanliness drive, cleaning of public places and village, seminars, workshops, environmental awareness campaigns, etc. |
| AREA OF COLLEGE: | 2.5 acres. |

3.2 Water and Wastewater Audit:

Water which is precious natural national resource available with fixed quantum. The availability of water is decreasing due to increasing population of nation, as per capita availability of utilizable water is going down. Due to ever rising standard of living of people, industrialization, urbanization, demand of fresh water is increasing day by day. The unabated discharge of industrial effluent in the available water bodies is reducing the quality of these ample sources of water continuously. Hence, the National Mission on Water Conservation was declared by the then Prime Minister Hon. Dr. Manmohan Singh in 2003 and appealed to all citizens to collectively address the problem of water shortage, by conserving every drop of water and suggested for conducting water audit for all sectors of water use.

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

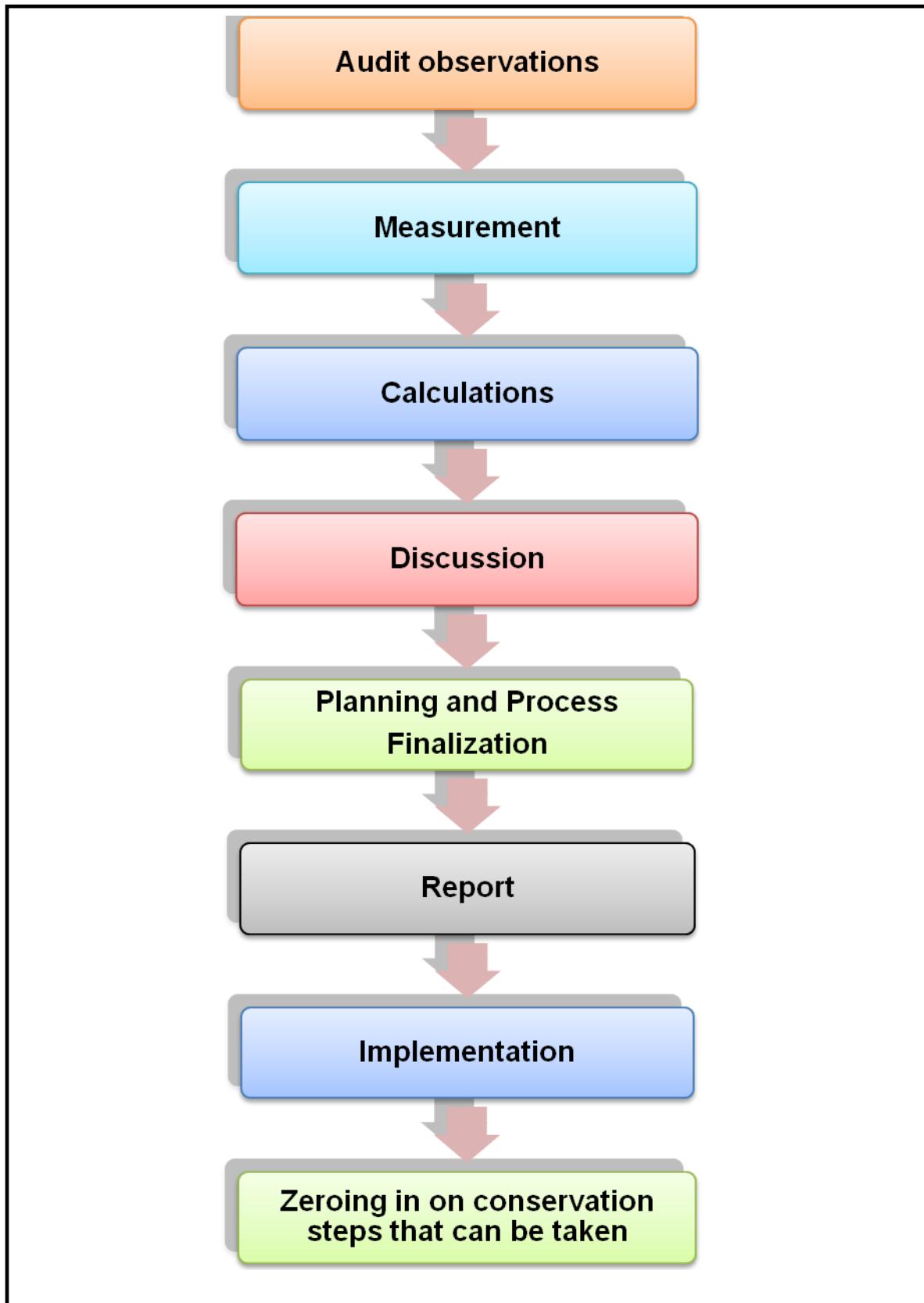
Importance of Water Audit:

It is observed that a number of factors like climate, culture, food habits, work and working conditions, level and type of development, and physiology determine the requirement of water. The community which has a population between 20,000 to 100,000 requires 100 to 150 liters per person (capita) per day. As per the standards provided by WHO Regional office for South East Asia Schools require 2 liters per student for drinking; 10-15 liters per student if water-flushed toilets, Administration requires (Staff accommodation not included) 50 liters per person per day, Staff accommodation requires 30 liters per person per day and for sanitation purposes it depends on technology.

