



Environmental Audit Report For the Academic Session 2023-24



**KARANJIA AUTONOMOUS COLLEGE KARANJIA,
DIST- MAYURBHANJ, ODISHA**

(MAHARAJA SRIRAM CHANDRA BHANJA DEO UNIVERSITY, BARIPADA)

**KARANJIA AUTONOMOUS COLLEGE KARANJIA,
DIST- MAYURBHANJ, ODISHA
ENVIRONMENTAL AUDIT COMMITTEE**

SL NO	NAME	DESIGNATION	POSITION IN THE COMMITTEE
1	MRS. PRANEETA PRAGYAN KUANR	Lecturer in Botany, Karanjia Autonomous College, Karanjia, Dist. Mayurbhanj	MEMBER
2	MR. MADAN MOHAN MAHANTA	OFS-I, Assistant Conservator of Forest, Karanjia Forest Division, Karanjia, Mayurbhanj	EXTERNAL MEMBER
3	DR. RANIDRA KUMAR NAYAK	Head, Department of Environmental Science, Fakir Mohan University, Vyasa Vihar, Balasore	EXTERNAL MEMBER



INTRODUCTION

Environmental Audit is a management tool comprising of a systematic, documented, periodic evaluation & maintenance of environment management systems and its performance. The aim of the audit is to facilitate management control of environmental practices and to enable the institution to assess compliance with its policies including meeting regulatory requirements.

Over the period of time, over exploitation of resources like water, fossil fuels, etc. have resulted in the environment degradation and pollution. So it is necessary to check whether our way of living and manipulating resources does not harmful to our environment.

The National Assessment and Accreditation Council, (NAAC) Bangalore has made it mandatory that all Higher Educational Institutions should submit an Annual Environmental Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of pollution and control global warming through Carbon Footprint reduction measures.

Environmental Audit enables to:

- Prepare environment management plan based on the intrusive studies performed
- Promote sustainability through efficient resource management resulting in cost reduction
- Develop outreach programs to enhance environmental protection

Environmental Audit Observations and Recommendations

1. Water Efficiency Observation

Observations:

a) Major water source for College is tap water, supplied by NAC, Karanjia and bore well system. As informed by College water management team, daily water consumption for the entire campus when in operation is 45 KL, which includes 35 KL consumption in academic area and 10 KL for gardening. Water collected in rainwater harvesting pits is used for gardening at department of Botany

b) Water is stored in 15 number of overhead tanks of capacity of different amount such as 1000L and 500L, and then is distributed to different areas of campus through 5HP pump and later distributed to washrooms, basins, kitchens, laboratories and water purifiers/ coolers installed in the College building. Water purifiers are based on Reverse Osmosis Technology (RO) and fitted with coolers.

c) Rainwater Harvesting System is comprised of rooftop and surface runoff. Through RWH, rain water collected is used for recharging ground water through 2 recharge bores. Rain water

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collected is also stored in recharge pits which is used for gardening. Installation of rooftop RWH system is also planned for under-construction building.

- d) Dry and wet mopping is practiced for floor cleaning.
- e) As informed, tap water leakage is immediately attended to by the maintenance department.
- f) Signage on water conservation is not seen in washrooms or near water purifiers.
- g) Sprinkler system has been installed in all gardens which lead to water conservation and efficient watering to the plants.

Recommendations:

- a) Drinking water quality shall be as per IS:10500 (<http://cgwb.gov.in/Documents/WQ-standards.pdf>).
- b) College should test water quality at regular intervals, develop water demand/ balance diagram and a plan delineating water conservation practice.
- c) Water consumption can be reduced through various conservation methods. Replacement of all old water faucets with water saving faucets such as prismatic taps, aerator taps, jet sprays etc. can save water and help in minimizing the water footprint.
- d) Records of water leakage complaints should be maintained as a part of Standard Operating Procedures (SOPs).
- e) Signage/ posters emphasizing water conservation should be posted in high water consumption areas such as kitchen, washrooms, drinking water area etc.

2. Wastewater Generation and Management

Observations:

- a) Wastewater is mainly generated from washing, toilet flushing and laboratories. Total 4 washrooms are provided in the College building (2 washrooms on each floor).
- b) Wastewater is also generated from Hostels of the college during washing, toilet flushing .

Recommendations:

Treated sanitary wastewater can be recycled for toilet flushing by providing dual pumping system.

3 . Solid Waste Management

As per Solid Waste Management Rules, 2016 waste segregation at source is mandatory in order to recognise that waste is a resource which needs to be recovered/ reused and recycled. Bulk generators such as institutions, commercial areas and gated communities have to segregate waste



Hazardous waste (diapers, napkins, mosquito repellents, cleaning agents etc.) before handing it over to the waste collector.

