GREEN AUDIT REPORT

Year 2023-24

Arts & Commerce College Dodi (BK)

AARCHIT VENTURE
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Contents

Introduction

The rapid environmental degradation at local, regional and global level is leading us to global "Environmental poverty". Stabilization of human population, adoption of environmentally sound and sustainable technologies, reforestation and ecological restoration are crucial elements in creating an equitable and sustainable future for all humans in harmony with nature and natural resources. The main objective to carry out green audit is to check green practices followed by university and to conduct a well formulated audit report to understand where we stand on a scale of environmental soundness. Green audit is the procedure of systematically identifying, quantifying, recordings, reporting and analyzing the environmental diversity components of any organization. It aims to analyze the environmental practices inside and outside of the relevant place, which will have an impact on the environment. Focus was given to assess the consumption of energy, electricity, water as well as disposal of liquid waste, solid waste, hazardous waste, e-waste and an inventory of trees on campus is also prepared to check how much CO2 is sequestered and O2 is released. It is an important tool for universities to determine their consumption of energy, water, or other resources; and then consider and planned to implement changes and make savings. It can create health awareness and promote environmental awareness and ethics. It allows faculty, students and other staff to better understand the impacts of green activities on the premises.

Self-inquiry is a natural and expected development of quality education. Therefore, the institute must evaluate its contribution towards a sustainable future. An environmental sustainability has become an increasingly crucial issue for the every nation; the role of higher education institutions in environmental sustainability has become more important. The rapid urbanization and economic development at the regional and global levels have led to several environmental and ecological problems. In this context, it is necessary to adopt a green campus system for the institute, which will lead to sustainable development while reducing the large amount of atmospheric carbon emissions in the environment.

Government of India through its National Environment Policy (2006) has made mandatory for every organization to have green audit / environmental audit in their organization. The process of environmental audit was formalized by Supreme Audit

Institution (SAI) according to the guidelines given in Manual of Standard Orders (MSO) issued by Authority of the Controller and Auditor General of India 2002. University Grants Commission has mentioned “Green Campus, Clean Campus” mission mandatory for all higher educational institutes. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. Accordingly, realizing the need of being responsible towards environment, NAAC (National Assessment and Accreditation Council), an autonomous body under UGC has also added the concept of Environmental Audit in accreditation methodologies of State and Central Universities as well as colleges. Accordingly, Arts &Commerce College has also initiated a Green/Environmental Audit/Energy Audit of its campus at Dodi (BK) Dist. Nashik

About the College

The higher education challenge for rural area in the Maharashtra is three fold, namely necessary infrastructure, permanant qualified teaching faculty and appropriate job oriented courses. Shri Brahamanand Swami Shikshan Prasark Mandal's is a leading educational institution in Maharashtra. It was founded and named after the grant. Sant Shri Bramhanand Swami . Let dada patil kedar was the founder of the institution. All his life he remained a revolutionary and was fully devoted to social cause. The present institution Shri Bramhanand Swami Shikshan Prasarak Mandal was established in 1979 to provided education to the under privileged and socially and economically weaker section of society. The college is committed to promote innovation in learning processes and to emerge as a center of academic excellence.

College Vision

Empowering rural India by providing higher education opportunities to rural students at local level and promoting their academic, social and intellectual development.

Objectives

The main objectives of Environmental Audit in Academic Institution are:

- To encourage students in general and girls in particular.
- To encourage students to learn modern techniques and methodologies.
- To develop the competencies among students to face global challenges.
- To inculcate a scientific temper and a humanitarian approach among society.
- To address global and local needs towards national development.

Scope and Goal of Environmental Auditing

Government of India through its National Environment Policy in 2006 has made mandatory for every organization to conduct green audit / environmental audit in order to ensure a clean and healthy environment within and outside the organization. Further, it also helps in effective learning and provides a conductive learning environment. Efforts are taking place around the world in order to address various environmental issues. Green auditing or environmental auditing is one among them for educational institutions. Green auditing helps organization to understand various environmental issues of the organization and identify existing lacuna or gap towards meeting the objective of National Environmental Policy and thus, to plan accordingly.

