

6. Green Audit: A Weapon to Reduce Environmental Pollution

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Abstract:

All the physical surroundings on earth are called the environment, the atmosphere, the hydrosphere, and the lithosphere. A person's good health depends on the environment around him. Increasing population, civilization, urbanization, and industrialization are some main factors that contaminate our environment greatly. We have to protect our environment from being spoiled. For the protection and conservation of the environment, the Green Audit is an important tool for the management system that suggests different standard parameters, methods, and projects. The present study aims to focus on the current scenario of Green Audit. It also describes the causes for Green Audit and various processes under this. This study also mentions some of the regular practices, which we always continue as our part of daily life for the management of a clean environment such as the use of renewable energy resources, use of CFL, water harvesting, compost pit, etc. Green Auditing encourages financial savings through the reduction of various resources utilized. It develops the personal and social responsibility for all of us to clean our environment and save our earth.

Keywords:

Green Audit, Environment, Renewable energy, Water Harvesting

Key Concepts:

After the completion of this chapter, we will be able to understand some of the points given below:

- What is Green Audit and Why Green Audit is necessary?
- Is Green Audit and Environmental Audit are same?
- What are the objectives of the Green Audit?
- What is the process of Green Audit?
- What are the types of Green audits?
- Who needs to do the Green Audit?
- What are Green policies?

6.1 Introduction:

Due to infinite anthropogenic activities, the ecosystem is gradually disintegrating and it is becoming difficult to save the environment. It is a moral duty of man to keep his environment clean and to give clean air, water, and soil to his future generation. Today we are facing some global environmental issues like air, water, soil pollution, smog, global warming, acid rain, deforestation, wildfire, etc.

Earth is the only planet for life, so everyone's responsibility is to take care of the environment and save the earth. By making some simple changes in our daily lifestyle, we can make the environment clean and reduce the carbon footprint on the environment [1]. Now the question arises, why do we have to save our environment and how?

Everyone should save the environment for its individual benefits:

- The environment helps in protecting the ecosystem and generating a successful food chain and maintaining the earth's balance.

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- Forest provides raw materials for various consumer products give us clean air to breathe and provides habitats for a variety of species.
- The tree keeps the atmosphere clean and plays a critical character in the refilling of aquifers, blocking the wind.
- Maintaining the environment could prevent soil erosion, such as the growth of forest stability and its results to slow down global warming.
- Availability of food for organisms is possible only by preventing the environment.

Humans have a moral obligation to preserve the beauty of nature and reflect their personality. By protecting the environment, Protect humanity, feel good, relax and renew spiritual energy. Environmental protection encourages better physical and mental health, increases tourism, and promotes economic stability.

This way the environment around us is extremely essential for us and we should try to keep it good at any cost. Thus, Green Audit is a way to monitor the accuracy of the surrounding environment.

6.2 What is Green Audit?

The word Green means eco-friendly or not harmful to the environment and living beings. GREEN means “Global Readiness in Ensuring Ecological Neutrality”. Green Auditing is also known as Environmental Auditing, which is an umbrella term.

The green audit is **a weapon to identify the area of environmental impacts and evaluate the compliance of the operations on the development and regular activities within an organization.**

It is one of the processes of systematic recognition, quantification, recording, investigating, and analysis of constituents of environmental dissimilarity of various enterprises [2]. It is one of the processes where all the institutions or organizations are analyzed for environmental performance and investigated against their environmental policies and objectives. Therefore the official investigation of the institutions or organizations to know the effects on their environment is called Green Audit.

6.2.1 Green Audit: Environmental Audit in India:

Environmental Audit in India was conducted by the Comptroller and Auditor General (CG) of India. In the Constitution of India, Articles 148 to 151 related to this mandate.

India is one of the first countries to conduct environmental auditing mandatory. Environmental auditing is a type of environmental management tool for evaluating all those activities that have an impact on the environment against its standard set of criteria.

Each organization is familiar with the importance of the environment and knows the issues related to environmental performance which will be investigated and reported by different interested teams.

Thus, Environmental auditing is useful for the analysis and investigation of the environmental performance of different organizations. Types of Environmental Audit:

- Environmental compliance audits
- Environmental management audits
- Functional environmental audits

The environmental compliance audit checks the company's or site's legal compliance status.

The environmental management audit is very helpful to check and understand the organization or company's performance against its environmental standard set of criteria.

And the third type of functional environmental audit is useful to analyze and investigate the effects of particular activities and issues related to environmental performance. It investigates the particular field of concern such as air quality observation, materials management, or wastewater management.

