

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE & MANAGEMENT

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ENVIRONMENTAL AUDIT: STEP TOWARDS SUSTAINABLE DEVELOPMENT

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ABSTRACT

Environmental pollution has a great impact on men and society. It adversely affects on the human health or public health, animals and plants. Managing environment is really an issue of life and death. The 'Environmental Audit' is an initial step towards the pursuit of environmental quality management. This environment audit makes the organization self-regulating. Moreover undertaking of 'environmental audit' on regular basis provides a platform for improvement aiming at "zero spills, zero pollution, zero waste and zero accidents". Against this background, different aspects of Environmental Audit framework have been highlighted in this paper.

KEYWORDS

Environmental Accounts, Environmental Audit, Environmental Impact Assessment, Social-Cost Benefit Analysis, Sustainable Development.

BACKDROP

Environment and its management is recognised as the highest priority for its sustainable development. Since the *Rio Summit* in 1992 (Agenda 21), environmental management and allied activities phased into a top priority throughout the earth. Pollution of environment has assumed serious dimensions. The whole world is worried that the existence of mankind itself may be threatened if the timely and corrective measures are not taken at the regional, local, national and international levels. Industry is considered one of the main polluters of environment. Unplanned industrialization and the release of huge amounts of effluents, hazardous wastes and emissions of chemicals by industrial units in environment are the main cause of damage to environment. Any sustainable industrial development aimed at the service of humanity has to be environment friendly and compatible with Eco-system. Corporate enterprises are facing the challenges to determine their true profits which are environmentally sustainable ones. For this Companies need to account for the environment. They should take account of its most significant external environmental impacts and effect, to determine what profit level would be left (if any) if they attempted to leave the planet in the same state at the end of the accounting period as it was in the beginning. Rapid industrialization, inspite of its positive effects on economic development of the world, has very seriously threatened the world's natural environmental balance. There is a growing pressure from Environmentalists, Government, Society, Customers, Employees and Competitors on business firms to be environmentally accountable.

THE ENVIRONMENTAL DEGRADATION – UNIVERSAL PROBLEM

Environment includes entire biological, physical and social milieu in which man and other organisms are placed and no organism however simple or complex can survive on their removal from the environment. In order to make progress, man has produced destructive, hazardous and often irreversible changes in the environment in which he is totally dependent. With a view to improving living and nutritional standards, man has interfered with practically every sphere in natural ecosystem. The man-made pollutants that greatly influence the quality of environment are – metals, petroleum products, volatile industrial chemicals, heat and exhausts generated due to the burning of fossil fuels, radioactive species from reactors and nuclear reactors, organic and domestic wastes – as most of these are discharged untreated into the environment. Pollution is thus a kind of interference to the environmental degradation. The problems of such environmental degradation – air, water, noise pollution, solid wastes, radiation hazards, thermal pollution, are threats to wildlife, depletion and destruction of natural resources, etc. are all environmental crisis and threats affecting the delicate balance of natural ecosystem.

TYPOLOGY OF POLLUTION

The level of pollution varies with the density of population and per capita income and inversely with the extent of recycling, technology and waste treatment. The different types, causes and effects of environmental pollution may be:

- **Air Pollution**
Air pollution is the human introduction into the atmosphere of chemicals, particulates or biological materials that cause harm or discomfort of human beings or other living organisms or damage the environment. Air pollution is caused by burning coal or crude oil like naphtha in power stations, smokes from factories, exhaust fumes from automobiles, solvent losses and agricultural chemicals, etc. Air pollution leads to deaths and respiratory diseases.
- **Water Pollution**
Water pollution is the contamination of water bodies such as lakes, rivers and/or oceans caused by effluents from breweries and tanneries, coal washeries, chemical plants, discharge of coolants from nuclear power plants, pesticides and agricultural chemicals. Water pollution affects public health and safety, causes damage to property and leads to many economic losses.
- **Noise Pollution**
Noise pollution is a type of energy pollution in which distracting, irritating or damaging sounds are freely audible and is caused by noise due to running of heavy machines, big aircrafts, aircraft, drilling machines, etc. Noise pollution may lead to loss of efficiency at work, loss of hearing and causes psychological disorders, even insanity.
- **Smell Pollution**
Discharge of industrial products, nuclear garbage dumps, open sewers, etc. It affects physical wellbeing and even causes psychological disorders.
- **Thermal Pollution**
Large input of heated water from a single plant or a number of plants using the same lake or slow-moving stream can have harmful effects on aquatic life. Thermal pollution is radiation of heat generated by plants in industries. Warmer temperatures lower dissolved oxygen content and cause aquatic organisms to increase their respiration rates consume oxygen faster and increases their susceptibility to disease, parasites, and toxic chemicals. Thermal pollution affects ecological balance and thereby the inhabitants.
- **Visual Pollution**
Effluents from chemical plants and washeries are discharged into the waterways causing reduced visibility. Industrial fumes and dust causing loss of landscape attractiveness and strain to vision of pedestrians and motorists, may cause more road accidents and traffic deaths.
- **Climate Pollution**
Radiation of heat in highly industrial centres is leading to "micro climate zones" causing deforestation, shortening plants growth and affecting surroundings. It affects ecological balance and causes damages to plant and surroundings.

