



# IMPORTANCE OF ENVIRONMENTAL MANAGEMENT SYSTEM THROUGH GREEN AUDIT PRACTICES IN EDUCATIONAL INSTITUTES IN AHMEDNAGAR DISTRICT OF MAHARASHTRA.

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**Abstract-** The environment defined as that whole outer physical and biological system in which man and other organisms live as a whole, albeit a complicated one with many interacting components. The wise management of that environment depends upon an understanding of those components of its rock, minerals and waters of its present and potential vegetation, of its animal life and potential for livestock husbandry and its climate. A nation's growth starts from its educational institutions where the ecology is thought as a prime factor of development associated with environment. A clean and healthy environment aids effective learning and provides a conducive learning environment. Educational institutions now a day are becoming more sensitive to environmental factors and more concepts are being introduced to make them eco friendly. Earth Summit Rio 1992, the concept of environmental audit was accepted by many countries. In Indian scenario, very few industries especially educational institutes were inspired. If green audit is enforced in an effective way in the educational institutes then there are many advantages that could be adopted from it. Education aims at drawing out the innate potentialities of every individual. For this purpose, the students undergo the learning process in a systematic order is school, so that there innate qualities are developed. Environment Education is the process of recognizing values and classifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter relatedness among man, his culture and his biophysical surroundings. Teachers occupy as key position in the educational transformation process by becoming role models to students. Similarly in the Environment Education program, they act as agents for developing proper awareness among students by providing adequate knowledge about environmental issues. The teachers can use the

green links of information collected from newspapers or electronic media and relate them to the topic which is being taught. As Environment Education is an interdisciplinary subject, different teachers teaching different subject can relate the concepts taught to the environment. A good teacher can be as friend of the students and by taking them to the scenic beauty spots of nature the teacher can enable them to enjoy the beauty of the wildness. As a philosopher, the teachers are able to enable the students to establish the man – nature relationship existing in the environment. This research explains the importance of Green auditing concepts and the role of educational institutes in the green audit.

**Keywords – Environment Management, Green Audit, Awareness, and Human dominated ecosystem, Energy Management, Waste Management.**

## 1) Introduction

All organisms modify their environment, and humans are no exceptions. As the human population has grown and the power of technology has expanded, the scope and nature of this modification has changed drastically. Until recently, the term “human- dominated ecosystems” would have elicited images of agricultural fields, pastures or urban landscapes, now it applies with greater or lesser force to all earth. Many ecosystems are dominated directly by humanity, and no ecosystem on Earth’s surface is free of pervasive human influence. The growth of human population and growth is the resource base used by humanity is maintained by a suit of human enterprises such as agriculture industry, fishing and international commerce. These enterprises transform the land surface through cropping, forestry and urbanization. All are ongoing. These relatively well documented changes in turn entrain further alternations to the functioning of the Earth’s system, most notable by driving global climate change and causing irreversible losses of biological diversity.

Environment is not merely atmosphere and other physical factors surrounding us but is the complex of all factors which not only affects on organism one time but all organism all the time. In a larger sense environment constitutes the various physical, mental, social, spiritual, educational, economic and intellectual aspects of whole humanity and when kept healthy and inspiring, it promotes the progress and development of mankind. The environmental problems with which now we are concerned embrace diverse aspects ranging from economic, social and psychological problems of human settlement to the management and use of natural resources and habitats, Since time immemorial, man has been and will always be exploiting nature without taking in to consideration of environment deterioration. In fact so called progress, in reality, is disturbing the environmental balance seriously leading to breakdown of life support system on the earth.

Education aims at drawing out the innate potentialities of every individual. For this purpose, the students undergo the learning process in a systematic order is school, so that there innate qualities are developed. Environment Education is the process of recognizing values and classifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter relatedness among man, his culture and his

biophysical surroundings. Keeping the importance of environmental audit in a view, the present research through the light on the basic process of environmental audit process and how it play important role through educational institutes to achieve environment awareness among the students.

## Background-

**2) Education for sustainable Development-** The United Nations Conference on the human development in Stockholm (1972) helped in focusing the attention on environment concerns. In the years following the Stockholm conference, the global community acknowledged the need for inters relating environment and socio-economic issues of poverty and under development. In 1980's, in response to a growing realization of the need to balance economic and social progress with concerns for environment resulted on the concept of sustainable development. The concept of sustainable development gained worldwide acceptance with the publication of "Our Common Future" by the world commission of Environment and Development (1987). The commission defined sustainable development as "Development that meets the needs of present, without compromising the ability of future generations to meet their own needs". This definition made it clear that while development may be essential to satisfy human needs and improve the quality of life, but it should occur in such a way that the capacity of the natural environment to meet the present and future needs is not compromised. In 1991, the world conservation Union (IUCN) UNEP and WWF jointly published a document "Caring for Earth; A strategy for sustainable living, which complemented the definition of sustainability in our common future"

Chapter 36 of Agenda 21 emphasized that education is critical for promoting Environment and developmental issues. Ever since sustainable development and in improving the capacity of people to address development has been a common consensus on the role of education for making social changes, this concept has been highlighted in the international forum. The Johannesburg summit of 2002 broadened the vision of sustainable development and designed the educational objectives of Millennium.