Methodology

An environmental audit has three phases - pre-audit stage, audit stage and post-audit stage, accordingly the environmental audit was conducted

Pre-Audit Stage

Pre-audit stage involved the identification of target areas for environmental auditing. Accordingly following target areas were identified:

- Land Use System
- Biodiversity Status
- Climatic Conditions
- Air Quality
- Noise Pollution
- Water Resources and Management
- Energy Consumption
- Waste disposal and management
- Environmental Awareness
- Mitigation and Management practices

Audit Stage

(A). Collection of data, observation and interaction:

This stage of the Audit involved the activities relating to collection of data, observation, interactions and discussion with the concerned stakeholders i.e., faculty, administration

and staff members from different departments and sections of the university. A mixture of open ended and closed ended questionnaires were developed and used for data collection. Meetings with specific stakeholders of different target groups identified in the pre-audit stage were conducted for getting the desired information. Detailed discussions on some specific topic were also held.

(B). Review of previous records and policies:

This was carried out in order to understand the various initiatives taken by the university towards sustainable environmental conservation and amelioration. For the purpose, office registers, visitor's book, purchase registers, office communications, policy level documents of AC/ EC were also examined. Further, the published material such as prospectus, university annual reports, bulletins, and other magazines were also studied by the audit team for getting information / data on the target aspects.

(C). Inspection of departments/sections/various sites:

The audit team also visited the various departments, sections, offices and its premises in order to have an idea of various activities carried. Campus greenery and gaps were identified. Team also had a visit to play ground, canteen, library, office rooms and parking area.

(D). The stakeholders:

The stakeholders included were teaching staff from different schools, people from administration, water supply and maintenance, electricity department and ICT. The committee set up for the purpose discussed the issues related with key target areas. Questionnaires were prepared for getting information and accordingly meeting with concerned stakeholders were conducted. Data on water and energy use was collected from maintenance department.

Post-Audit Stage

The Post-Audit Stage includes the production of the final report, prepare action plan to overcome the flaws and to keep a watch on the action plan.

Audit Report

(A) Land Use System

The Arts &Commerce college of Dodi (BK) Tal. Sinner Dis Nasik . The college has adequate learning resources, including classrooms with smart classrooms, library and reading area, laboratories & computer centre with LAN, printers, scanners, good quality internet connection, sports ground, IQAC office, Examination Strong Room, seminar hall, and conference hall, RO water purifier system, safe drinking water, separate

Rest rooms for ladies & gents, parking space, and lawns. The available infrastructural facilities are optimally utilized.

(B) Climatic Parameters

Weather Data of the College campus. (Month wise / Season wise – weather)

Sr. No.	Months	Mean Temperature		Mean Total Rainfall (Inch)	Mean Numbers of Total Rainy Days
		DAYSaily (Maxi-mum) (F)	DAYSaily (Minimum) (F)		
01	January	85^0	58^0	0.01”	0.6 Days
02	February	89^0	62^0	0.01”	0.5 Days
03	March	96^0	69^0	0.01”	0.7 Days
04	April	101^0	76^0	0.01”	0.7 Days
05	May	101^0	78^0	0.08”	3. Days
06	June	93^0	77^0	4.4”	11.6 Days
07	July	85^0	75^0	6.3”	15.4 Days
08	August	84^0	73^0	5.5”	13.7 Days
09	Septem-ber	87^0	73^0	4.8”	11.0 Days
10	October	87^0	69^0	1.8”	4.6 Days
11	Novem-ber	87^0	63^0	0.5”	1.6 Days
12	DAYSe-cember	84^0	58^0	0.01”	0.5 Days

Temperature:

Located at an elevation of None meters (0 feet) above sea level, Dodi Tal. Sinner Dis. Nashik has a Tropical wet and dry or savanna climate (Classification: Aw). The district’s yearly temperature is 27.54ºC (81.57ºF) and it is 1.57% higher than India’s averages. Dodi (BK) Tal- Sinner Dis. Nashik typically receives about 128.99 millimeters (5.08