3.2.1 Water Audit:

Water usage can be defined as water used for all activities which are carried out on campus from different water sources. This includes usage in all residential halls, academic buildings, on campus and on grounds. Wastewater is referred as the water which is transported off the campus. The wastewater includes sewerage, residence, hall waters used in cooking, showering, clothes washing as well as wastewater from chemical and biological laboratories which ultimately going down in sink or drainage system

Water Audit Process



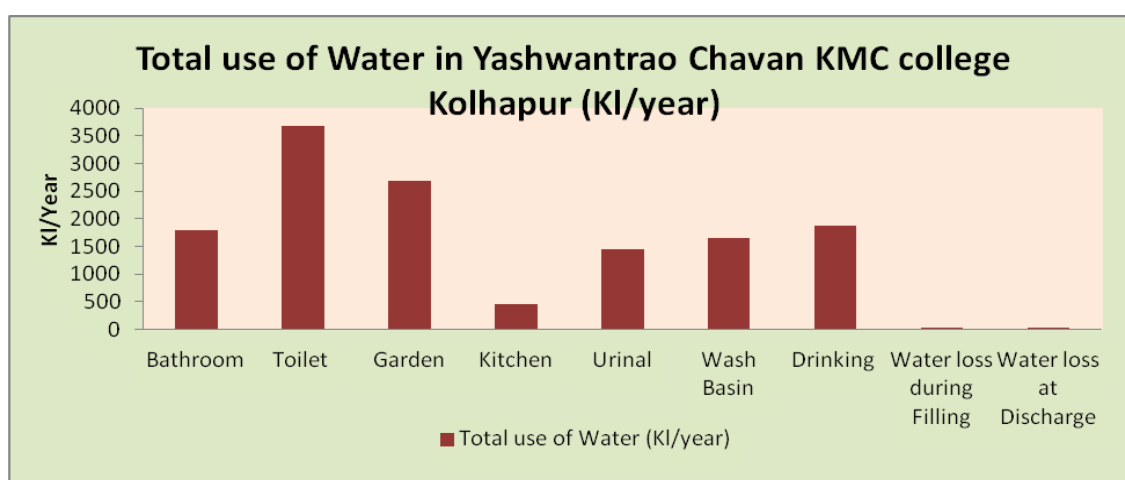
3.2.2 Water consumption in College:

From the data collected for water audit of Yashwantrao Chavan (KMC) College Kolhapur the water distribution and water consumption pattern is noticed. The College includes Main Building with Staff room and Principal room, Exam section and Ladies room. Also, all Departments of Arts and Commerce including language. College has support services like Gymkhana, Canteen, Auditorium, Garden, library, NSS and NCC section etc.

3.2.2. a The water consumption at Yashwantrao Chavan KMC College Kolhapur:

Table No. 3.2.1: Sector wise calculated use of water in KMC College Kolhapur

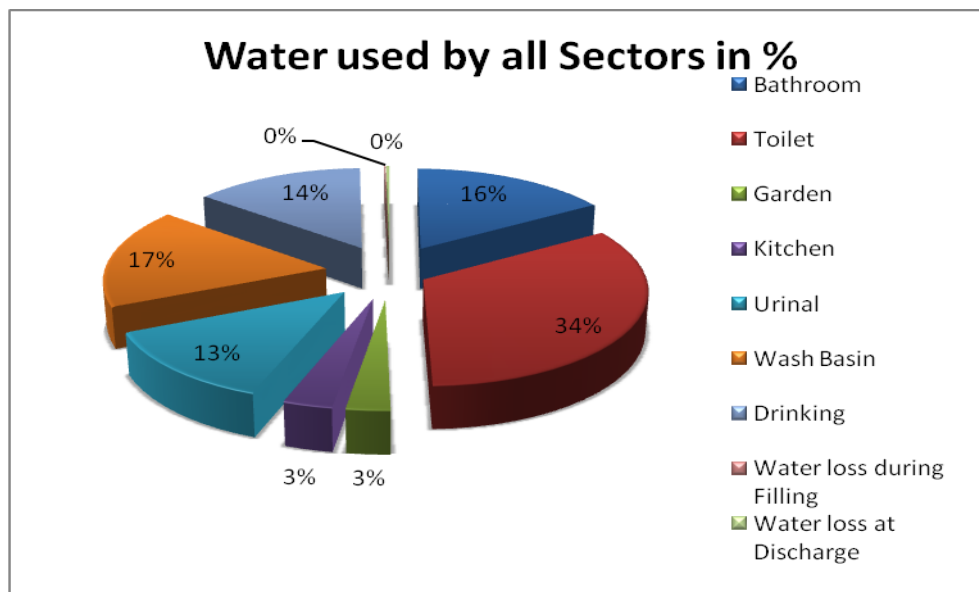
| Sr. No. | Sector | Total daily use (Kl/day) | Total yearly use (Kl/year) | Percentage % |
|--------------|---------------------------|--------------------------|----------------------------|--------------|
| 1 | Bathroom | 14.3 | 1787.5 | 13.12 |
| 2 | Toilet | 29.4 | 3675.0 | 26.98 |
| 3 | Garden | 16.8 | 2688 | 19.73 |
| 4 | Kitchen | 2.8 | 448 | 3.29 |
| 5 | Urinal | 11.6 | 1450 | 10.64 |
| 6 | Wash Basin | 13.2 | 1650 | 12.11 |
| 7 | Drinking | 15.00 | 1875 | 13.77 |
| 8 | Water loss during Filling | 0.096 | 12 | 0.09 |
| 9 | Water loss at Discharge | 0.28 | 36 | 0.26 |
| Total | | 103.48 | 13621.5 | 100 |