6.2.2 History of Green Audit:

The Green audit began in the 1970s by looking at the problem caused by work conducted within the factory or any organizations whose activities are harmful to the surrounding

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environment and also create health issues for all. Mathew, Iencis, and Matis found that environmental accounting has been developed in four stages (1970-1980, 1981-1994, 1995-2001, 2002-onwards) and now at the current stage known as green auditing.

Although four stages of environmental auditing have been developed, only the last two stages are familiar to us because during this period a beneficial study was conducted and also we came to know the concept of environmental auditing [3-5].

Now, it is necessary to have complete knowledge of environmental audits. The first scientist who guided and provides a comprehensive study about the use of environmental audits is Ellington. During this period three journals are published where environmental matters are mentioned environmental auditors, European environment, and business strategy and environment [6-8].

In 2008 Porter, Simon & Hatchery is the first who mentions exactly what is the Green Audit? And after that, worldwide accepted the concept related to the green audit.

They well explained the concept of a green audit as an” Environmental Management System”(EMS) that is a continuous increase in environment and communication of the results of the EMS activities with the organization’s directions [9].

In 2008 Adeniji [10] is the first who was primarily concerned with an environmental audit of the companies to the growing importance of green issues [11].

6.2.3 Why Green Audit is Needed?

The rapid urbanization and economic development at the local, regional and global levels have led to several environmental and ecological crises. In this context, it is necessary to maintain the Green Campus environment for all the organizations and institutes which will help in sustainable development and simultaneously reduce the amount of atmospheric carbon dioxide from the environment.

The green audit can be an effective tool for an organization/institute/industry to evaluate how and where they are utilizing the most energy or water or resources; after that the

organization/institute/industry can consider how to execute implement and make changes and preserve their resources. To enhance the waste minimization plan and recycling project, the type and volume of waste can be determined.

It can improve health and promote environmental activities, values, and ethics. So, all the staff and students have a better understanding of Green's impact on campus. If self-inquiry is a natural and necessary outgrowth of quality education, it could also be stated that institutional self-inquiry is a natural and necessary outgrowth of a quality educational institution. Thus the college must evaluate its contributions toward a sustainable future.

As environmental sustainability is becoming one of the major issues for the nation, therefore the role of higher education institutions in environmental sustainability is more widespread. Recently, the Green Audit of an institution has been very important for its self-assessment that maintained the institution better and mitigates the present environmental problems.

Many institutions adopted lots of good measures to remove these issues but do not have proper documentation due to a lack of awareness of green audits.

All these non-scholastic efforts of the administrations play a crucial role in ensuring the green quotient of the campus is intact. Therefore, this chapter aims to identify, quantify, investigate and prioritize the framework of Environment Sustainability in compliance with the applicable regulations, policies, and standards.

6.2.4 Benefits of the Green Auditing:

- It helps to protect the environment and solve many environmental issues.
- It suppresses the environmental impacts like wastewater and energy costs.
- Improving relations with stakeholders and users to evaluate environmental standards.
- Providing the basis for an environmental management system (EMS).
- Encourage and empower the organizations to frame a better environmental performance.
- More efficient resource management and provide the basis for improved sustainability.
- To create a green and plastic-free campus.

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- To enable waste management by reducing waste generation such as solid and water recycling. It also recognizes the cost-saving methods through waste minimization and management.
- Enhance the environmental guidelines and alert about duties.
- Impart environmental education through a systematic environmental management system and improve environmental standards.

So, Green auditing should become a precise tool in the management and monitoring of the environmental performance and sustainable development programs of all institutions.

6.2.5 Objectives:

- To observe Geographical Location.
- Tabulate Floral and Faunal diversity.
- To observe Meteorological parameter.
- To reduce Energy Consumption.
- To conduct a proper waste disposal system.
- Keen observation of Ecological Environmental conditions.
- To conduct awareness and Training on Sustainability for Students.
- To ensure development along with saving the environment.
- To ensure some legal rules should be framed for the cleanliness of the environment with present legislations of the State and other legal requirements.
- Installation of devices that reduces the pollution and authentication of such devices by the competent authority.
- To ensure optimum utilization of resources.
- To ensure that industries have taken sufficient precautions to protect their employees from pollution resulting from it.
- To encourage and suggest improving the system and also promote a safe and clean environment.

6.2.6 Types of Green Audit:

A. Based on frequency such audit is of two types:

- a. **Concurrent/ Cyclical Audit:** It is mainly managed by the entity's environmental unit segment/outside consultants or a combination of both on a scheduled cycle.
- b. **Single Special Purpose Audit:** It is proposed for a special purpose and is normally managed by outside agencies. It is carried in the special need, not regularly.