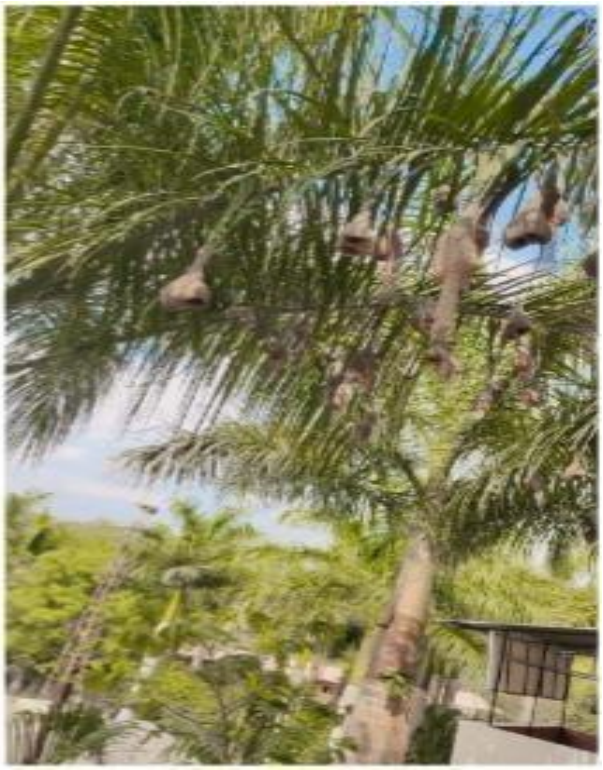
inches) of precipitation and has 131.64 rainy days (36.07% of the time) annually. (C) Biodiversity Status a large number of trees have been planted in the college premises. Water is supplied to the trees through drip irrigation, thus saving water and providing only the required amount of water. Also, since the college premises are pollution free, there are large number of bird & #39; snests and bee hives.

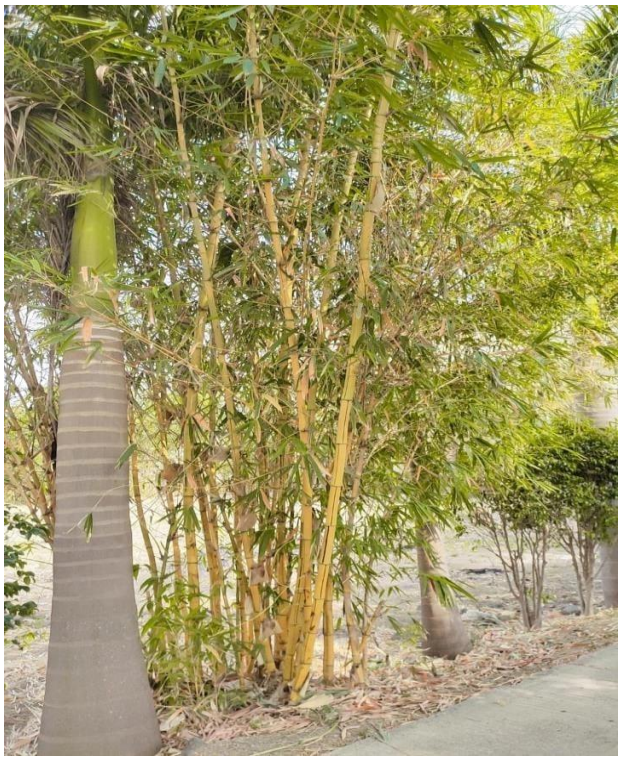
Tree Diversity of the campus

(List all types of plants, trees and land type) - Common and Scientific names of trees found in the campus area.

Sr.no.	Botanical Name	Common Name	Quantity
1.	Chrysalidocarpus lutescens	Areca Palm	15
2	Codiaeum Variegatum.	Croton Gold dust	02
3	Dracaena reflexaLam.	Pleamele	04
4	Dieffenbachia seguine.	Dumbrane	04
5	Saraca asoca	Ashoka tree.	21
6	Cordyline fruticose	Ti plant, palm lily.	02
7	Kalanchoe pinnata	Cathedral bells	01
8	Hibiscus tiliaceus L.	Sea Hibiscus..	01
9	Saribus rotundifolium	Footstool palm, sadeng.	04
10	Nyctanthes arbor. trishs.	Parijata	01
11	Mimosa pudica	Lajalu	01
12	Catharanthus roseus.	Cape periwinkle, Sadafuli."	03
13	clivia minilata	bushlily	02
14	Heptapleurum arboricola	Dwarf Umbrella tree	01
15	Nerium indicum.	Oleander	01
16	Ficus benjaming	benjamin fig, ficus tree	72
17	Cycas revolute	Sago	02
18	Ocimum tenuiflorum.	Tulsi	03
19	Tradescantia Spóthacea	boatlily	07
20	Acalypha Wilkesiana	Copperleaf	02
21	Portulaca oleracea	Common Purslane	01
22	Azadirachta indica	Neem	13
23	Thuja	Morpankhi	05