Graph No. 3.2.1 Total water consumption yearly by KMC College Kolhapur

It is revealed from the data given in Table No. 3.2.1 and Graph No. 3.2.1 that total **103.48** Kiloliter daily and yearly 13621.5-Kiloliter water is used. College includes Main Building, having Staff room and Principal room, Exam section and Ladies room. Also all Departments of Arts and Commerce including languages. College has support services like Gymkhana, Canteen, Auditorium, Garden, library, NSS and NCC section using water is seen for bathrooms, toilet, drinking, wash basin, kitchen, and urinal purpose for daily and also calculated yearly. From above data, it is observed that the maximum water consumption was for Toilets which is 29.4 Kilolitre/day i.e. 3675 Kilolitre/year and for Garden purpose 16.8 Kilolitre/day and yearly 2688 Kilolitre/year. Water loss during filling of water in tank was noted as 0.096 Kilolitre/day i.e. 12 Kilolitre/year and water losses at discharge were found to be 0.288 Kilolitre/day i.e. 36 Kilolitre/year.

3.2.2. Average daily water consumption by Yashwantrao Chavan KMC College Kolhapur.



Graph No. 3.2.2 Average Daily Water consumption by Yashwantrao Chavan KMC College Kolhapur.

Graph No. 3.2.2 shows the total percent of water consumed by Yashwantrao Chavan KMC College Kolhapur in the 2021-22. As per the graph Toilets, Garden, Bathroom, Drinking, and Urinal are the major sources of utilization comprising 34%, 17 %, 16%, 14% and 13% respectively. The other uses namely Wash Basin and Kitchen consume relatively less water with daily water requirement of 3 % and 3 % respectively in the year 2021-22.

3.2.3 Sustainable Water Practices (SWP):

3.2.3.a. Collection tank for water storage.

KMC College has a water collection tank near front side of main building near Kitchen or Canteen area and backside of building. These tanks are useful to supply water for garden purpose, for canteen and for other activities.



Collection tank for water storage

3.2.3. b. Rainwater collection pipe for Ground water recharging:

KMC College is having rain water collection pipe which helps to collect rain water from roof top area of college which helps for ground water recharging.



Ground water recharging Pipe

Key Observations:

- The calculation revealed that highest water use sectors are Toilets, which consumes average 34 % water, and remaining 66% water consumption further divided into other sectors in such Garden, urinals, bathroom and Kitchen etc.
- College has some water conservation practices such as water collection tank, Ground water recharging pipe.
- There is no safe drinking water facility in the college like water filters or water purification unit.
- To enhance the operating efficiency and reduce the water wastage, College should include more sustainable water practices (SWP) such as Rain Water Harvesting project for whole College, Wastewater treatment plant, Drip irrigation for gardening and Water sub metering etc.

3.3 Solid waste audit of the college:

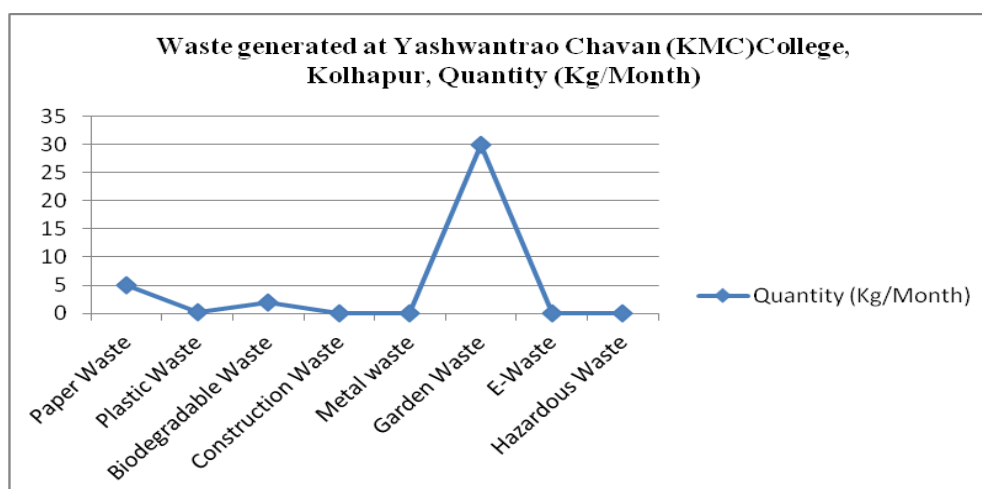
Solid waste management is a term that refers to the process of collecting and treating solid wastes. As long as people have been living in settlements, garbage and solid waste has been an issue. In recent years, it is observed that per capita waste generation has increased due to the changing life style. Improper disposal of solid waste is responsible for pollution of air, water and soil. Disposal of solid waste on open area leads to develop bad odour in the surrounding also it may develop unhygienic conditions. Improper waste disposal is root cause for spreading the infectious diseases among the human and animal. So, it is important to take some steps for the proper management of solid waste followed by reduce, reuse and recycle 3R principle. The intention of this inventory is to find out the quantity of waste generation and disposal methods which are currently followed at College of management, education and research.

Solid waste audit of college was conducted by grouping the college into Main building and college premises. Different types of waste are generated in the college campus. Dustbins are fixed in the building which is used for collection of waste.