B. Based on scope, objectives, and risk assessment such audit may be categorized as:

- a. **Compliance Audit:** This audit involves the review's level of compliance with relevant environmental and safety standards.
- b. **Performance Audit:** This audit check the environmental impact of programmers, EMS, compliance with environmental laws, etc.
- c. **Transactional Audit:** It evaluates the environmental risks and accountabilities of land/facilities before a real estate acquisition or divesture of business. This audit is very important as both the buyers and sellers **are directly involved and** want to know the limit of any liabilities due to environmental contamination.
- d. **Product/Activity Audit:** It is the audit that involved specific products, processes, and their distribution that determine the requirements to make them environmentally friendly and to confirm that they are meeting products and chemical restrictions. Such type of audits also assesses packaging materials for their reusability and recyclability.
- e. **Issues Audit:** It estimates the corporate performance in a particular field (e.g. Oil and Natural Gas Corporation's impact on habitats or impacts on Sundarban for the potential chemical factory in Nayachar of West Bengal)
- f. **Risks Audit:** Considers occupational health and safety/risks to employees and the public.
- g. **Energy and Waste Audit:** Evaluate usages of energy with alternative sources and track the reasons for waste, risks involved, etc.
- h. **Process and Safety Audit:** It evaluates whether policies, processes, monitoring, appraisal, documentation, etc. are in the proper place. It also considers present/potential hazards and risks arising from processes.

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- i. **Quality Audit:** It checks total quality management (TQM) from the perspective of the environment.
- j. **EMS Audit:** It examines whether the given facility meets EMS standards (viz., ISO 14001, EMAS).
- k. **Baseline Audit/Future Scenario Assessment:** It helps to identify all the possibilities of environmental issues in addition to the current one and planned to evaluate the probability/intensity of an organization's ability to respond to new challenges.

6.2.7 Methodology:

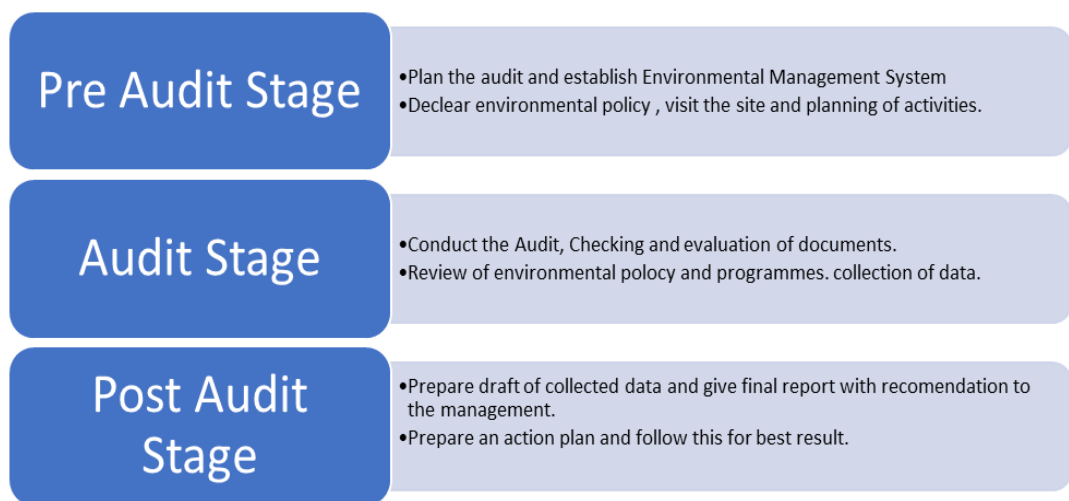


Figure 6.1: Stages to Perform the Audit

6.2.8 Tools for Performing Green Audit:

- Physical inspection of the campus.
- Preparation of questionnaires.
- Observation and review of the documentations.
- Data analysis and measurements.