24	Bambusa Vulgaris	Bamboo	25
25	Roystonea regia	Cuban royal Palm	10
26	Aegle marmelos	Bael	01
27	Annona squamosa.	Sitafal	01
28	Calotropis gigantea	Rui	01
29	Caryota mitis	Fishtail palm	10 (New)
30	Ocimum tenuiflorum.	krishna tulsi	01
31	Portulaca grand org.	Chini gulab	01
32	Chrysanthemum multifolium	Shewanti	0
33	Cocos nucifera L.	Coconut	01 (New 05)
34	Terminalia catappa	Almond (Badam)	07
35	Mangifera indica	Mango	02
36	Annona reticulate	Ramfal	03
37	Grevillea robusta	Silky oak	01
38	Vachellia nilotica.	Babul	01
39	Latana L.	Gangutai	01
40	Carica papaya	Papaya	01
41	Psidium Guajava Linn	Peru	01
42	Ravenala madagascariensis	Traveller's Palm	08





List of Birds found in and around the Campus

S. No.	Zoological Name	Common Name
26.	Myophonus caeruleus	Blue Whistling Thrush
27.	Passer domesticus	House Sparrow
28.	Corvus splendens	House Crow
29.	Pycnonotus leucogenys.	Himalayan Bulbul
30.	Pycnonotus cafer	Red Vented Bulbul
31.	Psilopogon asiaticus	Blue throated Barbet
32.	Psilopogon haemacephalus	Coppersmith Barbet
33.	Acridotheres tristis	Common Myna
34.	Lanius schach	Long Tailed Shrike
35.	Psittacula cyanocephala	Plum Headed Parakeet
36.	Psittacula krameri	Rose Ringed Parakeet
37.	Milvus migrans	Black Kite
38.	Cinnyris asiaticus	Purple Sunbird
39.	Aethopygasiparaja	Crimson Sunbird
40.	Cercomela fusca	Brown Rock Chat
41.	Saxicola ferreus	Grey Bush Chat
42.	Copsychus saularis	Grey Bush Chat
43.	Cinnyris asiaticus	Purple Sunbird
44.	Aethopygasiparaja	Crimson Sunbird
45.	Cercomela fusca	Brown Rock Chat
46.	Saxicola ferreus	
47.	Aquila nipalensis	Steppe Eagle

List of Butterflies found in and around the campus

Common names and scientific names of birds and animals found in the campus area

Sr.No.	Scientific Name	Common Name
1	Covus macrohynchos	Jungal crow (कावळा)
2	Milvus migran	Black kite (घार)
3	Passer domesticus	House Sparrow (चिमणी)
4	Acridotheres tristis	Common myna (साळुंकी)
5	Ploceus philippinus	Sugran (स,गरण)
6	Pavo cristatus	Peafowl (मोर)
7	Rhopalocera	Butterfly (फ, लपाखरू)
8	Apis Indica	Honey Bee (मधमाशी)
9	calotes versicolor	Gardan lizard (सरडा)
10	Gomphocerippus rufus	Rufous grasshopper (नाकतोडा)
11	Naja Naja	Snake (साप)
12	Cuculidae	Cuckoo (कोचकळा)
13	TephrodornisPondicerianus	Common Woodshrike (स,तारपक्षी)
14	Athene Brama	Little Owl (घ,बड)
15	Psittacula krameri	Parrot (पोपट)
16	Squirrel	Kharutai (Gilaharī)

List of Reptiles found in and around the campus

S. No.	Zoological Name	Common Name
	Kachuga tentoria	Indian Tent Turtle
	Varanus spp.	Monitor Lizard
	Calotes spp.	Garden Lizard
	Hemidactylis spp.	Common House Gecko
	Python molurus	Indian Python
	Bangaru caeruleus	Common Kraits
	Naja Hannah	King Cobra
	Gloydius himalayanus	Himalayan Pit Viper
	Naja naja	Himalayan Pit Viper
	Ptyas mucosus	Rat Snake