## 3) Green Auditing/Environmental auditing

Green Auditing/Environmental auditing began in the United States of America and they were not started by the local authorities, but were the commercial response to national requirements. Auditing were the result of legislation which made companies responsible for the environmental damage they were causing. In 1970's the US government adopted the polluter pays principle and in order to avoid liability, the companies resorted to broad performance reviews and compliance audits. This helped the companies to evaluate how they were performing with regard to the control of pollution. Throughout the 1970's and 80's a number of antipollution laws and regulations grew, of which the most significant are 'Resources Conservation and Recovery Act', 'The Comprehensive Environmental Response Compensation and Liability Act' and 'The Clean Air Act'. In the years since its inception, the concept of Environmental Auditing has broadened and has become as major tool for promoting good environmental management. The concept of environmental auditing has been extended so that the governmental and local institutions are included in its purview.

A typical environmental audit involves the analysis of inputs and outputs and looks in to the environmental impacts of the raw materials used and the products that are produced. It also analysis the impact of the products and wastes that emerge out of the factory as a result of the production and administrative processes. Environmental auditing reflects the role of the government in monitoring various environmental issues like waste disposal pest control, building preservation and so on. The growing public concern for green issues has forced governments to formulate environmental statements and charters. Thus environmental auditing is seen as a vital means of converting aspiration in to effective action, as the experience of auditing is gained and shared it is clear that they have a valuable role to play in the systematic incorporation of environmental perspectives into many aspects of policy, helping to trigger new awareness and priorities in the society. Auditing is gained and shared it is clear that they have a valuable role to play in the systematic incorporation of environmental perspectives into many aspects of policy, helping to trigger new awareness and priorities in the society.

#### 4) ENVIRONMENTAL AUDIT IN EDUCATIONAL INSTITUTES

In 2006, Government of India has declared the National Environment Policy 2006 and made green audit mandatory to each industry. According to the policy it is a response to India's national commitment to a clean environment to a clean environment, mandated in the constitution in Articles 48 A and 51 a (g) (DPSP) strengthened by judicial interpretation of Article 21 (National Environmental Policy 2006) It is recognized that the maintenance of the healthy environment is not the responsibility of the state alone. It is the responsibility of every citizen and thus a spirit of partnership is to be realized through the environment management of the country. 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, the supreme Audit Institution of India is the highest Institution of auditing in the country. By realizing the need towards environment, NAAC, an autonomous body under UGC has added the concept of environmental audit in accreditation methodologies of universities and colleges.

A nation's growth starts from the educational institutions, where the ecology is thought as a prime factor of development associated with environment the activities pursued by Educational Institutions can also create a variety of adverse environmental impacts. Environmental auditing is a process whereby an organizations performance is tested against its environmental policies and objectives. Green Audit is defined as an official examination of the effects a educational institute has on the environment. Green audit can be useful tool for educational institute to determine how and where they are using the most energy or water or resources, the educational can then consider how to implement changes and make savings .It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. Green auditing and the implementation of mitigation measures is a win situation for all the educational institutions, the learners and the planet. It can also create health consciousness and promote environmental awareness values and ethics. It provides staff and students better understanding of green impact on campus. Green auditing promote financial savings through reduction of resource

use. It gives an opportunity for the development of ownership, personal and social responsibility for students and teachers. If self enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self enquiry is a natural and necessary outgrowth of a quality educational institutions. Thus it is imperative that the educational institutes evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutes in relation with environmental sustainability is more prevalent.

#### 5) AIMS AND OBJECTIVES OF ENVIRONMENTAL AUDIT IN ACADEMIC INSTITUTES.

To nurture environmental friendly management in academic institutions following aims and objectives were formulated.