Plastic Waste Management Rules, 2016 (Amended in 2018) address the issue of carry bags by setting minimum standards of banning less than 50 micron thickness plastic carry bags and a mandate for retailers to charge a fee for each plastic bag made available.

The wet (food/ organic) waste is generated from hostels and staff quarters in small quantity. Daily around 25-50 kg bio-degradable dry waste is generated in the campus. In other areas like classrooms, mostly paper waste and plastic wrappers are generated.

Observations:

a) Segregation of wet and dry waste is practiced within the campus. Blue and Green covered/ pedal-pushed dustbins are placed in the premises. Waste bins are provided on each floor, in staff rooms, laboratories, washrooms, and kitchen in campus area.

b) College had vermicomposting unit for the treatment of biodegradable waste which was dismantled during construction of a new building. Recently, College has installed new vermicomposting unit (10x1x1 m) for the treatment of biodegradable waste generated in the campus.

c) College has taken steps to minimise and avoid paper usage:

i. Prints and photocopies are taken on both sides of the pages.

ii. Digitalisation (scanning) is practiced.

iii. The library has E-book system where books and journals are available online.

iv. College has Digital Notice board and Learning Management System (LMS) where notices are sent, exam results are displayed and attendance is recorded digitally.

v. Paper recycled is used for laboratory work. Remaining paper waste is sent to local vendor for recycling.

d) College encourages students to use eco-friendly material and recycle old papers/ scrap for decoration purpose during college festivals.

e) College strictly follows the guidelines regarding plastic usage and has prohibited the use of single use plastic e.g. carry-bags, glasses, spoons etc., in the campus.

b) College has installed sanitary napkin disposal facility.

Recommendations:

a) Inventories of all solid waste generated in the premises must be maintained to monitor the waste generation.

b) Training and awareness programs should be organized on segregation of biodegradable waste and recycling of waste. Efforts should be taken to inform students about recycling options for dry waste.



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4. E-Waste

E-waste is defined as electrical and electronic equipment, accessories which are not in use, whole or in part or rejects from their manufacturing and repair process which are intended to be discarded. E-waste is broadly comprised of discarded computer monitors, motherboards, mobile phones and chargers, compact discs, headphones, Cathode Ray Tubes (CRT), Printed Circuit Boards (PCB), televisions etc.

Observations:

E- waste, which are generated in the college campus annually is sent to local vendor for recycling.

Recommendations:

Records of E-waste generation and disposal are to be maintained properly. College should maintain the inventory mentioning type and quantity of waste generated e.g. computer monitors, scanners, keyboards, cables, circuit boards, batteries etc.

5. Air Emissions

Generators, exhausts from kitchen and chemical vapors in chemistry laboratory generate emissions.

No vehicle entry is allowed in the College campus except for dignities & differently abled students.

Separate parking area for vehicles is available outside the campus.

Recommendation:

It is recommended to measure emissions from diesel generator & ambient air quality at least once a year and results should be compared with Indian Ambient Air Quality Standards.

Exhaust fans should be provided in science laboratories, washroom and kitchen.

6. Indoor Air Quality

Indoor Air Quality (IAQ) refers to the air quality within and around buildings and structures, as it relates to health and comfort of building occupants. Common indoor pollutants are listed as below:

- Carbon monoxide – Sources of carbon monoxide are incomplete combustion of fossil fuels
- Volatile organic compounds (VOCs) – VOCs are emitted by paints and lacquers, paint strippers, chemicals, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions etc.

- Carbon dioxide – Due to human respiration
- Particulate matter (PM) – Due to construction and maintenance activities, vehicular pollution
- Nitrogen Oxides- Due to vehicular pollution

In the kitchen/Canteen area, parameters responsible for affecting indoor air quality are,

- Type and quantity of fuel used
- Medium of cooking
- Type of cooking e.g. roasting, frying, steaming etc.

Observations:

- a) In classrooms, ventilation is natural draft (through windows) and is enhanced by fans. In corridors, cross-ventilation is observed. Air conditioners are used in some offices and computer laboratories. As informed by College, ACs are serviced regularly to ensure indoor air quality.
- b) Green belts have been set up in the campus, indoor plants are present in the College building which helps in maintaining ambient air quality.

Recommendations:

Awareness should be created among the staffs and students on importance of maintaining indoor air quality.

7. Environmental and Sustainability Initiatives

a) The National Service Scheme (NSS) and National Cadet Corps (NCC) of the college undertakes projects for environment, rural development, education awareness, healthcare etc. Various activities like cleanliness drive, tree-plantation, seminars and workshops are organised by Eco Club/ Garden Committee/ NCC/ NSS increase the awareness and sensitivity among students and faculty.

b) College has demonstrated consistent commitment towards nature and environment by organizing different events for the last 5 years.

c) College arranges webinars, conferences pertaining to environment.

