Guide on Environmental Audit

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Foreword

The global environment scenario is very grim because of increasing water and atmospheric pollution, over-exploitation of land, cutting down of forests, increase in untreated waste, threats to biodiversity and marine areas. The multiplicity of agencies involved, pressures of various interest groups and complexity of the tasks to be performed in environmental protection poses a great challenge in ensuring adequate protection of the environment. Environmental audit 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 specified audit criteria.

I congratulate CA. Rajkumar S. Adukia, Chairman, Internal Audit Standards Board and other members of the Board for bringing out this "*Guide on Environmental Audit*" on a timely basis. This comprehensive publication would surely help the members to understand the various compliance and regulatory requirements related to environment audit and obtain better skills and knowledge in this emerging field.

I am sure that this Guide would help the members to play a significant role in assisting organizations, to ensure application of the best business practices, resulting in decrease of potential environmental liabilities and mitigation of environmental risks.

January 2, 2012
New Delhi

CA. G. Ramaswamy
President, ICAI

Preface

Environmental issues are increasingly impacting the bottom line and future prospects of companies in many industries. They can present both opportunities and risk and can have important implications for strategy, competitiveness, risk management, stakeholder relations and business resilience. Understanding how environmental issues impact stakeholders and understanding stakeholder's expectations about environmental issues can contribute valuable insights for the identification of strategic opportunities and corporate risks. Positive stakeholder relations build trust, increasingly essential for competitiveness and resilience.

Environmental auditing seems to date back, formally, to around the promulgation of the U.S. National Environmental Protection Act (NERA) in 1969. Environmental auditing is a process whereby an organisation's environmental performance is tested against it's environmental policies and objectives. The aim is to assess how well environmental organisation, management and equipment are performing with the aim of contributing to safeguard the environment by facilitating management control of environmental practices and assessing compliance with organisational policies, which would include meeting regulatory requirement.

Recognising the growing importance of the subject of environmental auditing as the survival and growth mantra for business these days, the Internal Audit Standards Board has issued this *Guide on Environmental Audit.* The main objective of this Guide is to provide a general overview of the concept of environmental auditing as an emerging area. The Guide is divided into eight chapters. Chapter I is introductory in nature and Chapter II discusses some key concepts related to this area. Chapter III explains the concepts of environmental auditing, it's features, objectives and benefits. Chapter IV deals with evolution of the concept of environmental auditing over the past few decades. This chapter also explains some applicable standards in this area. Chapter V elaborates the process of environmental auditing and lists out the tools and techniques used. It also explains the manner of writing an environmental audit report. Chapter VI deals with various types of environmental audit and some emerging trends in the area. Chapter VII analyzes emerging opportunities for the members in the area of

environmental auditing and Chapter VIII includes summary and conclusion. The guide also includes checklist for environmental audit, illustrative environmental audit report and glossary of terms thereby providing valuable guidance to the readers for developing understanding of the subject matter.

At this juncture, I wish to express my sincere gratitude to Dr. (Ms.) Shuchi Pahuja for sparing time out of her professional and personal commitments and sharing her wealth of experience in the area of environmental auditing in the form of this Guide.

I wish to place on record my thanks for CA. G. Ramaswamy, President and CA. Jaydeep N. Shah, Vice President, ICAI, for their continuous support and encouragement in the activities of the Internal Audit Standards Board. I also wish to express my sincere gratitude to all my colleagues from the Council at the Internal Audit Standards Board, *viz*., CA. P. Rajendra Kumar, Vice Chairman, CA. Amarjit Chopra, CA. Shiwaji B. Zaware, CA. Ravi Holani, CA. Anuj Goyal, CA. Nilesh Vikamsey, CA. Vijay K. Garg, CA. Atul C. Bheda, CA. J. Venkateswarlu, CA. Abhijit Bandyopadhyay, Shri Prithvi Haldea, Smt. Usha Narayanan, Smt. Usha Sankar, Shri Manoj Kumar and Shri Sidharth Birla for their vision and support. I also wish to place on record my gratitude for the co-opted members on the Board, *viz*., CA. Madhu Sudan Goyal, CA. Rohit Choksi, CA. Ketan Vikamsey and CA. Pankaj Kumar Adukia as also special invitees on the Board, *viz*., CA. Anil Kumar Jain, CA. Ajay Minocha, CA. Sumit Behl and CA. R. Subramaniam for their invaluable guidance as also their dedication and support to the various initiatives of the Board. I also wish to express my thanks to CA. Jyoti Singh, Secretary, Internal Audit Standards Board and her team of officers for giving final shape to this publication.