- To secure the environment and cut down the threats posed to human.
- To recognize the initiative taken by organization towards environment.
- To provide baseline information to enable organization to evaluate and manage environmental change, threat and risk.
- To recognize the effects of an organization and vice versa.
- To recognize, diagnose and resolve the environmental problems.
- To suggest the best protocols for sustainable development organization and environment.
- To assess environmental preference and the effectiveness of the measures to achieve the defined objectives and targets.
- To identify the different pressures on organization to improve their environmental performance.
- To ensure that the natural resources are utilized properly as per national policy of environment.
- To establish the parameters for maintaining health and welfare of the community of the organization.
- To set the procedure for disposal of all types of harmful wastes.
- To reduce energy consumption.
- To give preference to the most energy efficient and environmentally sound appliances.
- To minimize the consumption of water and monitor its quality.
- To identify the risks of hazards and implement the policies for safety of stakeholders.
- To facilitate the stakeholders with different aspects of disaster management.
- To train all stakeholders of the organization and empower them to contribute and participate in the environmental protection.
- To make sure that rules and regulations are taken care to avoid the interruptions in environment.

## 6) SURVEY FOR GREEN AUDIT PRACTICES IN EDUCATIONAL INSTITUTES

A survey was arranged to study awareness among the educational institutes regarding Green Audit Practices. A questionnaire was prepared for survey in Ahmednagar district educational institutes. The data obtained was analyzed and Campaign conducted regarding management of green audit shown need to work in this field This campaign appealed to educational institutes to apply environmental practices and develop systematic approach through Green Audit. To summarize, we propose research significance work for survey of Environmental awareness through Green Auditing practices. Study current practices in this area and establish Environmental management protocol particularly Green Auditing by following all legal aspects and International standards in K G College of Arts and Commerce, Ahmednagar, Maharashtra. This research work is undertaken for systematic study of Environmental Awareness particularly focusing on Green Audit as currently it's becoming great issue to manage Green Auditing practices for preventing environmental damages and also health related issues to human beings and other lives on earth. In this work the main aim is to develop protocol for environmental awareness in sequence like pre audit, decision methodology for Reduce, Reuse and Recycle and disposal

### TARGET AREAS OF GREEN AUDITING

Green audit is the fact that they are carried out, at defined intervals, and their results can illustrate improvement or change over time. The college has adopted the 'Green Campus' system for environmental conservation and sustainability. There are main three pillars i.e. zero environmental foot print, positive impact on occupant health and performance and 100% graduates demonstrating environmental Green audit form part of resource management process. Although they are individual events, the real value of literacy. The goal is to reduce CO2 emission, energy and water use, while creating atmosphere where students can learn and be healthy. Eco Campus concept mainly focuses on the efficient use of energy and water; minimize waste generation or pollution and also economic efficiency. All these indicators are assessed in process of "Green Auditing of educational campus. Eco Campus focuses on the reduction of contribution to emissions, procure a cost effective and secure supply of energy, encourage and enhance energy use conservation, promotes personal action, reduce the campus's energy and water consumption and integrate environmental considerations in to all contracts and services considered to have significant environmental impacts. Target areas included in this green auditing are water, energy, waste, green campus and carbon footprint.

### AUDING OF WATER MANAGEMENT

Water is a natural resource, all living matters depend on water. While freely available in many natural environments, in human settlements potable water is less readily available. We need to use water wisely to ensure that drinkable water is available for all. Now and in the future. A small drip from a leaky tap can waste more than 180 liters of water to a day that is a lot of water to waste, enough to flush the toilet eight times. It is therefore essential that any environmentally responsible institution should examine its water use practices. Water auditing is conducted for the evolution of facilities of row water intake and determining the facilities for water treatment and reuse. The

concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible institution examine its water usage practices.

## AUDITING FOR ENERGY MANAGEMENT

Energy cannot be seen, but we know it is there because we can see its effects in the forms of heat, light and power. This indicator addresses energy consumption, energy sources, energy monitoring, lighting appliances and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. An old incandescent bulb uses approximately 60W to 100W while an energy efficient light emitting diode (LED) uses only less than 100 W. Energy auditing deals with the conservation and methods to reduce its consumption related to environmental degradation. It is therefore essential that any environmentally responsible institution examine its energy use practices.

## AUDITING FOR WASTE MANAGEMENT

Pollution from waste is aesthetically unpleasing and results in large amount of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals. This indicator addresses waste production and disposal, plastic waste, food waste, and recycling. Solid waste can be divided in to two categories: general waste and hazardous waste. General wastes include what is usually thrown away in homes and in schools such as garbage, paper, tins and glass bottles. Hazardous waste is waste that is likely to be threat to health or the environment like cleaning chemicals and patrol. Unscientific landfills may contain harmful contaminates that leach in to soil and water supplies and produce greenhouse gasses contributing to global climate change. Furthermore solid waste often includes wasted materials resources that could otherwise be channeled in to better service through repair, and reuse. Thus the minimization of solid waste is essential to a sustainable college. The auditor diagnoses the prevailing waste disposable policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing.