3.3.1 Generation of solid waste in college:

Table No.3.3.1: Category wise solid waste generation in college (kg/month)

| Waste type | Paper Waste | Plastic Waste | Biodegradable Waste | Construction Waste | Metal waste | Garden Waste | E-Waste | Hazardous Waste |
|---------------------|-------------|---------------|---------------------|--------------------|-------------|--------------|---------|-----------------|
| Quantity (Kg/Month) | 5 | 0.2 | 2 | 0 | 0 | 30 | 0.1 | 0.1 |
| Quantity (Kg/ Year) | 50 | 2 | 20 | 0 | 0 | 300 | 1 | 1 |



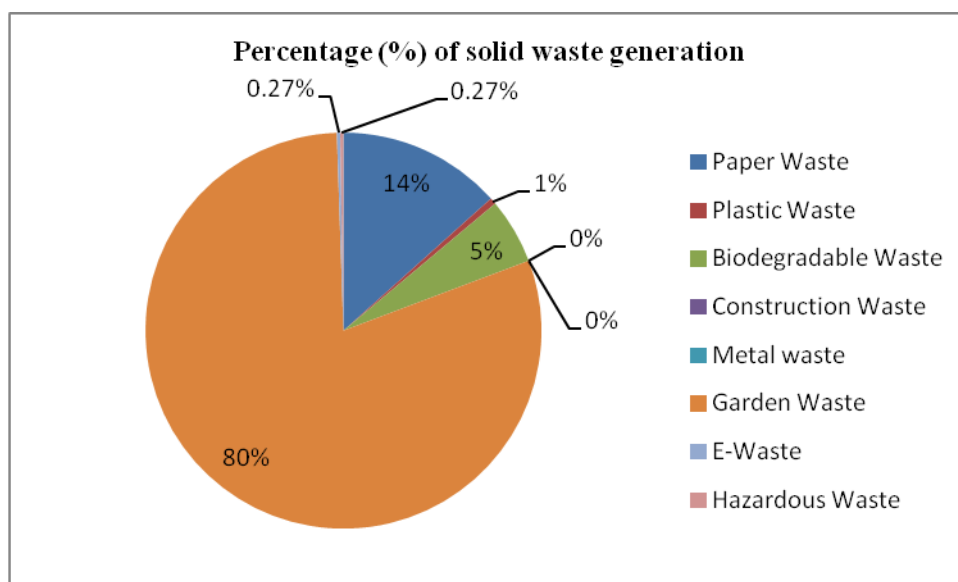
Graph No. 3.3.1: Category wise solid waste generation in college (kg/month)

The average amount of solid waste generated per month in Yashwantrao Chavan (KMC) College, Kolhapur is approximately 37.4 kg/month. On the basis of observations, the highest quantity of solid waste generated is Garden waste which is about 30 kg/month. This waste is produced because of leaf litter and other garden waste.

Besides, the above mentioned waste, plastic waste is generated in the form of plastic wrappers of food items. Approximately 5 kg/ month paper waste is generated in the institution and that is given to the vendor.

Table No. 3.3.2: Percentage of category wise solid waste in the college (kg/month)

| Category | Paper Waste | Plastic Waste | Biodegradable Waste | Construction Waste | Metal waste | Garden Waste | E-Waste | Hazardous Waste |
|----------------|-------------|---------------|---------------------|--------------------|-------------|--------------|---------|-----------------|
| Percentage (%) | 13.37 | 0.53 | 5.35 | 0 | 0 | 80.21 | 0.27 | 0.27 |



Graph No. 3.3.2: Percentage of solid waste generation in the college (kg/month)

Percentage wise distribution of different sources of solid waste is shown in the above graph. The maximum percentage of solid waste generated is of garden waste which is approximately 80.21 % and minimum percentage of E-waste and hazardous waste generated is about 0.27 %.

3.3.3 Plastic Waste:

Table No. 3.3.3: Plastic waste generation and its distribution in the college

| Category | Plastic Kg/month | | | | Total |
|------------|------------------|------|------------------------------|-------|-------|
| | Hard | Soft | Carry Bags and Water bottles | Other | |
| Quantity | 0 | 0 | 0.2 | 0 | 0.2 |
| Percentage | 0 | 0 | 100 | 0 | 100 |

Plastic waste in the form of packaged food wrappers, carry bags etc. is approximately 0.2 kg/ month. Plastic wastes are difficult to dispose because it is non-biodegradable waste or it takes many years to degrade naturally. It can cause adverse impacts on environment.

3.3.4 Hazardous waste audit of the college:

Hazardous waste is waste that has substantial or potential threats to public health and environment. The sources of hazardous waste in the college are very less. Very less quantity of hazardous waste generated through Sanitary napkins. For disposal of sanitary napkins incinerator is provided in college.

3.3.5 E-waste generation in the college:

Generation of e-waste is found in every educational College. All discarded electronic appliances are called as E-waste. This waste requires special treatment for disposal. So it is also called as special waste. It is observed that the e-waste generated at College is of Schedule II category. Computers, printers, scanners, CPU's, UPS, fused bulbs and tubes are used for administrative work. The wire required for the network connectivity and for electricity also gets included in the E-waste.

3.4 Eco-friendly solid waste management practices:

The college follows following eco-friendly solid waste management practices.

1. Paper waste recycling:

Paper waste is handed over to the vendor for recycling. This waste includes newspapers as well as office work paper.

2. E waste recycling:

All the E waste generated in college premises is recycled through vendor.