I am hopeful that this Guide would play an important role in providing the members an initial start in acquiring necessary knowledge in this emerging area, so that they are able to contribute in conservation of environment.

Jannuary 2, 2012
Mumbai

CA. Rajkumar S. Adukia
Chairman
Internal Audit Standards Board

Abbreviations

ASOSAI	Association of Supreme Audit Institutions
CA	Chartered Accountants
CES	Carbon (Emission and Sequestration) Accounting
CICA	Canadian Institute of Chartered Accountants
CPCB	Central Pollution Control Board
CSA	Canadian Standards Association
EIA	Environmental Impact Assessment
EMAS	European Eco-management and Audit Scheme
EMS	Environmental Management System
EPA	Environmental Protection Agency, USA
EU	European Union
FEE	Federation des Experts Comptables Europeens (Europeans Federation of Accountants)
GCC	Global Climate Change
GHG	Greenhouse Gases
GRI	Global Reporting Initiative
ICC	International Chamber of Commerce
IEA	International Environmental Agreements
IEM	Integrated Environmental Management
IFAC	International Federation of Accountants
INTOSAI	International Organization of Supreme Audit Institutions
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standards Organization
NEPA	US National Environmental Policy Act
SAI	Supreme Audit Institutions
SEAs	Strategic Environmental Assessments
SEC	Securities and Exchange Commission, USA

SEESR	Social, Ethical, Environmental and Sustainability Reporting
SHEQ	Safety, Health, Environmental and Quality
SPCB	State Pollution Control Board
UNCED	United Nations Conference on Environment and Development (known as Earth Summit)
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Program
UN ISAR	United Nations Inter Governmental Working Group of Experts on International Standards on Accounting and Reporting
WCED	World Commission on Environment and Development
WGEA	Working Group on Environmental Audit

Glossary

Compliance Monitoring	A continuous process to ensure that the conditions in the environmental law, certificates or permits are adhered to.
Corrective Action	Action to eliminate the cause of a detected non-compliance.
Corrective Action Plan	An action plan developed by auditee or someone on his behalf to resolve the non-conformity item.
Environmental Audit	An audit which aims at verification and validation to ensure that various environmental laws are complied with and adequate care has been taken towards environmental protection and preservation.
Environmental Consultant	An individual or firm who act in an independent manner to provide information for decision-making.
Environmental Due Diligence Audit	An audit which is normally conducted before acquisition or sale of a business or property to check the extent to which the business may have known or unknown (or visible or hidden) environmental liabilities.
Environmental Risk Assessment	An assessment of the environmental risks arising from a facility in areas such as, air, water, soil and groundwater pollution.
Environment	Environment includes water, air and land and the inter-relationship which exists among and between water, air and land, human beings, other living creatures, plants, micro organism and property.
Environment Assessment	The generic term used for all forms of assessment of projects, plans, programmes or policies. This includes methods such as, environmental impact assessment, sustainability assessment, strategic environment assessment, etc.

Environmental Audit Report	A summary report prepared after an environmental audit that describes the attributes of the audit and audit findings and conclusions.
Environmental Compliance Audit	An audit conducted mainly to ensure compliance with environmental laws, standards, industry guidelines and company's policies. Environmental performance audit- An audit conducted to verify environmental activities and performance of the auditee.
Environmental Impact	A positive or negative condition that occurs to environment as a result of the activity of a project, facility or entity.
Environmental Impact Assessment	A process which is used to identify, predict or assess the potential environmental impact of a proposed project on the environment. It is compulsory requirement in many countries.
Environmental Management Audit	An audit which explores the extent, nature and format of environmental management systems which are in place. It is normally carried out to evaluate operations which may be required considering certification for formal EMS systems such as, ISO 14000 or EMAS.
Environmental Management System (EMS) Audit	An audit, where an established EMS is in place, to be carried out to test effectiveness and appropriateness of the EMS against the context of current operations and activities or to comply with EMS audit requirement of ISO 14001 or EMAS.
Impact	The positive or negative effects on human well-being and/ or on the environment.
Integrated Environmental Management (IEM)	A philosophy which prescribes a code of practice for ensuring that environmental consideration are fully integrated into all stages of the development and decision-making process.
Lead Auditor	An auditor who is appointed to undertake the environmental audit and undersign the audit report.

