

Green Audit Report



**Koyana Educations Society's
Balasaheb Desai College, Patan
Tal-Patan, Dist-Satara,
Maharashtra**



2019-2020

**Prepared by
IQAC Cell**

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FOREWORD...

World is facing various serious environmental issues, different reports from World Health Organization, IPCC, various National and International organizations highlights the Environmental issues are most sensitive and widely discussed issues in the world today. From local issues like unsafe drinking water, regional issues like urban smog to global warming to deforestation etc. are the environmental issues that are discussed at global level but true fact is that regional or local activities are responsible to make such issues global. On the background of scenario components involved in higher education institutions like universities, colleges, research institutes are expected to take lead role in environmental conservation and protection. Institutions must play an active role in creating and modeling solution for environmental problems.

Balasheb Desai college Patan is following different sustainable practices as their vision. As a part of Quality System, college is committed to take lead role and create its own identity in the protection and conservation of environment. College has been following eco-friendly and sustainable practices to manage the available resources. As a part of such voluntary practices and component of Quality System internal environmental audit is conducted to evaluate the actual scenario on the campus.

Green auditing of college campus is planned systematic assessment of day to day activity with special reference conservation of natural resources, optimum use of available resource and control over waste generation. Green audit assessment will show way to find out the eco-friendly and non-eco-friendly practices on the campus. Objectives of green auditing varies with the operational activities of the organization. In case of our college green audit is an internal requirement of quality management system implemented for the improvement in quality of higher education. Green audit shoe alternative path for management for non-ecofriendly activities. It also promotes a good environmental management practices and raises the awareness about the environmental conservation and its long term benefits. College has already Implemented conservation practices in vision, which provides chance to explore opportunities for better performance in the future.

As a part of Quality System over the past five years' college has fixed goal for conservation of environment and sustainable practices. For the achievement of goal college accepted various new and advanced technologies which are eco-friendly; such as self-sufficiency in water by adapting watershed management and roof top rain water harvesting systems. Plantation of local and endemic plant species on campus is big challenge that is accepted by the college. Over the years various green practices helped for number of significant changes, which have helped to increase the green area on the campus.

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Udhyog Adhar Reg. No. MH15D0001832

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TO WHOMEVER IT MAY CONCERN

We, Archana Analytical Services, conducted Green Audit 2020-21 for Koyana Educations Society's Balasaheb Desai College, Patan, Tal-Patan, Dist-Satara.

This is declared that Green Audit is conducted as per the norms of Ministry of Environment and Forest, Govt. of India and allied agencies whereas applicable. Green Audit is replication of data given by institution and its actual onsite visit verification.

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INTRODUCTION

Koyana Education Society, Patan was established on 8th December 1967. A band of social workers, Hon. Bhagawatrao Desai, Hon. K. V.(Bapu) Patil, Hon. Dr. Sopanrao Chavan, Late Shri. Dadasaheb Pawar, Hon. Anantrao Desai, Hon. Yusufbhai Shaikh, Advocate Shripatrao Molawade and Hon. Udaysinh Patankar came together under the leadership of Late Shri. Balasaheb Desai and decided to initiate education society. In this way, Koyana Education Society came into existence by the sincere efforts of these prominent personalities.

Balasaheb Desai College was set up in 1969 with the objective of opening the doors of higher education to the poor & economically backward people of Patan Tehsil along with secondary and primary education. In recognition of Balasaheb Desai's key role in the establishment of this institution, the office bearers of KES unanimously decided to give his name to the college.

The architect of Patan Tehsil, founder of Asia's biggest windmill project and the former cabinet minister of public works and tourism minister of Maharashtra State, Hon. Vikramsinh Patankar and the erstwhile Chief Minister, Hon. Sharad Pawar Saheb extended valuable assistance in the formation of Koyana Education Society and the college.

The year 2019 was greatly celebrated as the golden jubilee of the institution after its completion of 50 years. The institution could achieve a spectacular success in the field of education because of great efforts taken by Dr. Sopanrao Chavan, President, Hon. Shrimant Amarsinh Patankar, General Secretary and the other office bearers of KES, Patan. At present, the institution successfully runs- 01 Primary School, 20 Secondary Schools, 06 Junior Colleges, 02 Senior Colleges, 01 Industrial Training Institute and 01 Printing Press. About 17,000 students and 650 employers including quality teachers and non teaching staff are working as the members of one family.