- World Earth day, World Environment Day celebration organized by NSS unit of the college, which included seminar, tree plantation drive, inter-college competitions on poster making, essay writing etc.

d) With the initiative of Botany Department a Green house has been constructed for the preservation of various medicinal plants, orchids, and rare plant species. 1 unit of Bio-fertilizer tank has been installed and maintained.

Recommendations:

a) The world is facing problems due to climate change leading to water scarcity and sustainable resource management. Creating awareness on mitigation of adverse impacts on environment, sustainable resource management and conservation of the ecosystem, has increased importance in any educational institute. It is necessary to create as much awareness as possible and sensitize students. Awareness sessions help students to understand the effect of their actions & inactions on the environment. build knowledge and skills necessary to address complex environmental issues

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b) Adopt environmental responsible purchasing policy and work towards creating and implementing a strategy to reduce environmental impact.

OVER ALL MINUTE ASPECT OF ENVIRONMENTAL AUDIT AND OBSERVATIONS

SL NO	Aspect of Examination	Remarks
1	Renewable Energy	Solar lamps are installed; panels are planned to reduce at least 50% of the power consumption
2	Biodiversity Conservation	Flora and fauna available in the region are conserved by the Volunteers of NSS and YRC wings
3	Tree/Plantation Drives	Regular /Annual afforestation programmes are carried out by the NSS and YRC wings on campus and near by Villages
4	Ground water Recharge	Rain Water harvesting systems are in place
5	Pollution Reduction	1. Outside vehicles are not allowed into the college campus 2. One day in week is earmarked as no-automobile day of Green day i.e. Friday
	E-Waste Management	As per Odisha state Pollution Control Board norms
	Solid waste Management	Waste management policy at par with Odisha Pollution Control Board(OPCB) and a MOU is signed between Karanjia NAC/Municipality for solid and wet waste management and disposal
8	Village Adoption	Local area(s) are adopted and designed as a model villages: Village Ankura is adopted by the college
9	Water Conservation	Sensor/Float based check on overflowing overhead tanks
10	Inclusiveness	Indigenous tribal culture and art, including traditional medicines are tapped and consultancy are offered. Other domains like mushroom cultivation/medicinal plant garden/organic manure etc. are in place



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PRAKRUTI VANADANA DAY CELEBRATED ON 28TH AUGUST 2023 AT DEPARTMENT OF BOATNY.



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SWACHH BHARAT ABHIYAN CONDUCTED BY NSS UNIT AT DIFFERENT LOCATIONS OF KARANJIA NAC.