Mitigate	Implementation of measures to reduce adverse impacts on environment.
Permit Audit	An audit carried out, usually as a formal permit condition, to externally check the compliance of an organization to the terms and requirements of a permit or licence. Proponent- Any individual, authority, industry or association proposing an activity, project or programme.
Pollution Prevention	Use of processes, practices, techniques, materials, products, services or energy to avoid, reduce or control (separately or in combination) the creation, emission or discharge of any type of pollutant or waste, in order to reduce adverse environmental impacts (as defined in ISO 14001:2004).
Scoping	The process of determining key issues in an environmental assessment. The main purpose is to ensure that only significant issues are examined and at the same time no important issue is left.
Safety, Health Environmental & Quality (SHEQ) Management	A safety, health, environment and quality audit carried out by organizations who wish to reduce the cost and inconvenience of having a number of separate audits and, instead, combine these audits into one exercise.
Stakeholders	A sub-group of public whose interests may be positively or negatively affected by a proposal or activity and/ or who are concerned with a proposal or activity or its consequences. In environmental issues even public at large is a major stakeholder.
Surveillance Audit	An audit undertaken to verify that an organization with an existing certification is still meeting the minimum requirements of certification.

Contents

Executive Summary

1. During past few decades, adverse environmental effect of economic development has become a matter of great public concern all over the world. It has been increasingly realized that industrial and development activities are a key contributor to the escalating environmental degradation of the earth, through intensive use of natural resources and generation of environmental pollutants and waste that overwhelm the natural environment's capacity to recover. Industry and developers cannot remain silent spectators to these devastating impacts on the environment and resulting global climate change. The time has arrived that they must take all the steps to protect the environment and to minimize the adverse environmental impact to this planet, in a sustainable manner for the sake of the future generation.

2. The recognition regulators and public have given to the importance of environmental issues and sustainability challenge in past two decades is beginning to put lot of pressure on industry and business. Various laws have been enacted at national and international levels addressing issues like, pollution, conservation of resources, global warming and climate change. There has also been significant increase in public concern on the issue. Ever increasing ethical consumers, ethical investors (mainly institutional investors), concerns by media, NGOs and awareness among stakeholders about environmental risk and its impact on financial results of the concerns have compelled the companies to redefine their products, processes and markets to make them more environmental friendly and less resource consuming. More and more businesses are becoming conscious of their carbon footprint and how their actions impact the environment. With this legislative and social trend, assessment of environmental performance and environmental impacts of a business has become important to managers not only for reasons of social concern but because they represent very real liabilities faced by organisations. In fact, environmental issues have become so central to organizational management that any organisation ignoring environmental aspect in its functioning would indirectly endanger its own existence.

3. Since companies have started taking green initiatives to reduce their carbon footprint and to conserve the resources, it has become necessary that some action should be taken to evaluate green performance of the company. Environmental audit, popularly called green audit, is a step in this direction. Simply speaking, environmental audit refers to verification of environmental measures taken by an organization. It is a branch of social

audit. According to US Environmental Protection Agency (EPA), "Environmental audit is a systematic, documented, periodic and objective review by a regulated entity of facility, operations and practices related to meeting environmental requirements". Environmental audit aims at verification and validation to ensure that various environmental laws are duly complied with and adequate care has been taken towards environmental protection and preservation. It is a wide term which includes in it mainly three areas – Environmental compliance audit, Environmental performance audit, and Environmental financial audit. While compliance audit seeks to ensure compliance with relevant environmental laws, standards, industry guidelines and company policies; focus of environmental performance audit is on verification of environmental performance of the concern to ensure application of the best business practices to decrease potential environmental liabilities and to mitigate environmental risks. In the environmental financial audit, the auditor verifies accuracy and authenticity of all significant environmental costs, benefits, assets and liabilities reported by the concern.

4. These days, environmental audit has become a valuable tool in the management and monitoring of environmental and sustainable development programs. In fact, environmental audit acts both as the first essential step towards environmental sensitivity and as a regular and essential part of environmental management system. The results of the environmental audit exercises provide important information to various concerned internal and external stakeholders. Conducting an environmental audit is no longer optional but a sound precaution and a proactive measure in today's highly regulated environment.