To meet the needs of 21st Century, the institution is prepared to maintain speed, excellence, better administration with no compromise in quality. Hon. Yadnasen Patankar & Hon. Sanjeev Chavan, the young and visionary leaders have undertaken the responsibility of introducing innovative ideas in the campus. To begin with, The Koyana Pattern for 11th 12th students and Competitive Examination Center have been introduced for the betterment of students.

1.1 Infrastructure

The college located at North side of Patan town approximately 1.5 km from central bus stand towards Chafoli road, They have their independent infrastructure .The college is situated on a plot of land measuring 11.14 acres of land. The Master Plan of the College campus indicates the existing buildings. It has 2 separate buildings. Totally, there are 23 classrooms,

8 Laboratories, 2 hostels, 2 staff courters and administrative office. All the classrooms are equipped with standard furniture and fixtures. All the buildings have adequate basic amenities on each floor including drinking water. The college library is full with 51010 no of books including novels, magins reference books, text books. It has a reading room where magazines and news papers are available. The College inculcates civic responsibilities among the students through N.S.S, NCC and civil defense. The College has N.C.C. Units for boys and girls. N.C.C. Unit give training to the interested students. A unit of civil defense is active in coaching of various methods of self protection and community help at the time of emergency. Nature club activities under 'Nature Lovers Club'provide awareness for environment and pollution free living. Students do participate in all such activities. Strategic planning and technologies are used by the institution for efficient running, particularly in resource mobilization.

The college houses

Library

Classrooms

Administrative Office

Computer Lab

Gymnasium

Parking Facility

Auditorium

Conference Room

1.2 Green audit an overview:

Educational Institutes are playing a key role in continues development of human resources worldwide through teaching and research. Educational institutes conducts various activities with aim to percolate the knowledge among the different levels of society. Likewise educational institutes also try to give issues related environmental conservation and pollution

control. Various types of evolutionary methods are used to identify the environment concerning problem. It includes Environmental Impact Assessment (EIA), Social Impact Assessment (SIA), Carbon Footprint Mapping, Green audit etc.

“Green audit is a tool to highlight general practices accepted and implemented by organization in term of its impact on environment”. Green audit also focus on adverse practices which are cause and responsible for harm to environment. Green audit shows strength and weakness of organization towards protection and conservation of environment. It also mark and highlight the non-accepted practices of natural resources utilization. Green audit shows the path to continuously run healthy practices, new innovative system for optimum utilization of resource and minimization of waste generation. It helps for protection and conservation of environment, natural resources and lead institution sustainable campus in social, economical and environmental views.

1.3 Need of Green auditing:

Green auditing is the process of assessment of practices accepted by institution in view of whether they are ecofriendly and sustainable or not. Traditionally, Indian culture teaches good and efficient users of natural resources. But over the period of time uncontrolled excess use of resources like energy, water, chemicals are become threat to the environment and society also. Now, it is necessary to check whether our accepted practices are consuming more than required resources? Whether we are handling waste carefully? Where we have control over the use of natural resources. Green audit shows all such practices and gives an well direction to optimizes the use of natural resource. In the era of global warning, climate change, pollution and resource depletion it is necessary to verify the accepted practises and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall awareness among the stack holders of institution towards an environmental conservation and green practices to be accepted.

1.4 Goals of Green audit:

College has conducted green audit with following goals.

1. Baseline data collection of environmental parameters and measures over the environmental issue before they become problem.
2. Find out strength and weakness in green practices.
3. Conduct a survey to collect base line ground reality about green practices.
4. Find out the hurdles in green practice, and suggest solution over the hurdels.
5. Check out the facility of different types of waste management.
6. Increase environmental awareness throughout campus with training.

1.5 Objectives of Green audit:

1. To collect the base information over the current practices which can impact on environment.
2. To find out significant environmental issues.
3. Setup goal, vision and mission for environmental conservation and sustainable practices in campus.

METHODOLOGY

This is the first attempt to conduct Green Audit of Balasaheb Desai college Patan. First target was to collect the base line data concern about the green practises. The present report is based on onsite visits, personal observations and questionnaires survey tools. Primarily, based on data requirement, different type of questionnaires were prepared. Questionnaires were provided to all concern asked them to fill the same. The generated data is subsequently gathered

and used for further analysis. From the outcome of the overall study, a final report is prepared. Before the survey all the required secondary data were collected from concern departments.