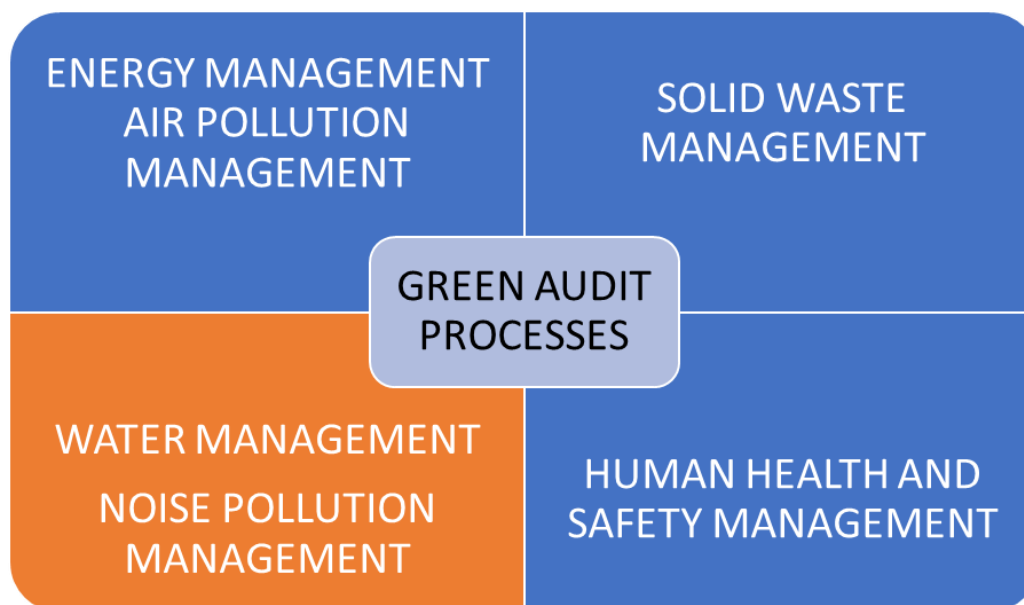


Figure 6.2: Process of Green Audit

6.2.9 Status of Environmental Management Summarized by these Following Studies:

- a. **Biodiversity Audit:** Butterflies and Avifauna are attracted by host plants, so more species, and diverse host plants can be planted. In a botanical garden, plants are arranged in a taxonomical manner.
- b. **Solid Waste Management:** Solid waste includes paper, glass, plastic, biodegradable, canteen, construction waste, laboratory waste, etc. Vermicomposting and compost pits are installed for biodegradable/ Garden waste.
Some National and International Days related to cleanliness and solid waste management activities are conducted by students and other staff members. The standard procedure should be developed by organizing committee members for recycling waste materials. Storage and management of laboratory waste should be properly.
- c. **Energy Management:** LED and CFL should be used to reduce power consumption. Energy conservation awareness programs should be conducted by the college. 5 Star rating electrical appliances should be installed on campus. The use of renewable sources of energy like solar energy is the best way for saving electricity.

- d. **Water Management:** On any campus, water sinks are toilets, garden, laboratory, bathroom canteen, mess, etc. To prevent overflow of water through overhead tank, there is a need to a fitted auto cut system in every water storage tank. Regular checking of leakage of water from water channels, pipes, and taps should be a must. To reduce water use and reduce wastage of water, the micro irrigation system can be set up for gardening.
- e. **Air Quality Management:** For an aesthetic look of the campus and to improve environmental quality, a good canopy of trees is a must, so keeping the campus green is everyone's responsibility.
NSS and NCC Volunteers are responsible for plantation programs in and around campus and conduct awareness programs for other students. The more trees are there on campus, the more pure air there will be.
- f. **Sound Management:** Thick green belts are the best remedy for noise pollution. Banning student vehicles and pressure horns vehicles within the college premises. In the classroom, installing noise-absorbing fixtures and promoting awareness programs for the campus community about the effects of noise pollution. There should be silence zones in college like the library, auditorium, and seminar hall.
- g. **Human Health and Safety Management:** An awareness program for vector-borne diseases should be conducted. Regular health check-up is necessary and emergency phone numbers should be displayed in the proper place.

6.3 Conclusion:

In the end, it can be concluded that if the environment is clean, only then life go on, so it is the responsibility of all to keep the environment clean and maintain life on the earth. For continuous monitoring of environment, the Green Audit is very important .Green Audit or the Environmental Audit is a continuous process and everyone should understand and implement this process and help to clean the environment.

Any college building can be rebuilt based on of environmental standards and convert into the Green building. Follow some simple eco-friendly rules like reducing plastic use, implementation of rain water harvesting, creating garden in campus, using electronics instead of paper also helps to create green campus and healthy future. .

6.3.1 Questions for Review:

- What is Green Audit?
- Objectives and benefits of Green Audit.
- Necessity for Green Audit.
- Process of Green Audit.

6.3.2 Questions for Discussion:

- How to conduct a Green Audit in an establishment in a low budget?
- Will the process of Green Audit be the same for every institution?
- Does the green audit of an institution be influenced by the geographical environment there?
- What are the differences between the Green Audit of educational institutions and industrial milieu?

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