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GREEN AUDIT: NEXT GENERATION'S HOPE**DR. S. K. JHA****FACULTY****MANAGEMENT PROGRAMME****L. N. MITHILA UNIVERSITY****DARBHANGA****ABSTRACT**

As we have experienced the effects of the globalization and industrialization on mankind and society at large, it is noticed that there is a serious need to create a checkpoint to abet the exponential exploitation of the natural resources for the future generation. The current natural resources is also part of the wealth of the future generation and morally or legally exploiting the rights of the society for the personal benefit should not be granted at any cost. So there is a serious need to inculcate the principle of Green Audit within an organizational which will be benefiting the organization and society at large – not only in environmental terms but also in economic terms. This paper is a modest attempt to discuss on the concept, need and the role of the green audit to work as a checkpoint and prevent further devastation of the environment. The paper also outlines different steps of Green Audit. Finally the paper presents an overview of present status as well as challenges and future expectations of Green audit in India for the betterment of human life.

KEYWORDS

Corporate Environment Responsibility, Ecological System, Environmental Impact Assessment, Industrialization, Sustainable Development.

INTRODUCTION

It is now widely recognized that humankind is on the verge of an environmental catastrophe and perhaps very few options are left to avert the crises which have been looming large in the last four decades. In the face of such crisis, which is caused by our insatiable greed, it is necessary to re-examine by every nation whether the current pattern of consumption can be continued without any further considerations about the burden on the supporting environment. This is paramount because, on one hand, the material progress of the industrial society has taken a very serious toll on the capacity of our planet to bear the burden, while, on the other hand, the depletion of natural resources are eating into the vitals of many developing nations. Clearly, this requires Green Audit - a kind of check and balance or a dashboard which would tell us what is sustainable and what is not.

In the context of a developing country like India, it is important that national efforts are directed towards preservation of those vital resources. So far the Indian economy has been supported by the abundance of its natural resources. But the demands placed on the environment by the huge population of the country may far outweigh the capacity of the environment to sustain the additional burden put on it. Therefore, if India is to sustain its continued pursuit of economic growth, its natural environment must be preserved and enhanced.

In view of its importance, it is time that Green audit becomes a reality by now. Green audit is expected to give numbers to the environmental impact of development. India is in need of alternative indicators to measure true welfare improvement. Presently, the country does not have a system in place to factor in the environmental cost of industrial activity. There is a growing need to address this issue in the best interest of all of us to safeguard our mother earth.

Green audit can be defined as an audit of 'ecological system' of a particular habitat (country, state, local authority, office, home, school, public place etc) within a given period with an objective of assessing the biodiversity.

GREEN AUDIT - A CONCEPTUAL FRAMEWORK

Green Audit is a concept in its nascent stage which is a derivative of Corporate Environmental Responsibility which, again, is a derivative of Corporate Social Responsibility. To understand the actual impact of industry or any other item with environment and managing the consequential affect under existing legal framework of the state along with measures taken by the corporate bodies to mitigate such effect will be termed Corporate Environmental Responsibility. So the examination whether Corporate Environmental Responsibility has been met by the Corporate houses or not may be termed as Green Audit.

The major problem faced by the human society is the increase in pollution as the quality of life and survival of the human society is largely dependent on the amount of pollution. Pollution that is a major outcome of industrialization is affecting various natural resources like soil, water, air, etc. and it has a vast impact on the quality of the human life even for a decade or so.

There is an urgent need to keep a check on the activities of the industries, which is leading to such a kind of pollution, and so the concept of Green Audit has come into existence to work as a checkpoint and prevent further devastation of the environment.

For the betterment of human life Green Audit is considered as one of the best tools. Green Audit will be safeguarding the interest of the future generation wherein it will restrict the over-exploitation of the resources which is also the part of the wealth of future generations. Even the usage of chemical fertilizers for agriculture is reducing the quality and yield of the harvest in longer run, so people have started to focus on sustainable means by adopting organic farming wherein all the non-chemical fertilizers and pesticides have been applied to cultivate the crops and outstanding results have been obtained by adopting these new technologies. So one can say that the industrial growth of today is at the cost of tomorrow. Green Audit is a snapshot of the environmental resources being used at a specific venue during a specific time.