- **Radiation Pollution**
Radioactive fallouts, leakage from nuclear reactors and prolonged exposures to small doses of radiation results in a bio-accumulative process, causes a significant chronic affect by increasing the rate of genetic mutation.
- **Soil/Land Pollution**
Indiscriminate use of fertilizers and pesticides, pollution of soil with man-made chemicals, indiscriminate disposal of solid use etc. are causing soil/land polluted. Due to pollution the quality of soil deteriorates to the extent that they fail to support vegetation. It affects the global climate also.

ACCOUNTING ASPECT OF ENVIRONMENT

Accounting deals with information systems for economic entities. Environmental accounting is the scientific selection, measurement and collection of all environmental and socio-economic activities and conditions in the macro and micro sectors of the economy. Environmental accounting employs 'benefit-cost analysis' to ensure efficient management of limited resources for the well-being of mankind. The recent escalation in concern for environmental issues has increased considerably attention to business social responsibility.

Environmental accounting tracks and manages direct and indirect environmental costs, and improves environmental decision making. Environmental accounting is a broader term which encompasses every aspect of the corporate landscape: legal, financial, technological and scientific. Internal and external forces are constantly at work forcing companies, governmental agencies and the accounting profession to view the issues and derive measures for dealing with environmental costs. Environmental costs and obligations must be reported upon and disclosed. Management decision making must consider them.

Environmental Accounting Comprises of

- Accounting aspect of Environment of a concern,
- Reporting aspect of Environment of a concern,
- Auditing aspect of Environment of a concern and
- Environmental Management Accounting of a concern.

The first Environmental Accounts (EA) was constructed by Norway in the 1970s and was only slowly adopted by other countries. In the early 1990s, the World Bank conducted a review of environmental accounting (EA), providing a compendium of which countries had compiled environmental accounts, the methods that had been used to construct environmental accounting, and the extent of coverage (Peskin and Lutz, 1990). Since that time, environmental accounting has increasingly been recognized as a useful economic tool, resulting in a great deal of activity in both developed and developing countries. Over the last decade, conceptual and technical aspects of construction of environmental accounting have received a great deal of attention. Environmental accounting tracks and manages direct and indirect environmental costs, and improves environmental decision making.

ENVIRONMENTAL AUDIT – CONCEPTUAL FRAMEWORK

The Concept of Environmental Audit, which has its origin in the United States, has experienced significant growth and evolution over the last four decade throughout the world with a view to redirect attention of corporate entities and business organizations to the matter of improving the management of environmental, health and safety risks. In absence of accepted audit practices in the environment audit field, many companies have approached environmental auditing from different directions and perspectives. However, Environmental Auditing has helped companies to assess their current performance, correct identified deficiencies and reduce risk (Centre For Environmental Assurance 1992) to the health and improving safety. The need for this assurance emanates from a number of external and internal factors. CIMA defines environment audit "as a systematic, documented, periodic and objective evaluation of how well an organisation, its management and equipment are performing, with the aim of helping to safeguard the environment by: (i) facilitating management control of environment practices; and (ii) assessing compliance with company policies and Government regulations."

Environmental audit is, nowadays, absolutely necessary for the survival of the industry and the economy to serve the best interest of the society at large. It is a systematic, documented, periodic and objective review by regulated entities, of facility operations and practice related to meeting environmental requirements.

The objectives of an environmental audit are

- To ensure cost effectiveness compliance with the statutes and company policies
- Cost saving from improved practices
- To prepare data-base relating to pollution potential of all facilities
- To make a social cost-benefit analysis
- To develop social reputation, confidence of customers
- To develop overall awareness, identifying problems and areas of risk
- To encourage the use of low waste technologies and prudent use of resources and to identify potential hazards and risks.

Environmental audit has the following aspects –

- Technological and operational aspect involving audit of the technology of environment management as well as the operation of environment management system.
- Environment valuation and environment costing without which environment management plans and policy implementation becomes useless and non-viable. Thus, in the absence of such environment valuation and environment costing, the cost of environment damage cannot be assessed for determination of compensation. In brief, we can point out that no effective Environment Regulatory policies and measures can be formulated and implemented without proper environment valuation/costing.