3. Collection of waste:

For waste collection, dustbins are provided wherever required.



Figure 1: Dustbins are provided for waste collection

4. Hazardous waste disposal:

For the disposal of sanitary napkins incinerator is installed in college.



Figure 2: Incinerator

Key Observations:

- The average waste generated in the college is app. 37.4 Kg /month
- Highest quantity of solid waste is garden waste which is around 30 Kg/month.
- Over all the waste generated in the college is handed over to Kolhapur Municipal Corporation for disposal.
- Paper waste is given to the vendor for recycling.
- The college premises need to be cleaned properly as it is one of the educational Colleges.
- Lots of rotten materials, food wrappers, papers are making the premises ugly.
- Solid waste should be disposed properly instead of burning it on campus.
- Incinerator should be in operating condition.

3.4. Air Quality Status:

In the majority of developing nations, air pollution is one of the biggest and most serious environmental and public health concerns. The goal of an air quality assessment is to provide insight into the present status of the air quality at our campus location as well as the many causes and consequences of air pollution. Air pollution occurs when pollutants (gases, dust particles, smoke) are released into the atmosphere by both human activities (such as factory or auto emissions) and natural events (forest fires, volcanic eruptions, wind erosion, pollen dispersal, or natural radioactivity, for example). Humans, infrastructure, and the environment are all harmed by these contaminants.

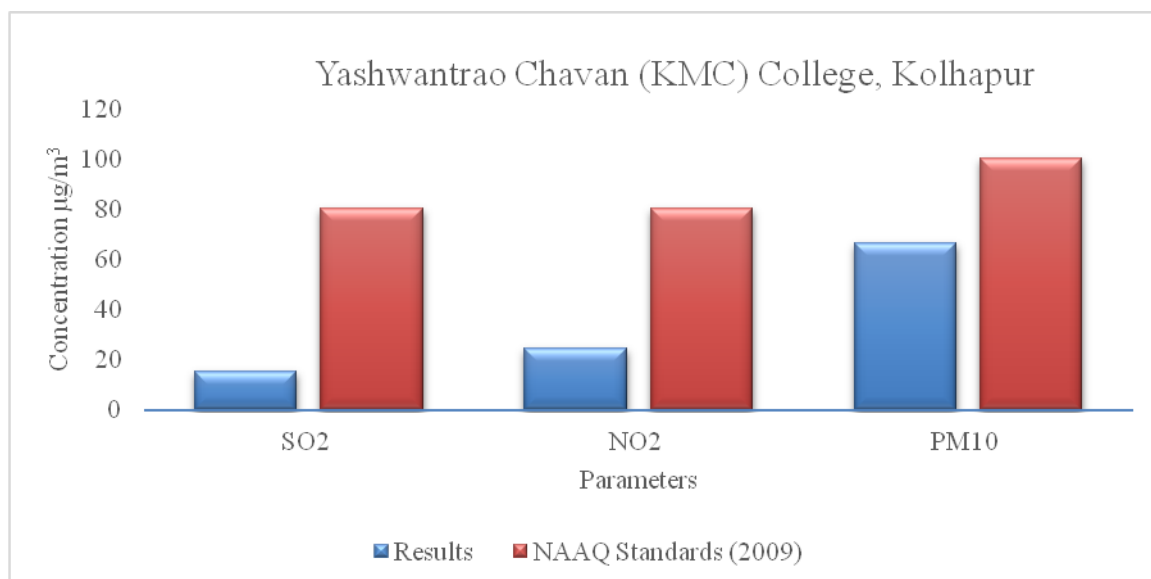
Ambient air pollutants monitoring is an important part of environmental monitoring. Particulate matter and trace gases sampling were carried out on the college campus. The sampling was carried out using calibrated Handy Dust Sampler APM 821 with flow rate 1 lit/min equipped with glass fibre filter paper (size 25 mm). The sampling period was 2 hrs.

Sulphur dioxide (SO₂) and Oxides of Nitrogen (NO₂) in the air were estimated with West and Gaeke method and Jacob and Hochheiser modified method respectively. Particulate matter (PM₁₀) was measured gravimetrically. The samples were collected and analysed in the laboratory of Department of Environmental Science, Shivaji University, Kolhapur. The details of air quality status in Yashwantrao Chavan (KMC) college, Kolhapur. are given in the Table No. 3.5.1 and Graph No. 3.5.1

Table No. 3.4.1. Ambient air quality status in Yashwantrao Chavan (KMC) college, Kolhapur.

(All values in µg/m³)

| Sr. No | Parameters | Results | NAAQ Standards (2009) |
|--------|------------------|---------|-----------------------|
| 1 | SO ₂ | 15.12 | 80 |
| 2 | NO ₂ | 24.29 | 80 |
| 3 | PM ₁₀ | 66.30 | 100 |



Graph No. 3.4.1 Ambient air quality status in Yashwantrao Chavan (KMC) college, Kolhapur.

The graph shows the SO₂, NO₂ and PM₁₀ concentration. The concentrations of the air pollutants are above the CPCB standards. It was observed that few activities in the campus are responsible for air pollution.

Key Observations:

1. Burning of leaf litter on college campus.
2. Loose soil is a source of particulate matter.

3.4.1 Ambient noise monitoring status:

Ambient noise monitoring was carried out in different areas of college campus like at classrooms, labs, and campus. The sampling was done using calibrated Sound Level Meter (AZ 8921) by logarithmic scale in Decibels (dB). The noise readings were collected in the college campus and calculated. The details of noise status in Yashwantrao Chavan (KMC) college, Kolhapur. are given Table No. 3.13 and Graph No. 3.12.