5. Accounting profession is considered to be low environment impact sector and therefore, accountants and auditors were earlier not associated with the conservation of environment movement. However, with environmental protection assuming increased importance in the world, the accounting profession all over the world has shown positive response to the environmental issues. It has been felt that professional accountants can play an important role in helping an organization to respond to environmental issues. It would help them also in developing their role beyond the traditional core activities related to financial accounting and auditing.

6. Environmental audit as an emerging area in auditing is of substantial interest to the accounting profession in India. This "Guide on Environmental Audit" aims at providing a useful understanding of the concept of environmental audit to the professional accountants in India. The Guide would give general information on processes, tools and techniques of

environmental audit. It contains eight chapters namely, Introduction; Key Concepts; Environmental Audit – concept, features, objects and benefits; Evolution of Environmental audit and some environmental audit standards; Process of environmental audit; Types of environmental audit; Emerging opportunities for professional accountants in the area of environmental audit; and finally, Summary and conclusion. It is expected that the guide would help auditors in planning and conducting environmental audits in a more structured and systematic manner. They can apply the general guidance provided in the manual in audit of different environment related issues with suitable customization.

Chapter 1
Introduction

1.1 In the past few decades, environmental crisis has become a global issue. People have become increasingly concerned about the effects of global warming and resulting Global Climate Change (GCC). Increase in water, air and other forms of atmospheric pollutions, decrease in size of forests, over exploitation of land, dumping of waste and increase in emission of GHGs have contributed to the threats faced by biodiversity and ecology of the earth. It has been felt that this degradation in environment is mainly the result of relentless march towards economic and social development without environmental considerations which encouraged urbanization, industrialization, over-utilization of natural resources, deforestation, pollution, etc.

1.2 To control this situation, the Governments of many countries are promoting more and more regulations to protect the environment and the community, in general. There are several environmental laws at national and international levels to address major environmental issues such as, water scarcity and quality degradation, soil degradation, accumulation of toxic wastes, forest cover depletion, pollution from industry and urban livelihoods, climate change, and global warming. Violation of these statutes can result in significant fines, remediation costs and even closure of business. It is because of stringent environmental laws, in all the major business decisions (like, financing, capital budgeting, working capital management, cost controls, project planning and control, mergers or corporate restructuring) that environment has become one of the critical factor. With this legislative trend, assessment of environmental performance and environmental impacts of a business has become important to managers not only for reasons of social concern but because they represent very real liabilities faced by organisations.

1.3 There has also been a significant growth of public concern regarding environmental issues over the past two decades. Ethical consumers, world over, are giving preference to green products. They want a product that is manufactured using the fewest resources, contains no harmful toxic chemicals and which can be disposed off in an eco-friendly manner. Consumers are even ready to pay more for such green products. Among the industrial customers, many big companies are demanding detailed environmental metrics such as, carbon-foot print data from suppliers. They

seek green supplier practices like, reduced packaging or redesigning of distribution routes to cut fossil fuel and resource use. In the same way, there is growing concern about environmental issues among other stakeholders like, investors (particularly institutional investors), creditors, financial community (banks, insurance companies, etc.), NGOs and society at large.

1.4 There are pressures of stringent environmental laws, rising resource prices, reduction in availability of natural resources and growing awareness among various concerned stakeholders about environmental issues which have compelled companies to redefine their products, processes and markets to make them more environmental friendly and less resource consuming. More and more businesses are becoming conscious of their carbon footprint and how their actions impact the environment. It appears that green business is the only survival and growth mantra for business these days.

1.5 Since companies have started taking green initiatives to reduce their carbon footprint and to conserve the resources, it has become necessary that some action should be taken to evaluate green performance of the company. Environmental audit, popularly called green audit, is a step in this direction. Simply speaking, environmental audit refers to verification of environmental measures taken by an organization. Environmental audits are undertaken mainly to ensure compliance with regulatory requirements and corporate guidelines. They also seek to ensure application of the best business practices to decrease potential environmental liabilities and to mitigate environmental risks.

1.6 The main objective of this Guide is to provide a general overview of the concept of environmental audit as an emerging area in auditing. The Guide is divided into eight chapters including the present one which is introductory in nature. Before going into details of environmental audit, Chapter II introduces some key concepts used in the area. Chapter III explains the concept of Environmental audit, its features, objects and benefits. Chapter IV deals with evolution of the concept of environmental audit over the past few decades. This Chapter also explains some applicable standards in this area. Chapter V elaborates the process of environmental audit and lists out some tools and techniques used in environmental auditing. The Chapter also explains how to write an environmental audit report. Chapter VI deals with various types of environmental audit and some emerging trends in the area. Chapter VII analyzes emerging opportunities for professional accountants in the area of environmental auditing. Finally, Chapter VIII gives summary and concludes the discussion.