## AUDITING FOR GREEN CAMPUS MANAGEMENT

Unfortunately biodiversity is facing serious threats from habitat loss, pollution, over consumption and invasive species. Species are disappearing at an alarming rate and each loss affects nature's delicate balance and our quality of life. Without this variability in the living world, ecological systems and functions would break down, with detrimental consequences for all forms of life, including human beings. Newly planted and existing trees decrease the amount of carbon dioxide in the atmosphere. Trees play an important ecological role within the urban environment, as well as support improved public health and provide aesthetic benefits to cities. In one year, a single mature tree will absorb up to 48 pounds of carbon dioxide from the atmosphere, and release it as oxygen. The amount of oxygen that a single tree produces is enough to provide one days supply of oxygen for people. So while you are busy

studying and working on earning those good grades all the trees on campus are also working hard to make the air cleaner for us. Trees in our campus impact our mental health as well; students have shown that trees greatly reduce stress, which a huge deal is considering many students are under some amount of stress.

## AUDITING FOR CARBON FOOTPRINTS

Commutation of stakeholders has an impact on the environment through the emission of green house gases in to the atmosphere consequent to burning of fossil fuels such as petrol. The most common green house gases are carbon dioxide, water vapor, methane, nitrous oxide and ozone of all the green house gases, carbon dioxide is the most prominent greenhouse gas, comprising 402 ppm of the Earth's atmosphere. The release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon emissions.

An important aspect of doing an audit is to be able to measure your impact so that we can determine better ways to manage the impact. In addition to the water, waste, energy and biodiversity audits we can also determine what our carbon footprint is, based on the amount of carbon emissions created. One aspect is to consider the distance and method traveled between home and college every day. It undertakes the measure of bulk of carbon dioxide equivalents exhaled by the organization through which the carbon accountings are done. It is necessary to know how much the organization is contributing towards sustainable development. It is therefore essential that any environmentally responsible institution examine its carbon footprints.

## AUDITING OF E WASTE MANAGEMENT

Advanced electronic gadgets have become vital part of our daily lives providing us with more comfort, security, faster acquisition, more storage space and exchange of information. On the other hand, it has also turn in to unrestrained resource consumption and an alarming waste generation. All over the world in developed countries and under developing countries like India face the problem of E waste management. The rapid growth of technology, up gradation of technical innovations and a high rate of obsolescence in the electronics industry have led to one of the fastest growing waste streams in the world which consist of end of life electrical and electronic equipment products very fast. Many of the trends in consumption and production process are unsustainable and pose serious challenge to environment and human health. Minimization of waste, development of cleaner products and environmentally sustainable recycling and disposal of waste are some of the issues which need to be taken in to consideration by all concerned users, manufacturers while ensuring the economic growth and enhancing the quality of life. E waste therefore, broadly describes loosely discarded obsolete, broken, electrical or electronic devices. An E waste consists of all waste from electronic and electrical appliances which have reached their end of life period or are no longer fit for their original intended use and are destined for repair, recovery, recycling or disposal. It also includes computer and its all accessories monitors, printers, keyboards, central processing units etc.

## CONCLUSIONS

Awareness and knowledge of environmental process through green audit play an important role in environmental education. But only awareness and knowledge alone is not sufficient. But creating behavioral change for permanent basis is important. Environment education attempts to teach students “how to think” and not what to think. Education can help and develop this knowledge and competency. The awareness about environment guides the attitude of an individual both in the feeling and thinking aspects of his personality. Broadly there are three phases of awareness generation - Information about environment significance and knowledge about environment crisis and the wisdom for the solution of **impact** of this crisis. These three aspects constitute the general environmental awareness. A person with proper awareness can develop a positive feeling and attitude and can influence the society which in turn can influence the policies of the state the new policies and programmes will bring changes in the nature of production, style of consumption and method of distribution which will force the society to change the life style in a sustainable manner. Teachers occupy as key position in the educational transformation process by becoming role models to students. Similarly in the Environment Education programme, they act as agents for developing proper awareness among students by providing adequate knowledge about environmental issues. The teachers can use the green links of information collected from newspapers or electronic media and relate them to the topic which is being taught. Academic institutes need to be prepared to become environmental especially green audit fascinators they should proactively adopt the activity oriented approach to teaching and learning through environment management practices.

It was found that most of the academic institutes were involved in activities which are directly related to the concept of sustainable development but were not documenting these activities through green audit.

As far as environmental management system and green audit is considered globally, this research may give systematic procedure for green audit, that will take care of teachers and students respectively. This will reduce waste generation. A systematic survey related to various elements of green audit and its processes will be analyzed through this research the experimental work will focus on experimentations of various academic institutes for reuse, resale and recycle be carried out. Output of this research work will have social impact regarding environmental management system through green audit locally and we can prevent environment loss which will become great risk to human community in future. Though academic institutes take part in restoring the environment, still there is scope for the further action.

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