Table no 3.13 Ambient Noise levels in Yashwantrao Chavan (KMC) college, Kolhapur.

(All values in dB (A))

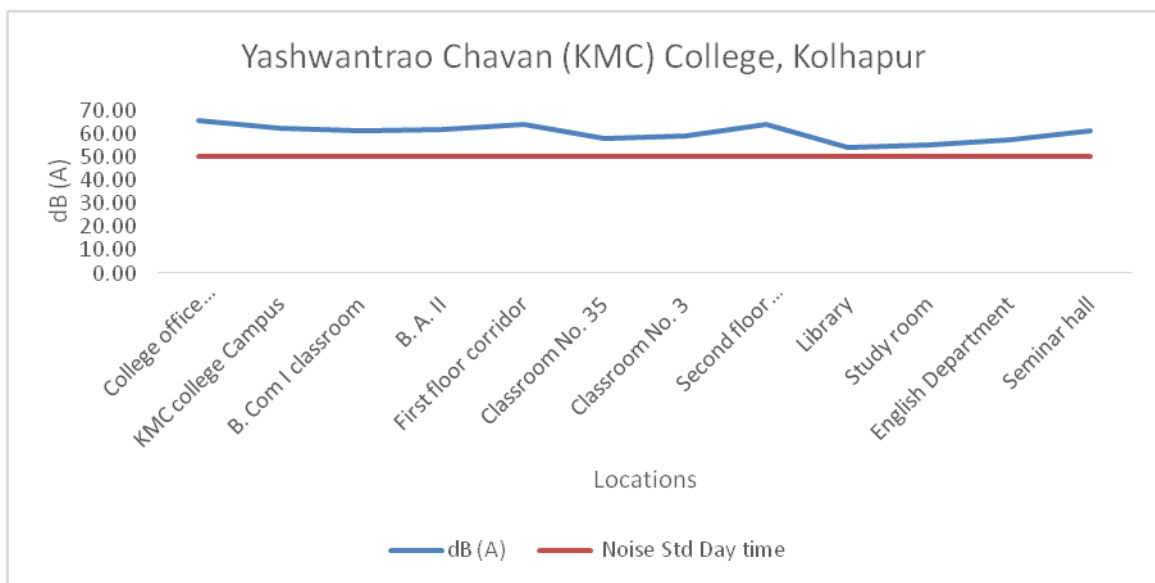
| Sr. No | Site Name | Day time Noise | Noise Std Day time |
|--------|-------------------------|----------------|--------------------|
| 1 | College office corridor | 65.66 | 50 |
| 2 | KMC college Campus | 62.40 | 50 |
| 3 | B. Com I classroom | 61.20 | 50 |
| 4 | B. A. II | 62.10 | 50 |

| | | | |
|----|------------------------|-------|----|
| 5 | First floor corridor | 64.20 | 50 |
| 6 | Classroom No. 35 | 57.80 | 50 |
| 7 | Classroom No. 3 | 59.01 | 50 |
| 8 | Second floor classroom | 64.20 | 50 |
| 9 | Library | 54.10 | 50 |
| 10 | Study room | 55.20 | 50 |
| 11 | English Department | 57.45 | 50 |
| 12 | Seminar hall | 61.10 | 50 |

Note: - 1. All Parameters are in dB(A) Leq.

2. All Results are day time.

3. Day time shall mean from 6.00 a.m. to 10.00 p.m.



Graph No.3.12 Ambient Noise levels in Yashwantrao Chavan (KMC) college, Kolhapur.

Noise levels were measured in 12 locations at the Yashwantrao Chavan (KMC) college, Kolhapur as shown in Table 3.13. All locations in the college have high noise levels.

Since the educational institutes comes under silent zone category, the noise readings are compared with silent zone day time standards as per Noise pollution (Regulations and Control) Rules, 2000.

Loud human communications are major sources of noise on college campus. Vehicles and their horns are generating high-level sound. The echoes generated in classrooms is another major source of noise.

Key observations:

1. Around the college is a residential area. Home appliances and human communication generate major source.
2. The echoes generated in classrooms

3.5 Environmental awareness through activities conducted by KMC College

1. At Yashwantrao Chavan (KMC) College, Kolhapur, an oath was taken by the National Service Scheme Department to keep the college premises green under 'Majhi Vasundhara Abhiyan'. On this occasion Hon'ble Shilpa Darekar Deputy Commissioner (KMC), Principal Dr. Paudmal, Prof S. T. Dhurwe program officers (NSS), faculty and NSS volunteers were present.



2. On 24th November 2021, 200 trees were planted at Puikhadi under 'My Vasundhara Abhiyan' in collaboration with National Service Scheme Department, Yashwantrao Chavan KMC College Kolhapur and Kolhapur Municipal Corporation. On this occasion Hon'ble Shilpa Darekar Deputy Commissioner (KMC), Prof. Sachin Dhurwe Program Officer, NSS, Dr. S. P. Kamble, Prof. V. D. Naik, Prof. H. T. Kamble, Prof. K. T. Zite, Prof. Supriya Mane and 55 NSS volunteers were present.