2.1 Survey by Questionnaire:

Baseline data for green audit report preparation was collected by questionnaire survey method. Questionnaires were prepared based on the guidelines, rules, acts and formats prepared by Ministry of Environment and Forest, New Delhi, Central Pollution Control Board and other statutory organizations. Green audit report of Shivaji University, Kolhapur is used as format for the report preparation. Most of the guidelines and formats based on broad aspects and some of the issues or formats were not applicable for educational institutions. In fact questionnaires were prepared, using these guidelines and formats, combinations, modifications and restructuring them, sets of questionnaires were prepared as solid waste, energy, water, hazardous waste, and e-waste.

All the questionnaires comprises of group of modules. Questionnaires were prepared in such a view that it will be easy to extract the general information of the concerned department, which broadly includes name of the department, total number of students and employees, visitors of the department, average working days and office timings etc. Another part of the questionnaires extract the present consumption of resources like water, energy, or the handling of solid and hazardous waste. Maintaining records of the handling of solid and hazardous waste is much important in green audit. Last part of the questionnaires shows possibilities of loss of resources like water, energy due to improper maintains.

2.2 Onsite visit and observations:

Balasaheb Desai college campus has vast built up area comprising of various departments, administrative building, Library, Class rooms, staff quarters, student hostels, sports complex. All these amenities have different kind of infrastructure as per their requirement. All these buildings were visited by the surveyors. Presents conditions were checked by specific check list. Personal observations were made during the onsite visit.

2.3 Data analysis and final report preparation:

Required primary and secondary data were collected by different ways live questioners, check list etc. Collected data were crossed checked during the personal onsite visit. In case of green audit, the filled questionnaires of the survey from each group, were tabulated in excels spreadsheets. The tabulated data is then used for further analysis. SPSS software is used to find out the frequency distribution and results in percentile format. For better understanding of the results and to avoid complications, averages and percentages of the Tables were calculated. Interpretation of the overall outcomes are included in Final report.

OVERVIEW OF GREEN AUDIT

Audit Criteria

- 3.1 Green Cover
- 3.2 Waste Management
- 3.3 Electricity and Energy Audit
- 3.4 Water Conservation
- 3.5 Health and Hygiene
- 3.6 Training and Awareness

3.1 Green Cover

The college continuously conducts tree plantation drives as a mission through their, NSS, NCC and Nature Club and Department of Botany is prime contributor for the same..The plantation movement is conducted three times during the year i.e. before the arrival of monsoon, during monsoon and post monsoon. College has developed a medicinal plant garden under self funding. Space has been allocated for developing a fernery in college premises. The college premises indicates the awareness level on floral biodiversity among the staff and students of the college. NSS and NCC receive funds from the Government whereas Nature Club are self funded for this initiative.

Counting of trees and shrubs in the college premises was done by Student of Botany department as their curricular aspect. A project on identification of plants in campus was undertaken with the help of Department of Botany. The college has maintained books on identification of flora and fauna. Volunteers from various departments have maintained Nesting's for the birds in the campus and Volunteers from zoology departments have maintained panpoi for the birds in the campus however, these efforts may be further improved by display of information. College students are also encouraged for bird watching within the campus. Records of such surveys on floral & faunal biodiversity are maintained and were available during the audit.

Nature Lovers club activity by Mr. S.L.Panaskar is continuously trying to highlight the issues concern about environmental conservation and protection. Various field visits are organised to get aware about the local biodiversity. Apart from this, nature club organizes time to time trips and nature treks to places of ecological importance for students and faculties who are interested. Following activities clears the intention towards development of Green Belt

List of Flora and fauna

With the help of Department of Botany a project on identification of plants in campus was undertaken and list of floral biodiversity is listed. Likewise with the help of Department of Zoology a project on identification of fauna which includes , birds, reptiles etc. in campus was undertaken and list of faunal biodiversity is listed.

Drip and sprinkler irrigation system

As a part of water conservation technique college installed drip and sprinkler system for watering the plant.

Planation of Rare Endangered Species

College is planning to developed a rare endangered species garden .Space has been allocated for developing a medicinal plant garden in college premises. The college premises indicates the awareness level on floral biodiversity among the staff and students of the college. In 2019 to 2020 Rs.4150fund received from seedlings of leman, mangos, ornamental plants, climbers, ornamental plants, medicinal plants and flowers.

Plantation with villagers at different villages

College has started a unique movement of plantation, motivational approached are developed in local people to plant more and more tree. As a part of this movement villagers from surrounding villages are motivated to plant a tree in front of their house and nourish the same.