Green Auditing is "the systematic examination of the interactions between any business operation and its surroundings. This includes all emissions to air, land and water, legal constraints; the effects on the neighboring community, landscape and ecology, the public's perception of the operating company in the local area ... it does not stop all compliance with legislation. Nor is it a 'green-washing' public relations exercise ... Rather it is a total strategic approach to the organization's activities" (The Confederation of British Industry, 1990). It is "a methodical examination of environmental information about an organization, a facility or a site, to verify whether, or to what extent, they conform to specialized audit criteria. The criteria may be based on local, national or global environmental standards" (The World Bank). It is 'a management tool used by industry to evaluate its environmental performance' (United Nations Environmental Programme, 1989). Therefore, in a nutshell, green audit is a systematic and methodical assessment and review of the organizations activities and its services in relation to environmental green issues.

Green audit involves the inspection of a company to assess the total environmental impact of its activities, or of a particular product or a process. For example, a green audit of a manufactured product looks at the impact of production, including energy use, and the extraction of raw materials used in manufacture, use of the raw material which may cause pollution and other hazards, and waste disposal, potential of recycling. Hence the green audits are tools that organizations use to identify their environmental impacts and assess their compliance with applicable laws and regulations, as well as with the expectations of their various stakeholders. It also serves as a means to identify opportunities to save money, enhance work quality, improves employee health, safety and morale, reduce liabilities and achieve other form of business values.

GREEN AUDIT – CONTEMPORARY PHENOMENON

Public awareness of biodiversity loss is increasing, leading to consumer preferences and purchasing decisions. Some examples may be replacing halogen lamps and fluorescent lamps with Light Emitting Diode (LED), plastic carry bags with jute or paper bags, paper tickets with SMS tickets, electronic filing of document with government authorities, electronic funds transfer etc.

Financial institutions are also insisting for Environmental Impact Assessment Reports from the corporate houses before sanctioning loans. All businesses are directly or indirectly dependent on biodiversity and ecosystem services and they create some impact on the nature – positive or negative.

Commitment to manage biodiversity starts from the corporate culture, vision, mission and values of the business entity.

According to a study more than one-third of 1,103 species like mammals, birds, reptiles, insects and plants could become extinct in fifty years because of pollution and global warming (Singh, 2007).

It will not be rational to say Green Audit is confined to an entity or to industry as a whole. In broader scene, the country as a whole can access the environment. To address the environmental issues of a specific location or of whole country, the Supreme Audit Authority may plan Green Audit.

DRIVING FORCE BEHIND GREEN AUDITING

In the past, the main driving force behind Green Auditing were fear of prosecution and high penalties imposed by regulatory authorities. Now it is considered as an exercise to identify and reduce liabilities. Experts have identified different drivers of such auditing. Vinten (1996) categorized forces in three groups organization strategy, functional areas, operational functions. Hillary (1999) identified customers, local government, community, regulator, and employees etc. as most important drivers. FORGE Group (2002) identified four components as key drivers — strategy, management, operational performance and reporting. World trade and globalization depend on responsible business practices, if they are to win public confidence and deliver global prosperity. That is where codes of conduct come in, whether towards the environment, labour or other ethical rules (Paramasivan, 2002). The practice of Green Auditing became popular and institutionalized in global context because of several charters, programmes and rules such as International Chamber of Commerce Business Charter, principles of Coalition of Environmentally Responsible Economies (CERES), European Eco-Management & Audit Scheme (EMAS), and International Organization for Standardization (ISO) etc. Worldwide different organizations have been certifying their operations and facilities using ISO's standards relevant for Green Auditing.