Environmental audit may cover, broadly:

- Compliance Audit
- Environmental Issues – Management Audit
- Environment Management System Audit
- Audit Review
- Environmental Audit Standard framed by individual company according to their requirements.

Environmental auditing is a management tool comprising a systematic, documented, periodic and objective evaluation of how well, environmentally, the organisation, management and equipment, are performing, with the aim of helping to safeguard the environment by:

- Facilitating the management control of environmental practise and
- Assessing compliance with company policies which would include meeting regulatory requirements.

GLOBAL REPORTING INITIATIVE

Recently, the Institute of Chartered Accountants of India (ICAI), the statutory body that sets accounting and auditing standards for the corporate sector, is working on a new set of rules on GSR, making it a must for companies to report on social, environmental and economic initiatives. Broadly, the concept is to ensure that today's development and growth does not come at the cost of the future generation. Inspired by Global Reporting Initiative (GRI), a collaborating centre of the United Nations Environment Programme, ICAI has formed a committee to develop a framework for standardising the disclosures related to sustainability reporting, which is likely to come out with its suggestions.

GRI has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The framework sets out principles and indicators that organisations can use to measure and report their economic, environmental, and social performance. The cornerstone of the framework is the Sustainability Reporting Guidelines. The GRI framework understands that the same principles

cannot be applied across various industries and nations and thus has worked out sector supplements (unique indicators for industry sectors) and protocols (detailed reporting guidance) and national annexes (unique country level information). According to GRI, more than 1500 companies, including many of the world's leading brands, have given consent to voluntary adoption of its Sustainability Reporting Guidelines worldwide. The Indian economy is growing rapidly and in the era of globalization, adoption of sustainability reporting is inevitable in order to access global markets and attract foreign capital.

ENVIRONMENTAL REPORTING FOR SUSTAINABLE DEVELOPMENT

Environmental reporting calls for preparation of Environmental Reports that would show the resources used by the company and pollution and other effects of the company on the environment. The environmental resources used by a business concern can be categorized as water, energy, raw materials and hazardous chemicals. The quantities of these resources used should be disclosed. The second part of the report would measure a company's pollution of the environment in the form of effect on air, water and industrial and hazardous waste, noise and land. The effects of the output cannot be quantified and measured in monetary terms. The disclosures by entities would normally refer to positive impact of their activities on the environment. It is argued that requiring companies to report publicly both the positive and negative impact of their operations of the environment and wider community will argue them to improve their social responsibilities.

Gray (1990) in his study has suggested a number of reports to be prepared within environmental accounting: a compliance report or audit; an ethical audit; a waste audit; an energy audit; an emerging issues audit; environmental impact assessment/appraisal/analysis; a general environmental audit; and a financial environmental audit. The purposes of each are evident from the titles. The compliance report or audit would make sure that the organisation complies with legal requirements in relation to the environment. The ethical audit refers to above-the-law requirements which management may require. Setting such requirements would necessitate an open discussion about a large range of issues within the organization. The waste audit should identify waste, the costs associated with the treatment and disposal of waste, and that which may be recycled. A similar modification to the accounting and management information system would allow energy flows to be audited. The emerging issues audit would act as a reminder that the problems of the environment are ongoing, and that initiatives must be maintained.

'Sustainable Development' was brought in use by the World Commission on Environment and Development (The Brundtland Commission) in 1987. Nature has provided resources to be used, not only by the present generation but also for generations to come in the future. Moreover, knowledge about environmental conditions (e.g. how to define soil depletion, loss of natural habitats, air pollution, etc.) is necessary. If these are used without care, they will fully deplete, and nothing would be left for the future generations. The future generations would like to live in at least in the way the present one is living, if not better. Sustainable development requires meeting the needs of the present generation without compromising the needs of the future generations, i.e. the future generations are not deprived of the resources provided by nature.

It does not mean that we should not have economic growth or progress. A trade-off has to be struck between economic growth and sustainability. The economic system should be so designed as to sustain progress. Sustainable development does not prohibit the use of natural resources but restricts their use in such a way that enough or as much as possible is left for the future generations. It can be achieved by increasing efficiency or cutting down on waste or by adopting other methods such as imposing a tax on environmental resource use, as well as using non-conventional source of energy. Therefore attention has to be drawn to recognize the value of environmental resources and services, and changes therein, and to find a method to improve the national accounts in such a way that they not only measure the present income but also give due regard to the needs of the future generations.