Chapter 2
Key Concepts

2.1 Before going into details of environmental audit, it is necessary to have knowledge of some key concepts relating to environment, climate change and environmental performance. This chapter presents meaning of some key concepts used in relation to environmental audit.

Environment

2.2 The term environment refers to all the conditions that surround us. It includes "The physical surroundings, conditions, circumstances etc. in which a person lives... the totality of the physical conditions on the earth or part of it." In the context of business organizations, environment can be defined as all the conditions that surround a business concern. These conditions include external as well as internal environment of the organization. According to Environment (Protection) Act, 1986, "Environment includes water, air and land and the inter-relationship which exists among and between water, air and land, human beings, other living creatures, plants, micro organism and property." This definition covers natural physical environment only. This Guide also mainly focuses on natural physical environment and, therefore, ignores non-physical, general, industrial and internal environment. Environment has been taken as natural physical surroundings and includes air, water, land, flora, fauna and non-renewable resources such as, fossil fuels and minerals.

Environmental Degradation

2.3 The relentless march towards development, industrialization and increasing urbanization has led to rapid degradation of the environment. Environmental degradation occurs when nature's resources such as, trees, habitat, land, water and air are consumed faster than the rate at which nature can replenish them; when pollution results in irreparable damage to the environment or when human beings destroy or damage eco-systems in the process of development. Some of the causes of such degradation include overpopulation, urbanization, industrial pollution, waste dumping, intensive farming, over-fishing, industrialization, introduction of invasive species, lack of environmental regulations, etc.

Global Warming

2.4 Global warming is the increase of earth's average surface temperature due to the effect of Greenhouse Gases (GHGs) such as, carbon dioxide released from burning of fossil fuels, industrial activities and human uses which trap heat that would otherwise escape from earth. This is a type of Greenhouse effect. The effects of such warming may range from mild to dire, i.e., from moderate changes in regional climates and length of seasons to catastrophic global ecological changes like, extreme weather conditions, damage of crops, cyclones and storms, destabilization of massive ice sheets in Polar Regions, rise of sea levels, sub-merging of coastal cities, widespread vanishing of animal species, dislocation of people and resulting effects. Global Warming is not just an environmental or health concern- it is a matter of survival on the earth.

Greenhouse Gases (GHGs)

2.5 Greenhouse gases are gases that trap heat in the earth's atmosphere. The main greenhouse gases defined within the context of Kyoto Protocol include: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and industrial gases such as, hydro fluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). Though GHG covers six gases, CO_2 is a major component accounting for around 55 percent of it (about 85 percent in US). That's why, GHG accounting is mostly referred to as carbon accounting.

Global Climate Change

2.6 According to Integrated Panel on Climate Change (IPCC), Climate change refers to a change that can be identified by changes in the state of the climate that persist for an extended period, usually decades or longer. Such changes can be there due to natural variability or as a result of human activity. As the concentration of GHGs grows, more heat is trapped in the atmosphere and less is escaped back into space. This increase in trapped heat alters the weather patterns and changes the climatic conditions on the earth known as Global Climate Change (GCC).

Sustainability

2.7 The concept of sustainable development requires every organization to think in time dimension longer than a generation and place, and emphasizes on both rights and responsibilities. The term sustainability was popularised by the Brundtland Commission's 1987 report "Our Common Future". The aim

of sustainability is to have "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Thus, sustainability requires a delicate balance between people, planet and profit. Many big companies all over the world are embracing the concept of 'triple bottom line' which is equal weighing of three pillars of corporate sustainability namely, social, environmental and economic factors.

Environmental Management System (EMS)

2.8 Industry and business is now encountered with an increasing number of environmental laws and regulations, pressures from stakeholders and concern of management regarding environmental performance. In an effort to meet environmental challenges, business organizations have been developing management systems that are designed to achieve organization's environmental goals and objectives. These systems are known as environmental management systems (EMSs). An EMS may be considered as a part of the overall management system which covers all aspects of the organization relating to environment and is the means by which the separate elements of environmental response are systematically harmonized and integrated with the other management systems (including accounting systems) of the organization.