3. Yashwantrao Chavan KMC College Kolhapur NSS Volunteer participating in the cleaning campaign organized by National Service Scheme Department, Shivaji University Kolhapur on the occasion of Mahatma Gandhi Jayanti on 02nd October 2021.



4. Pudhari News Paper Social Foundation Kolhapur & NSS Department, Yashwantrao Chavan (KMC) College, Kolhapur are organised a clean up drive and forest safari at Dajipur Sanctuary on 29th November 2021



Yashwantrao Chavan KMC College, Kolhapur

22 Mar 2021 · 🌐

CC MM YY KK 🌐

कोल्हापूर परिसर

सोमवार,
२२ मार्च २०२१ २



कोल्हापूर : 'यिन' व वनसंरक्षण चव्हाण महाविद्यालयातर्फे वन दिनानिमित्त वृक्षारोपणासाठी प्रभावी प्राचार्य डॉ. प्रशांत नगावकर, सचिन दुबे, 'यिन' अध्यक्ष प्रबोधेश पाटील, उपाध्यक्ष सोनाली हुंबरे, मीनल आलेकर, रोहिणी जाधव, संकेत देसाई, गौरव पारखी, अमृता माने, सिद्धेश पाटील, तनुजा छानविलकर, तेजस महाडिक, सागर संकय्याळ, आदिती भाट, गौरी भामल, प्रतीक्षा लिंगवत, रोहित सांगावकर, पल्लवी पाटील, ऑंकार खोत, पुस्तका छायाचित्रण रावराय महाविद्यालयातर्फे वृक्षारोपणासाठी प्रा. डॉ. ए. ए. देगामुख, संजय पाटणे, अविनाश देशमुख, 'यिन' जिल्हाध्यक्ष विशाल पाटील, 'यिन' अध्यक्ष पार्थ देसाई, उपाध्यक्ष ऋतुजा पाटील, पांडुरंग खोत, भारत खोत, वैभव गोवर्धनकर, सिद्धी रावडे, कनिष्क कांबळे, वर्षा साळुंखे, अनिकेत मोदले, अश्विनी पुजारी, स्वप्नील घुले, शेवटच्या छायाचित्रण वाराणगराच्या वनसंरक्षण चव्हाण महाविद्यालयातर्फे वृक्षारोपणासाठी प्राचार्य डॉ. प्रकाश चिकुडेंकर, डॉ. एस. एस. खोत, डॉ. जयंती गायकवाड, डॉ. सी. आर. जाधव, डॉ. आर. पी. कारणे, 'यिन' अध्यक्ष सद्दी चव्हाण, उपाध्यक्ष सागर पाटील, आदिनाथ चिळे, राधाकिशोर कळगे, वैजणवी फले, अमृता पाणिजे, नम्रता पाटील, अक्षरा मोहिते, दीप्ती पाटील, अरुणा गुर्व.

वृक्षारोपणातून पर्यावरण संवर्धनाचा निर्धार

'यिन' आणि ११ महाविद्यालयांतर्फे जागतिक वन दिनानिमित्त वृक्षारोपण

सकाळ वृत्तसेवा

कोल्हापूर, ता. २१ : पर्यावरणाचा समतोल द्यायला येणे, पायाळी तयारी किती सज्ज आहे, याची प्रतीती आता आली. सज्जद्वारा उजवाळत लक्ष्यादि पर्यावरणपरीत प्रेम जागृत करित महाविद्यालयांच्या पर्यावरण वृक्षारोपण केले. केवळ वृक्षारोपण करून बांधणार नाही, तर रोपटांची काळजी घेऊन, असा निर्णयही त्यांनी केला. निमित्त होते. सकाळ पाठवय समग्रच्या या इन्सपिरेटर्स नेटवर्क ('यिन') व जिल्हातील ११ महाविद्यालयांतर्फे जागतिक वन दिनानिमित्त आयोजित वृक्षारोपण कार्यक्रम.



लक्ष्यादि म्हणजे ऊर्जेचे धोडार. समजात काही सरकारीक करणारे असले तर त्यांना केवळ दिना ज्ञानी ठरणे. यिनच्या जागृतेसाठीचे त्यांच्यातील नेतृत्व गुणांना चालता देण्यात येत आहे. त्याचाच एक भाग म्हणून लक्ष्यादि आज वृक्षारोपणाचा कार्यक्रम हाती घेतले. त्याची त्यांनी जयंत तयारी केले. महाविद्यालयांचे प्राचार्य, प्राचार्यक यांनी त्यांना प्रेरणादायक दिले. आज सकाळीच सर्व विद्यार्थी आरामगंगा महाविद्यालयात जमले. त्यांनी वृक्षारोपण करित



कोल्हापूर : कार्यात बालेजसतर्फे वृक्षारोपणासाठी 'यिन' सदस्य विनामणी कुमारे, प्रवेश नलवडे, ज्ञानी सिधे, मृणाली कारलेकर, पूजा वादव, वैजणवी विलासकर, विद्या कुंभार.

पर्यावरण वचाव चळवळ भक्कम करण्याची शय घेतली. रोपटांची काळजी घेऊन त्यांचे मोठ्या वृक्षात रक्षार लेहून घेतले त्यांचे संरक्षण करत,

अशी गाही दिली.