All of the world's 100 largest MNCs have issued environmental codes/ EHS (Environment, Health and Safety) policy statements. Major leading companies of different countries have incorporated such auditing framework into their business practices and get their operations/facilities certified by the Green Auditors. These include Dow Chemicals, Kodak, Shell, Tata Motors, ITC, Jindal Steel Works (JSW) and Reliance etc. Since 2000, there has been a perceptible increase in the number of Green Audits in ASOSAI member nations. Japan, Pakistan, Kuwait, Bhutan, Malaysia, New Zealand, Saudi Arabia, Turkey, Australia, Korea, China, India, Cyprus, Thailand, Azerbaijan, Bangladesh etc. countries have been conducting Green Audits.

India being a party to the United Nations Convention on Biological Diversity (CBD) held in Rio De Janeiro on 5th June 1992, enacted 'The Biological Diversity Act', 2002, to meet the following main objectives set by the Convention.

- Conservation of Biological Diversity
- Fair and equitable sharing of benefits arising out of the utilization of genetic resources
- Sustainable use of the components of the bio diversity

'Sustainable Use' as per Section 2(o) of the Biological Diversity Act, 2002, means 'the use of components of biological diversity in such manner and at such rate that does not lead to the decline of the biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.'

GREEN AUDIT : MULTIPLE DISCRIMINANT ASSESSMENT

Like all audit programmes, Green Audit has to have a comprehensive format on the basis of which deep-probing exercises on various issues and the findings have to be put on a canvas for deriving knowledge of the status of each of them and the actions warranted to tie up the loose ends. Under MDA it would be relevant to list all the relevant item and assess their impact with particular reference to whether any of the listed items has exceeded the prescribed limits. The technicalities of each item listed in the programme could be graded with respect to their impact in segments or as a whole, and would require threadbare examination jointly and severally and discussion as respects their impacts net of both possible positive or negative effects over a specific time period. MDA would also highlight individual items, their current status and future effects.

A random selection of the items that could figure in the list for viewing the effects may be:

- a. Greenhouse Effects
- b. Climate Change
- c. Carbon Releases
- d. Felling Trees
- e. Vanishing Flora and Fauna
- f. Unclean Air
- g. Sub-soil Water: Development Stock
- h. Destruction of Aromatic and Medicinal Plants
- i. Assessment of Points Raised Earlier
- j. Rising River Beds
- k. Release of Pollutants

Green audit include the following 5 components :

- The Office Survey
- The Office Survey
- The Carbon Footprint
- The onsite visit
- Final Green Audit Report

OBJECTIVES OF GREEN AUDIT

This concept has got its origin in recent past and suddenly got acceleration due to heavy industrial traffic which ends with unaccountable emission- resulting pollution. Due to growth in population, needs has increased. Needs of human beings can only be met by installing industries. The increase in industries has not only supplied the need of humans but also had been damaging the environment by emitting carbon components.

The provision for Environmental Impact Assessment prior to allowing an industry to set up is the first step to ensure that the project or industry will not harm the environment. But still the production and operation process will have some impact on environment. That post-production assessment of impact of environment is the motto of Green Audit.

Objectives of Green Audit Are :

- To ensure development along with safeguarding the environment.
- To reduce energy consumption to foster environment.
- To ensure compliance with present legislations of the State and other legal requirements.
- To physically ensure installation of devices that reduce pollution and authentication of such devices by competent authority.
- To ensure optimum utilization of resources:
- To see whether provisions are made for liabilities arising out of unintentional pollution related damages and their compliance in cases so arose.
- To ensure that sufficient precaution has been taken by the industry to protect the employees 'of the industries from pollution resulting from it.
- To suggest improvement in the system to promote safe and clean environment.

Green Auditing has become important because of the following reasons:

- Global Warming
- Ozone Layer Depletion
- Toxic Pollution
- Genetic Erosion and Biodiversity Loss
- Other Factors - Lending institutions often before financing a project may ask Green Audit report. Socially Responsible Investors (SRI) also seek to invest in environment-conscious companies which undertake responsible business. Consumers have become environment conscious. They always want environmental friendly products or services that take care of their hygiene and safety.