(D) Pollution

i. Sources of air pollution: It was observed and revealed from data that the only possible sources of pollution in the College campus are as use of diesel / petrol vehicles, air conditioners, power generator, kitchen waste and other biodegradable waste from canteen, use of electronic appliances and other. There are five (01) office vehicles (Cars), 22 personal cars, 20 personal two wheelers and 05 cycles are being used by the employees of the organization. Thirty (10) people are using pooled vehicle/ share auto taxi or shared two wheeler for commuting to university. There are also people who are using environment friendly vehicle i.e., cycle, but the percentage is very low nearly 7%. Further, people commuting through walking are also only 3%. There is Figure 1. Use of vehicle in the campus 11 very low chances of air pollution from outside as there are no commercial as well as the industrial actives are running near the campus, as the campus is rich in greenery.

ii. Sources of noise pollution: It was observed that there is no industrial as well as the sound generating activities near the College campus and it was revealed from that due to limited number of vehicles the chances of noise pollution seems to be quite below of standard limit. Moreover the two generators of the university are also sound proof. There is no other source of noise pollution in the campus.

(E) Water Resource and Management

Water Management / Rain water harvesting/ Water conservation initiatives

Rainwater Harvesting: Installing rainwater harvesting systems on college campuses can help collect and store rainwater for various purposes such as irrigation, groundwater recharge, and non-potable uses like flushing toilets or cleaning. This reduces the demand for freshwater sources and helps in conserving water.

Water Conservation Campaigns: Colleges can initiate water conservation campaigns to raise awareness among students, faculty, and staff about the importance of water conservation. These campaigns can include educational workshops, awareness programs, posters, and social media campaigns to promote responsible water use practices.

Efficient Water Fixtures: Upgrading water fixtures in college buildings to more water- efficient options, such as low-flow toilets, faucets, and showerheads, can significantly reduce water consumption without compromising functionality.

Leak Detection and Repair: Regular inspections and maintenance programs can help identify and repair leaks in plumbing systems across the college campus. Prompt leak detection and repair can prevent water wastage and conserve valuable water resources.

Water Recycling and Reuse: Implementing systems for treating and reusing greywater (non-potable wastewater from sinks, showers, etc.) can help reduce the demand for freshwater. Greywater can be treated and reused for irrigation or other non-potable purposes.

Landscaping Practices: Adopting water-efficient landscaping techniques, such as xeriscaping or using native plants that require less water, can minimize water consumption for campus grounds maintenance.

Water Monitoring and Management: Installing water meters and implementing a water management system can help monitor water usage, identify consumption patterns, and implement strategies for efficient water use.

(F) Energy Consumption and Management

Electricity is mainly needed for lighting the rooms, cooling the rooms in summer and heating the rooms in winter and running computer systems. The college has a server room which needs electricity all the day and night.. Apart from this, college has its own tube well connected with electric motor of 2 hp. Water from the tube well is lifted to overhead tanks placed in the roof top daily and for the purpose machine runs for 2 hours daily. The College has a sanctioned load of 15 KW from Maharashtra State Electricity Distribution Co. Ltd (MSED). The average electricity consumption of the college per month is approximately 1240.38 units and the average amount Rs. 9000.00 per month is paid by the college for Electricity. In addition to this, there are two sound free diesel generators installed for meeting energy requirement during power cut off. On an average one to two hours a day, electricity is generated from these generators.

(G) Waste Disposal and Management

Both biodegradable as well as non-biodegradable wastes are generated from various departments/sections of the university. The principal waste includes paper, grasses, electronic wastes, canteen waste and other solid wastes. Since, The college operates on ODL mode therefore number of students visiting the campus are comparatively less compared to regular universities. Therefore, the waste generated through classroom activity and student's activities is negligible. Whereas, plastic wastes is completely or strictly banned in the university campus. However, following provisions have been made:

Biodegradable:

There are two kinds of dustbins (Red and Blue) placed at different places/department/sections to collect the waste separately (blue for biodegradable and red for non-biodegradable). Thereafter, the biodegradable waste produced from various departments, sports ground or other areas is put into compost pits for making compost to use in maturing garden plants and seedling planted during planting season.