देवाचल रत्नाया कुंभार कारिण ऑफे कर्मस, सरवडे (ता. रायवली) पार्वतीबाई मरे महिला महाविद्यालय, वाराणगर (ता. पंचवळ) समतोलत चव्हाण यांच्या महाविद्यालय, कुंकव्यात (ता. शिरोड) प्रभा. अ. पाटील महाविद्यालय, कोणार्ड (ता. बरवडी) स. अ. खांडे महाविद्यालय, रावराय महाविद्यालय, महानगरातर्फेचे पर्यावरण चव्हाण महाविद्यालय, भक्कमर येथील रया महाविद्यालय, चंद्राप्रभातील र.पा. माडगोळकर, गार्हस्थरामभातील ओंकार

शिक्षणसासक मंडळ संघीत करत, वाणिज्य आणि विज्ञान महाविद्यालयात हा कार्यक्रम राबविला. उद्योगात निवचे महाविद्यालयात अणुश व उपाध्यक्ष यांनी पुढाकार घेतला. यात राण हिटीकर, प्रती मरे, संगीता पाटी, अंकिता पाटील, साशी चव्हाण, सागर पाटील, अश्विनी मोदघिरे, मुनी कोणार्ड (ता. बरवडी) स. अ. खांडे महाविद्यालय, रावराय महाविद्यालय, महानगरातर्फेचे पर्यावरण चव्हाण महाविद्यालय, भक्कमर येथील रया महाविद्यालय, चंद्राप्रभातील र.पा. माडगोळकर, गार्हस्थरामभातील ओंकार

Chapter IV

CONCLUSION AND MANAGEMENT PLAN

The Department of Environmental Science, *Shivaji University*, Kolhapur has conducted a Environment Audit of Yashwantrao Chavan (KMC) College Kolhapur in the academic year 2021-22. Environment Auditing is the process of identifying and determining whether college practices are eco-friendly and sustainable. The main objective of College to carry out Environment Audit is to check green practices followed by college and to conduct a well formulated audit to understand where we stand on a scale of environmental soundness.

Conclusions:

From the Environment Audit conducted by team following are some of the conclusions, which can be taken for improvement of the college campus to become environment friendly campus:

1. College can takes efforts to dispose majority waste by using proper methods.
2. Confidential paper waste is disposed properly.
3. Glass waste is disposed properly.
4. Toilets are consuming more water.
5. Roof top rainwater harvesting should be expanded which is useful for filling up of tanks on campus.
6. Practice of waste segregation to be initiated.
7. College can conduct more seminars, group discussions and eco-friendly activities on environmental education and awareness
8. College should maintain hygienic conditions and cleanliness in their premises

Recommendations:

Following are some of the key recommendation for improving campus environment.

1. College should develop its own Environmental Policy by using guidelines given in Environment Audit document.
2. The data related to all measured environmental parameters should be monitored and recorded regularly and information be made available to administration.
3. The College should develop internal procedures to ensure its compliances with environmental legislation and responsibility be fixed to carry out it in practice.
4. Wherever possible the waste should be reused or recycled.
5. Rain water harvesting facility must be expanded
6. Drip irrigation for gardens and vegetable cultivation can be initiated.

7. Practice of waste segregation to be initiated.
8. Dustbins must be labelled as per type of waste to be collected.
9. Records related to waste disposal must be maintained including quantity of waste.
10. Vermin composting plant should be implementing in campus.
11. Air quality on the campus is good.

ENVIRONMENT MANAGEMENT PLAN:

By understanding the dynamics of present situation of resource utilization and current practices of waste disposal, we have prepared an Environment Management Plan (EMP) for the Yashwantrao Chavan KMC College Kolhapur. This plan not only will provide the strengths, weaknesses and remedies for the green and clean campus but also give priority of the sector where the College has to give more efforts to improve its environment.

Environment Management Plan 2021-22

| Sector | Strengths | Weakness | Suggestions | Priority |
|--------------------------|---|--|--|-----------------|
| Solid Waste | | | | |
| Paper waste | Paper waste is disposed through vendor. | - | Use paper less policy | Medium |
| Plastic waste | Plastic waste should be segregated and treated properly. | Plastic thrown with general waste in many departments | Segregation of waste at the source and sending plastic waste for recycling. | Medium |
| Garden waste | College has scope for implementing composting unit on campus. | Garden waste is burned in premises | Instead of burning use for composting. | High |
| Water | | | | |
| Water utilization | <ul style="list-style-type: none"> • College has potential of Rain water harvesting. | <ul style="list-style-type: none"> • Overflowing of tanks at some places • Overuse of water at in toilets and Gardening perpose. | <ul style="list-style-type: none"> • Installation of automatic water pumps to avoid overflowing losses • Proper and timely maintenance of plumbing at all departments • Installation of rain water harvesting | Medium |

| | | | | |
|------------------------|---|---|---|--------|
| | | | assembly and drip irrigation facility. | |
| Hazardous Waste | | | | |
| E-waste | <ul style="list-style-type: none"> • E waste is given to licensed vendor for its safe disposal. | <ul style="list-style-type: none"> • E waste related to all electrical appliances should be collected. | <ul style="list-style-type: none"> • There must be segregation of e-waste from regular waste and also among the e-waste. | High |
| Air | | | | |
| Air | <ul style="list-style-type: none"> • Air quality is in good condition. There is no sound pollution | <ul style="list-style-type: none"> • Considering the future student population, there may be air and noise pollution | <ul style="list-style-type: none"> • The plantation can be increased by vertical gardening. | Medium |



Visit of audit team of Shivaji University to Yashwantrao Chavan (KMC) College Kolhapur



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