LEGAL FRAMEWORK IN INDIAN CONTEXT

It is unfortunate that there is a lack of awareness about pollution and environmental hazards among the general public in our country although there are several enactments in our country relating to environment protection, some of which are as follows:

- Constitutional Provisions Article 51A
- The Factories Act, 1958
- Water (Prevention and Control of Pollution) Act, 1974
- Water (Prevention and Control of Pollution) Cess Act, 1981
- Forest Conservation Act, 1980
- Air (Prevention and Control of Pollution) Act, 1981
- Environment Protection Act, 1986
- Hazardous Waste (Management and Handling) Rules, 1989
- Public Liability Insurance Act, 1991
- Motor Vehicles Act, 1991
- Indian Fisheries Act, 1987
- Merchant of Shipping Act, 1958
- Indian Ports Act
- Indian Penal Code

In India there is no specific provisions in any environment related Acts and Rules thereof for statutory Environment Audit by External Auditors. However, there exists Environmental Impact Assessments (EIA) and Annual Appraisal of environment related performances documented in the form of Environment Statements which require exercise in the nature of audit. As a matter of policy followed by the Pollution Control Board, EIA statements are submitted after a kind of assessment/appraisal by external examiners i.e. Environmental Consultants with the State Pollution Control Boards. Rule 14 of the Environment (Protection) Act, 1986 requires an industry to submit annual Environmental Statement by 30th September each year from 1993 onwards to the relevant State Pollution Control Board. Rule 14 is applicable to any industry which possesses or requires consent/authorization under Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981, and/or Hazardous Waste (Management and Handling) Rules, 1989.

ENVIRONMENTAL IMPACT ASSESSMENT

Environmental Impact Assessment (EIA) is now mandatory for most types of developmental projects. The main purpose of the Environmental Impact Assessment may be stated to be an attempt to internalize environmental costs of a project so that development duly considers environmental preservation besides economic and other factors. As a decision making tool, EIA attempts to capture and superimpose the possible environmental impacts of a developmental project on the present environmental setting of a proposed project location. Quantitative estimation of environmental parameters is often not possible and decisions may have to depend upon subjective judgments. Various methods have been proposed to quantify environmental costs and compute cost benefit ratios of developmental projects. Valuation of environmental liabilities is rapidly becoming important as environmental concerns are beginning to influence project financing, stock markets, market acceptability of product etc.

SUGGESTED FRAMEWORK

Developing the culture of environmental accountability within the organization, from top management to supervisory and manual staff is very essential for progressing from legal compliances to sustainable development stage. This can be effectively achieved with the help of measurement systems of the organization. Therefore, the measurement system must include explicit criteria for environmental accountability. For that *the following Management Control System is suggested:*

- ✓ Framing of environmental policy

- ✓ Special drive for increasing sensitivity towards environmental accountability
- ✓ Identification of Environmental accountability as one of the Key Result Areas (KRA)
- ✓ Deciding the environmental objectives – strategic and operational
- ✓ Identifying responsibility for different objectives with managers
- ✓ Development of measures for strategic and operational objectives
- ✓ Allocation of resources – long term budget, capital budget and revenue budget

Environmental problems should be identified quickly and accordingly remedial steps should also be taken. A recommended environmental process consist of

- Identification and Appraisal,
- Measurement,
- Disclosure and Recognition, and
- Remediation and Control.

Environmental Costs and obligations must be reported upon and disclosed. Management decision making must consider them. Environmental Costs should be compared to budgeted amounts; variances may be computed and tracked. Environmental Cost information is useful in

- Product and Service Mix Decisions,
- Pricing Policies,
- Selecting Production Inputs,
- Evaluating Pollution Prevention Programmes, and
- Appraising Waste Management Approaches.

IMPROVEMENT IN ENVIRONMENTAL QUALITY

Environmental quality may be improved by the adoption of steps like

- ✓ Voluntary efforts made by business houses to keep the physical environments clean by taking certain steps like uses of low pollution fuel, collective action by industrial units for waste treatment, etc.
- ✓ Legislative measures may be taken by Government to tackle the pollution problem.
- ✓ Waste/effluents disposal facilities may be provided by the Government.
- ✓ Subsidies may be given to industries to construct facilities for disposal of industrial waste.
- ✓ Tax relief may be provided on the expenditure on anti-pollution measures.

The costs of environmental improvement may be economic costs as well as social costs. Cost-benefit analysis needs to be applied to environmental improvement.

CONCLUDING REMARKS

Environmental pollution makes the people physically weak and mentally morbid. Men and animals suffer from different types of incurable diseases and the public health is detonated to a great extent. The growth of men and plants are hampered. The ecological balance is partially lost and the social environment is also lost. The environmental pollution extends a network of disasters and distress throughout the world. If this situation exists for a long period of time, the days are not far when the human civilization, men animals and plants will be wiped away from the universe. Environmental accounting and auditing is important because it could improve the value of economics as a decision making tool, particularly in determining national policy. Our motto should be “*Save the Environment, Save the Planet*”, we need to save our environment. Only then, environment can save us!

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