Revenue from the sale of different items from garden

College premises have some fruit plants which contains mango, jackfruit, leman etc. These fruit plants are full grown and produce saleable fruits. College has its own horticulture department which take care of all these plant. By sailing the different items college generate revenue. Horticulture department sales the products and keep the record of revenue generated. Practise is too much fruitful because fresh and healthy items are supplied to peoples with affordable rates as compared to market rate. Since the fresh and cheap item are available the demand is more and more.

Drinking water arrangement for birds

As a part of conservation of biodiversity college have make separate drinking water arrangement for birds. Specific water bowels are placed at typical location considering the less human interferes. This practise shows very good results for bird biodiversity.

3.2 Waste Management

Solid waste management is a burning issue in current days. The rate of generation of solid waste is very high management technology are too adequate. Unscientific handling of solid waste is also a burning issue which can create threats to public health and environment. It is necessary to manage the solid waste properly to reduce the load on waste management system. The purpose of this audit is to find out current management practice of solid waste generation in the campus. Paper waste is a major solid waste generated in the campus. Most of the

departments including office, library are major contributing in the paper waste generation. Followed by paper. Plastic is secondary contributing solid waste generated in large quantity in the campus. Office staff are using one side papers for printing and writing. Biodegradable waste generated in campus is mostly from canteen, hostels and guest house. Glass waste is less contributing but it takes part in solid waste generation. Glass waste generated from laboratory mainly in the form of bottles, many times bottles are reuse for storing of other chemicals. Other glass waste is thrown with solid waste. The college have well established protocol to recycling and reuse of resources such as paper in the form of annual sale of stored newspapers and waste papers to scrap dealer. Very few departments are categorizing the plastic and sending it for recycling. Metal scraps and waste is segregated separately and sent for recycling yearly. Canteen waste is collected and some biodegradable waste is treated with vermicomposting process. It was observed that e-wastes were collected but due for disposal with recycler. Wastes such as electronic peripherals and paper wastes are stored and later collected by the peon.

Vermicomposting

As a part of solid waste management college installed vermicomposting plant. Vermicomposting plant is very useful for kitchen waste management. Kitchen waste is generally generated from hostel and canteen.

3.3 Electricity and Energy Audit

Major energy sources utilized include, Electricity, Solar Energy and LPG. Major use of the energy is at office, hostel, laboratories, library, canteen and class rooms for lighting, cooking and laboratory work. Electricity is supplied to the campus by Maharashtra State Electricity Board. There is no provision of generating electricity on site.

The IQAC Cell conducted an Energy Audit as a part of green audit. Prime aim of audit was to find a way of energy conservation. College use solar energy as conventional energy source for street light. It is planned hostels shall cover under use of solar energy. It is documented that Placards and posters are displayed near electricity supply and rooms, however it was nowhere to be seen during the walk through. The peon switched off all power supply in non-lecture hours and was confirmed during the site walk through visit. Lab In charge of all laboratories conveyed that electricity during nonworking hours are put to off. Different awareness programmes were conducted for peons, staff and students. The college initiated to install CFL and LED bulbs in the college campus the initiative could be strengthened with help of a action plan. The college targets to reduce electricity out of total electricity consumed in

college as per the documents. This may be supported by maintaining proper relevant records and benchmarking the present consumption.

3.4 Water Conservation

For the purpose of water audit an on-site walk through survey and assessment was conducted to determine the efficiency of water use and to develop recommendations for improving water use efficiency. Overall agenda of conducting a water audit is to identify opportunities to make water use more efficient. Water audit includes tracking, assessing and validating all components of flow from distribution system into the consumer's properties. On the other hand, water audit of a campus review direction and quantity of water used for domestic, laboratory, drinking, gardening, sanitary and landscaping processes.

Water meters are not used to record the water consumption in the campus. Drinking water are provided on assessable place in the campus. Drinking water is currently not being tested for the water parameters according to prescribed BIS standards for drinking water. Toilets were checked for leakages and spillage. These toilets were checked at random and found to be maintained in leakages and spillage free. The NSS and Nature club conducts water conservation drives inside the campus and also at public places. College incited to reduce water consumption by raising awareness in students & staff members and having periodic check on leaks. There were no displays of signage or message for Good Practices in the College premises for Water Conservation. It is needed for the continuous highlight of the issue. The college incited to recycle and reuse the wash water of wash basin for gardening purposes as a future plan. The college also planning for the rain water harvesting system as a conservation practices.