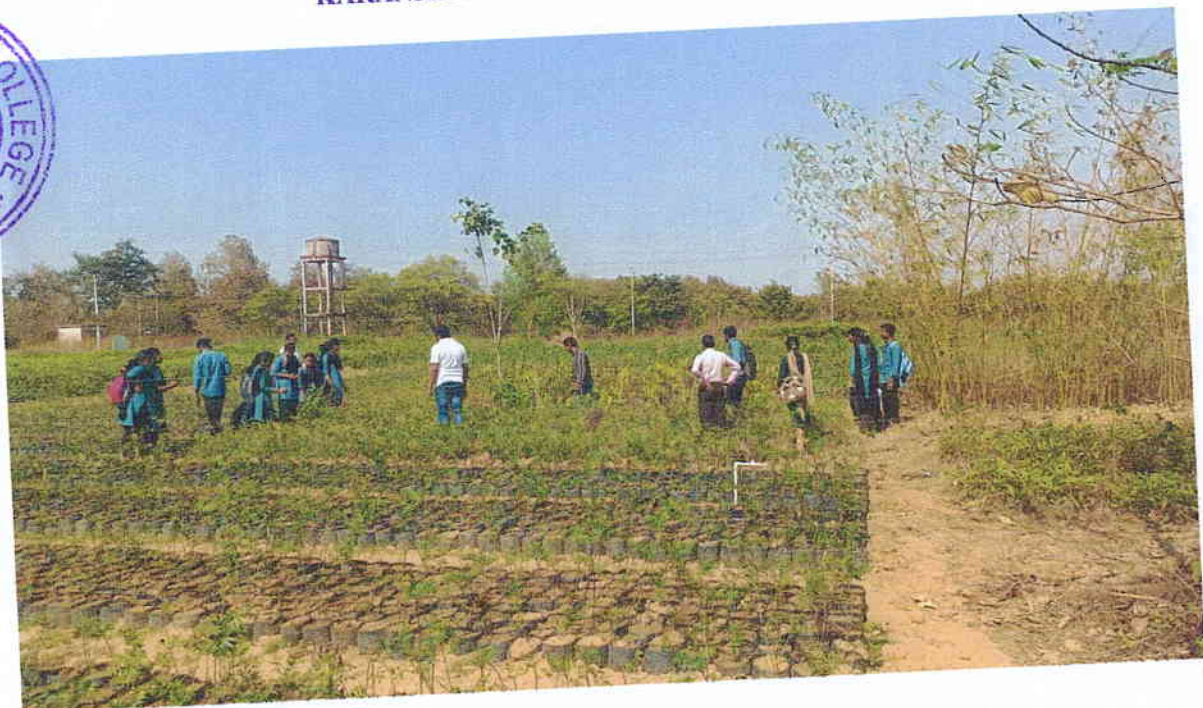


MASSIVE PLANTATION DRIVE CONDUCTED BY NSS UNIT OF KARANJIA AUTONOMOUS COLLEGE, KARANJIA WITH COLLABORATION WITH FOREST AND ENVIRONMENT DEPARTMENT GOVT OF ODISHA

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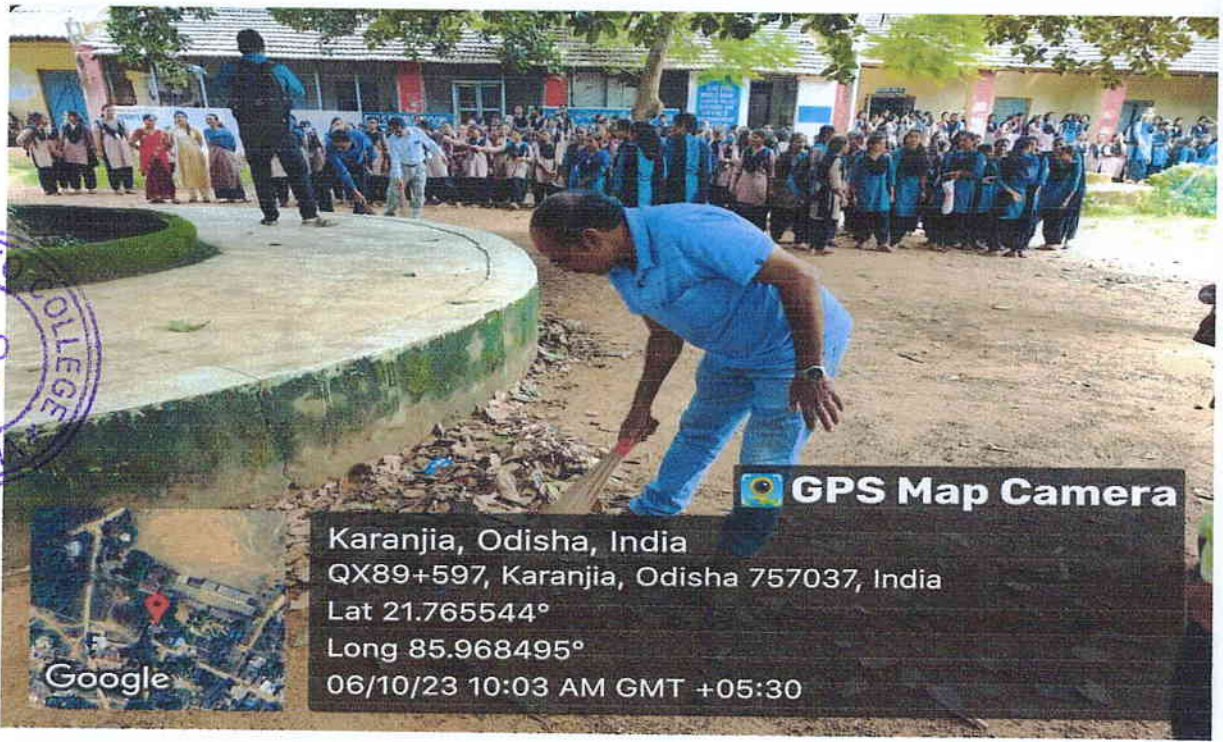
IN CAMPUS PLANTATION PROGRAMME CONDUCTED BY KARANJIA AUTONOMOUS COLLEGE, KARANJIA AUTHORITY WITH NSS UNIT



FIELD VISIT CONDUCTED BY DEPARTMENT OF BOTANY



AWARENESS RALLY AGAINST FOREST FIRE IN SIMILIPAL BIOSPHERE RESERVE WAS CONDUCTED BY KARANJIA AUTONOMOUS COLLEGE, KARANJIA WITH COLLABORATION WITH FOREST AND ENVIRONMENT DEPARTMENT, GOVT. OF ODISHA



“SWACHH BHARAT ABHIYAN” PROGRAMME WAS CONDUCTED AT COLLEGE CAMPUS

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