TYPOLOGY OF GREEN AUDIT

On the basis of scope, objectives, risk assessment Green Audit may be categorized as :

- Compliance Audit;
- Performance Audit;
- Transactional Audit;
- Product/Activity Audit;
- Issues Audit;
- Risks Audit;
- Energy & Waste Audit;
- Process & Safety Audit;
- Quality Audit;
- EMS Audit; and
- Baseline Audit / Future Scenario Assessment

SCOPE OF THE GREEN AUDIT

- Measuring key environmental parameters
- Analyzing raw and test data
- Reviewing purchase orders and invoices
- Interviewing employees, managers and executives
- Communicating with contractors, vendors, customers and regulators
- Examining policies, internal records, reports relating to the environment
- Comparing audit results with previous audits, as well as to industry standards and best practices.

SOME FOCUS AREAS OF THE GREEN AUDIT ARE

- Saving power,
- Saving Water,
- Greening the workplace
- Driving Green
- Build a Green Community

CONDUCTANCE OF GREEN AUDIT

Although various types of Green Audit appraise different issues, all should have the following stages of activities:

Stage I - Audit Planning / Pre-audit Stage

- Consider terms of engagement
- Understanding of entity and its system
- Decision on the scope and objectives
- Selection of audit criteria
- Selection of methodology
- Selection of team members and audit programme development
- Inform the facility and desktop review

Stage II - Onsite Audit Stage

- Site/Facility inspection
- Interview and documents review
- Close conference

Stage III - Analysis and Reporting Stage

- Analysis and final evaluation of findings
- Preparation of draft report
- Preparation of final Green Audit Report
- Follow-up review

GREEN AUDIT IMPLEMENTATION

The primary stage towards implementation of Green Audit is to educate the people about the same, wherein people should be made aware about the necessity of Green Audit and their responsibility towards the future generation. After generation of awareness among the people the next stage is to try to reduce the wastage as much as possible at each and every stage of the operations: The third and very important stage can be the stage of continuous improvement wherein the organization should continuously try to reduce their wastage by using new and innovative techniques and so improve on their process, which leads to least wastage. This stage improves efficiency and effectiveness of all the resources that ultimately provide better human life along with high productivity. Green Audit works as a tool to safeguard the environment and the society at large. It will not only help the contemporary society but will also keep a check on eradicating the practices having a devastating effect on the overall society in future.

GREEN AUDIT PROGRAMME

Like all audit programmes, Green Audit Programme is also required to be in detail. As it is a multidisciplinary approach, this programme has to be in segments relevant for all the disciplines represented in the TEAM. For the present purpose, TEAM is used as an acronym - T standing for togetherness, E for energizing, A for actuation, and M for measurement and control. In all, efforts are deliberately directed towards making them centripetal to the objectives. For each member

of the team, discrete programmes may be drawn but, after completion of the inquiry, study and analysis of the situation, there may be detailed discussions leading to a consensus. Major issues thrown up by the study should naturally be analyzed so that the emerging consensus is realistic and practicable. The programme does not sacrifice technical sophistication but all terms used by the members belonging to different intellectual disciplines should be explained and adequately supported by the emerging data and information. The recommendations made by the TEAM must be duly supported by an Action Taken Report, details of which would call for a proper assessment of the quality of the implementation

Cost and management accountants (CMA) should invariably be made a member of the TEAM for enhanced effectiveness. To understand the relevance of each factor, CMAs can apply the technique of partial differentiation, along with others, to disaggregate the influence and contribution of each individual factor to the totality so that adequate corrective action can be initiated with respect to each factor as also the total. Application of both deductive and inductive reasoning can bring to the fore numerous issues that have not come to light so far while such reasoning can stall many an unwanted propensity.