ii. **Non-Biodegradable:** There is very low quantity of non-degradable waste in the campus as the university does not have staff quarters at present in the university premises, therefore, no household domestic waste is generated. Since the college operates its Science programs through its study centers, therefore, at present science departments do not have in-house labs thus, no such waste is generated through the laboratories. However, rest of the non-degradable waste generated from places/department/sections of the college is collected in red dustbin and sent for the disposal through waste collection vehicle of Nagar Nigam Haldwani.

ii. E-Waste: Besides the above wastes there are another category of waste is E-waste which includes computers, laptops, pen drives, printers, hard discs, CD's and other solid waste, electrical & electronics equipment's generated through different department/sections is disposed and managed by the ICT, maintenance and store department of the college and the details are properly maintain in the stocks register. Thereafter in every five year the concerned departments categorize the useless items in to the wastes and disposed through auction and buyback from the authorized buyers as per the Maharashtra Government Rules.

(H) Environmental Awareness

The college staff is aware of the various environmental issues and the various green measures to be adopted in office as well as in their houses. A course on Environmental Studies is compulsory for all under graduate students. Further, college conducts plantation drives in the campus during Environment Day, 15 August and during other important events in the university. Further, college has also adopted nearby villages for environmental awareness activities, health camps and other community programs being conducted through their participation.

i. Maintenance of Lush Green Campus: College has ten hectares of land which was transferred to it from Forest Department for the purpose of creating infrastructure required for the development of various Offices/ Departments of the college. Further felling of trees for development of various infrastructures will be done with least disturbance following government rules.

ii. Plantation Drives: Plantation drives are regular activities in the campus, and usually in all important occasions, plantation activity is taken up. College has maintained a garden in which different ornamental plants have been raised.

iii. Organic Composting: The activity of making organic compost has been initiated in the campus where all the biodegradable waste materials are filled up in the compost pit. In the course of time, organic compost is prepared. This organic compost is utilized for manuring in flowerbeds and plantations

iv. Energy Conservation efforts:

The college is using star rated Electrical & Electronics equipment which saves energy. LED Bulbs/ Tube-light, 4-5 star Rated Air Conditioners. College has always been effortful in making use of renewable energy resources. The average electricity

consumption of the University per month is approximately 12940.38units. For the purpose, College has already installed a grid connected solar power plant of 120 Kw. It is expected that College will produce approximately 400 to 500 units of electricity per day which will be equivalent to 80 % of energy consumption of the University. This is the step forward for energy conservation and will definitely reduce the electricity consumption of the college and save the money for college.

Recommendations

A green audit of any academic institution reveals, ways by which institute can reduce energy consumption, water use and reduction in emission of carbon dioxide in the environment. It is a process to look into and ask ourselves whether we are also contributing to the degradation of the environment and if so, in what manner and how we can minimize this contribution and bring down to zero and preserve our environment for future generation. This process of green audit enables us to assess our life style, action and assess its impact on the environment. Green auditing is the process of identifying and determining whether institutional practices are ecofriendly and sustainable. Traditionally, we are good and efficient users of natural resources. But over the period of time excess use of resources, viz., energy, water, chemicals are become habitual for everyone especially, in common areas. Now, it is necessary to check whether our activities are consuming more than required resources? Whether we are handling waste carefully? 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.

As an outcome efforts will be made to reduce carbon foot prints by using electrical vehicles in the campus, and green computing in the administration and examination.

Focus to assess the consumption of energy, electricity, water as well as disposal of liquid waste, solid waste, hazardous waste, e-waste and an inventory of trees in the campus is also prepared to check how much CO2 is sequestered and O2 is released.

- The College will follow No Vehicle Day on first Saturday of every month to saved fuel consumption.
- Various awareness programs will be helpful to motivate all the staff members for optimized sustainable use of available resources.
- The long term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental issue.
- To prepare an Environmental Statement Report on green practices followed by different departments, support services and administration.
- The Green Audit Report on environment must reach the public so that it would succeed in reducing the environmental issues and its popularization among stakeholders.
- If possible an environmental audit report must be published annually by the college.
- Government can play significant role for environmental legislation and quality adoption of cleaner and environmentally begin technologies in Government organizations like Universities.

References

NEP (2006). National Environment Policy, 2006. Ministry of Environment, Forest and Climate Change, Govt.