3.5 Health and Hygiene

The college incited to promotes Swachh Bharat Abhiyaan by maintaining cleanliness on campus. It is well concentrated on housekeep. Toilets were checked for hygiene, leakages and spillage. These toilets were checked at random and found to be maintained in hygienic condition also students were found to be satisfied with hygiene level. It is documented that Sweeper cleans the floor and toilets regularly Swachh Bharat Abhiyaan are promoted by the NSS and NCC wing. For a good hygiene practices college run following activities.

Sanitary napkin wending machine/ disposal machine

College have ladies hostel with accommodation capacity 50. For the purpose of good hygiene practice sanitary napkin and disposal machine are installed.

Yoga Camp

As a routine practice college celebrates Yoga day on 21st June every year. Trained yoga teachers are invited for on the special session. Before Covid endemic continuous yoga class was run by the college for society without cost.

Campus as oxygen park

By covering maximum area under green cover i.e. under plantation college has been oxygen park for the human as well as birds and plants also. College campus works as an oxygen park because campus it provides good, fresh and non-contaminated air. Considering the conditions local people enjoying the campus ride at morning and evening time.

Illumination and ventilation

College buildings is more spacious and class room and all other rooms are good ventilated. Natural illumination and ventilation is too good. There is no need of artificial ventilation and illumination.

Sanitation drive

College conducts sanitation drive, which motivated student and staff about the cleanliness practices and give them exposure for the voluntary work.

House keeping/pest control

College shall be adopted a good practice of housekeeping and pest control.

Awareness campaign on Health

As a part of health and hygiene practices college arranges different awareness camping on different diseases. As a routine activity Awareness campaign on AIDS, Women health. Health checkup camp with rotary, tobacco free India. Swine Flue and recently on Covid-19 were arranged.

3.6 Training and Awareness.

The college runs nature club which conducts street plays on various environmental issues. NSS and NCC wings actively participate to promote Swachh Bharat Abhiyaan, and awareness rally. Time to time college organizes the lectures on experts on the issue of environment and social responsibilities.

3.7 Corporate Social Responsibility

College does not work as a typical educational institution. Since it is a part of key aim of college is to percolate the knowledge at the lower line of the society without any expectation.

Now a days it is called as Corporates social responsibility but same is the vision of college from their establishment and it is achieved locally via different activity. By following ways college reaches to society or mass.

Earn and learn scheme

It helps to students to become self-dependent. Earn and learns scheme run by college gives work to needy student give them chance to earn money while they are learning. Scheme is very fruitful and helpful who are unable to join education due to economic conditions.

Plantation with villagers and primary school

College has started a unique movement of plantation, motivational approached are developed in local people to plant more and more tree. As a part of this movement villagers from surrounding villages are motivated to plant a tree in front of their house and nourish the same. Basically primary schools are involved in this activity.

Consultancy in soil and water quality monitoring

College provides consultancy services in the field of soil and water quality monitoring. It is paid service and available to all personals. This service is availed by many required personals.

Blood Group Detection Camp.

College organised Blood group detection camp at chafoli for villagers. Record is maintained in Botany department.

Summary and Audit findings

1. College takes efforts for solid waste management by proper methods.
2. Recycling and reuse practice is followed strongly.
3. Organic and biodegradable waste is composted via Vermicomposting.
4. Electricity consumption is more and non-controllable at some departments.
5. Use of LED lamps is minimum and is to be encouraged.
6. Toilets and bathrooms are consuming more water particularly at hostels
7. Good watershed management shall be implemented on campus.
8. There should be well adequate water filtration system.
9. E-waste segregation, handling and disposal should be done properly.
10. Housekeeping practice shall be improved particularly for library with concentration on rodent and termite control
11. Visual signage boards for generating awareness about conservation of water and electricity are not found to be displayed.
12. Drinking water is currently not being tested for the water parameters according to prescribed standards

Recommendations

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

1. Vision Misson and Goal to be prepared with all the recommendations and current practice carried by institution.
2. The college should develop internal procedures to ensure its compliances with environmental issues.
3. Leakages and corrosion of pipes, overhead takes be maintained timely and promptly.
4. The college should improve its monitoring and reporting system for of water usage, electricity consumption etc.
5. The college should develop a segregation protocol for the segregation of different type of solid waste.
6. To achive the target of reduction in electricity and water consumption, there should be proper documented management programs to achieve the same.
7. College should arrange special drive to check of PUC and should be made mandatory for students who use and park personal vehicles in the college premises.