QUALIFICATION OF GREEN AUDITOR

Green Audit is not mandatory in India. It is limited to submission of an annual statement (like a voluntary/self declaration statement) to the Central Pollution Control Board (Sen, 2012). As it is a specialized subject, in large project it is carried out by a team of experts drawn from various fields of science led by an auditor. These audits are carried out by trained and registered green auditors in countries like UK, USA and European Union (EU) etc. The Institute of Environment Assessment & Management (TEAM), an international body, provides registration to green auditors. There has been a long debate as to the fact- 'Who can be a green auditor? Study of Deegan, Shelly and Cooper (2003) revealed the following relative market shares of different categories of assurance providers for Green Audit:

Country	Percentage of Companies			No of Reporting Organization Surveying
	Accountants	Environmental Consultants	Others	
Europe (Excluding UK)	59.60	19.20	21.20	52
UK	22.90	54.20	22.90	48
Japan	37.50	6.30	56.30	16
Australia	16.70	40.00	43.30	30
Total	36.30	33.60	30.10	146

LEGAL ASPECTS OF GREEN AUDIT

Though it is at nascent stage, there has been a long list of international treaties, conventions or multilateral agreements on environment considering different themes - atmosphere, biodiversity, chemical and waste, land, oceans and seas etc. Under these ambits the countries have entered into agreements to preserve tints and bits the environment.

Iso 14000 i.e. standard for environment, focus on the process of producing the product rather than the product. Which directly finds how the production process has minimum effect to the environment and how it complies all legal requirements related to environment and also improvement in both above.

In Indian context, we do have huge number of legislations in the interest of environment. In broad categories they are to protect the environment from air pollution, water pollution, pollution from solid waste, to protect the bio-diversity etc. Article 48A of our Constitution (under Directive Principles of States) suggests making endeavor to protect environment. In recent past The National Green. Tribunal Act, 2010, has been framed to expedite the environmental protection and with the objective to dispose off the cases on environment and also to redress the issues of liability and compensations for victims of pollution or any other environmental damages as resolved in United Nations Conference on Environment and Development.

GREEN AUDITS IN INDIA

C&AG have conducted many environmental audits in India which maybe industry specific or not. The Supreme Auditing Authority in India has divided these issues into five categories - Air, water, waste, biodiversity, Environment Management System.

As a whole, considering the gravity of the pollution, C&AG can order and conduct an audit in the interest of environment of any part of India. Some Environmental Audits carried by C&AG are Thermal Power Stations of Bthar State Electricity Board, Transport Department of Mizoram, Thermal Power Stations of Andhra Pradesh and Gujarat etc.

The flagship audits under the water issues were the audit of "Ganga Action Plan", measures to control pollution in Yamuna River in 2004, provision for safe drinking water in Madhya Pradesh in 2004, performance audit of arsenic alleviation programme in West Bengal in 2005, conservation & management of Dal Lake in Jammu & Kashniir in 2006 etc.

CAG, in 2006, conducted audit of 'Conservation & Protection of Tiger in Tiger Reserves in India' ic 28 tiger reserves all across India. On biodiversity issues, it conducted audits of preservation of wild life in Meghalaya in 1996, forest management in Delhi in 2001, functioning of zoos and wildlife sanctuaries iii Rajasthan in 2002 etc.

CAG's Report Nb. 17 (2010-11) indicates that % of the sanctioned projects didn't achieve their 'Greening India' objectives. In biodiversity area, National Biodiversity Authority (NBA) was established by Indian government in 2003. Its efforts were found to be inadequate because it could prepare lists of endangered species only in 7 out of 28 states till that date. Works undertaken under 'Ecocity Programme' of Central Pollution Control Board (CPCB) remained incomplete in all selected 6 cities and INR 1.88 crore was lying unspent with State PCB for over 7 years.

The Institute of Cost Accountants of India (ICAI) has been issuing and publishing research papers and guidelines on Green Audit related issues. In 2008, it issued Management Accounting Guidelines (MAG) - III on Implementing Corporate Environmental Strategies' which guides Green Audit from various perspectives.

ACHIEVING COMPETITIVE ADVANTAGES THROUGH GREEN AUDITING FRAMEWORK

Many people consider Green Auditing exercise "an action without benefit". Incorporating Green Auditing would cost an entity in both time and money - e.g. salaries of the environmental units' experts and staffs, fees of the auditors etc. if approached properly, the entity can recover these costs and achieve direct and indirect cost savings. For example, if Green Audit helps organization to segregate the waste streams into harmful and less harmful then it can save effluent treatment and discharge cost. Organization may also be able to feed some of what was waste back into its operations and save on raw materials cost. Its stringent application reduces penalties, interests, legal costs, compensation charges and environment failure costs etc. It helps to reduce wastage and associated costs, increases product quality etc.

Sen's Theory of Societal, Environmental and Stakeholders of Competitive Advantage (2006) states that a healthy mix of four kinds of factors : (a) Push (license to exist), (b) Pull (motivate to grow), (c) Pressure (legitimacy to grow), and (d) support for sustenance are needed for competitive advantage. Societal and environmental drivers contribute substantially to a firm's performance in a variety of ways. Tangible contributions of Green Auditing include risk reduction and profitability improvements, while intangible contributions lead to brand equity. The environment receives benefits through cleaner process and products, local community is benefited by socio-economic development, employees gain better working conditions and consumers receive quality products with less impact on the environment. All tangible and intangible benefits and cost savings are the keys to achieve competitive advantages. Competitive advantage helps to place the products into the markets, achieve market growth and gain confidence of the customers and socially responsible investors (SRI).

GREEN AUDIT AND SUSTAINABLE DEVELOPMENT

The organizations which are focusing to sustain in this competitive era of cutthroat competition need to focus on the concept of Green Audit because, by emphasizing on Green Audit, organizations can reap unprecedented gains not only in environmental and societal terms but also in financial terms.

Different countries have shifted their focus on sustainable development rather than economic development - so now there is prime focus and urgent need to implement Green Audit so malpractices and negligence of the organizations, which leads to massacres, can be reduced at time and devastating effect on mankind can be reduced.

GREEN AUDIT - CHALLENGES

- There is no standard accounting policy or methodology unlike Financial and Cost Audit
- Collection of data may be cumbersome and expensive
- Awareness by the business groups and public is limited
- It is a long term exercise — hence auditing in short term may not yield desired results
- It is difficult to quantify the entire data in financial terms as most of them are intangible.

FUTURE EXPECTATIONS

Green Audit is undoubtedly a very sensitive and critical area. If business is required with all its skill at planning and innovation, it is surely in the area of environment. It is a fact that costs, lack of legitimacy, poor supportive environment, confidentiality, lack of skills and technical expertise etc. act as barriers to this audit. Governments of different countries have done splendid jobs in Green Audit areas. In spite of lack of regulations and standards, many organizations have been conducting it absolutely on voluntary basis. In present changing scenario it is expected that Green Audit will no longer remain an 'option' but will become as essential and vital as financial audit.

CONCLUSION

Green audits can be highly valuable tool for organizations in a wide range of sectors to improve their environmental and economic performance while reducing regulatory burden, liabilities and operating costs. Organizations who start early in green audits by undertaking pro-active environmental measures often are those who set the regulatory standards against which their competitors are judged.

Ecological imbalance and economic growth are two different aspects. Ensuring reduction in ecological imbalance, without denting economic growth, thereby balancing between ecological imbalance and economic growth is an authentic challenge. The key objective of Green Audit is to ensure equilibrium between economic growth and sustainable use of components of biodiversity.

Only legislation and enforcements can never bring radical change in the system and the environment will not be free from effluents. It only requires awareness among every citizen as well as among the corporate houses. It is not possible to ignore Green Audit.

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