2.9 ISO 14001 specifically governs EMS and provides necessary input for any organisation to develop and implement a cost-effective system of environmental management. According to ISO 14001, "EMS is that part of the overall management system which includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy." An efficient system of environmental management helps management in complying with environmental laws, acknowledging environmental risks as well as controlling them and reducing adverse impact of its activities on the environment.

Environmental Accounting

2.10 The term environmental accounting has many meanings and uses. It can support national income accounting, financial accounting or internal business management accounting. Environmental Protection Agency (EPA) of USA has explained environmental accounting at following three levels:

(i) Environmental accounting in the context of national income accounting refers to natural resource accounting, which can entail statistics about a nation or region's consumption, extent, quality and value of natural resources both renewable and non-renewable.

(ii) Environmental accounting in the context of financial accounting usually refers to the preparation of the financial environmental reports for external audiences using GAAP. It includes estimation and public reporting of environmental liabilities and financially material environmental costs.

(iii) Environmental accounting as an aspect of management accounting serves business managers in making capital investment decision, costing determinations, process/ product design decisions, performance evaluations, and a host of other forward looking business decisions. Thus, environmental accounting at this level refers to the use of data about environmental costs and performance in business decisions and operations.

Exhibit 1 shows environmental accounting at these three levels.

Exhibit 1 : Types of Environmental Accounting*

S.No.	Type of Environmental Accounting	Focus	Audience
(i)	National Income Accounting	Nation	External
(ii)	Financial Accounting	Firm	External
(iii)	Managerial or Management Accounting	Firm, Division, Faculty, Products, Lines, or System	Internal

Environmental Reporting

2.11 Due to growing social and legal pressures and increasing judicial intervention, there has been a growing demand for disclosure of environmental policies, practices and performance of a company to the interested stakeholders in or outside the concern. "Environmental reporting is the term commonly used to describe the disclosure by an entity of environmentally related data, verified (audited) or not, regarding environmental risks, environmental impacts, policies, strategies, targets, costs, liabilities or environmental performance to those who have interest in such information as an aid to enabling/ enriching their relationship with the reporting entity, via either the annual report and accounts package; a stand-alone corporate environmental report (CER); a site-centered environmental statement, or some other medium (e.g., staff newsletter, video, CD Rom,

* EPA, (1995a), 'An introduction to environmental accounting as a business management tool: Key concepts and terms', US: EPA primer, Washington DC, p.4.

internet site)" (United Nations, 1997). These days, environmental reporting is described either as a branch of the corporate governance tree, or as one aspect of the so-called 'triple bottom line' – whereby data on financial results, environmental performance and social impact are brought together in what might be termed as a sustainability report.

Social and Environmental Audit

2.12 Social audit is verification, validation, measurement, evaluation and reporting of the organization's performance in fulfillment of its social responsibilities. A branch of it is environmental audit. Environmental audit aims at verification and validation to ensure that various environmental laws are complied with and adequate care has been taken towards environmental protection and preservation. According to UNEP, 1990, "Environmental audit can be defined as a management tool comprising systematic, documented and periodic evaluation of how well environmental organization management and equipment are performing with an aim of helping to regularize the environment."

The term environmental audit and its features have been discussed in detail in the next Chapter.

Chapter 3
Environmental Audit

3.1 This chapter presents the concept of environmental audit and highlights its important features. The objectives and benefits of conducting environmental audits have also been explained in this chapter.

Environmental Audit — Concept and Features

3.2 The term environmental audit means different things to different people. Terms such as environmental assessment, survey and review are used to describe the same type of activity. Furthermore, some organizations consider that an "environmental audit" addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environmental matters. Basically, environmental audit is an independent evaluation of policy and principles, systems, procedures, practices and performance, and other elements of a business relating to environment.

3.3 Some important definitions of environmental audit are as follows:

(i) According to US Environmental Protection Agency (EPA), "Environmental audit is a systematic, documented, periodic and objective review by a regulated entity of facility, operations and practices related to meeting environmental requirements."

(ii) The Confederation of British Industry (1990) defines environmental audit as, "the systematic examination of the interaction between any business operations and its surroundings. This includes all emissions to air, land and water; legal constraints; the effects on the neighbouring community, landscape, and ecology; and the public's perception of the operating company in the local area...Environmental audit does not stop at compliance with legislation. Nor is it a 'green-washing' public relation exercise...Rather it is a total strategic approach to the organization's activities."

(iii) The International Chambers of Commerce (ICC) in its publication *Environmental Auditing* (1989) defines environmental auditing as "a management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing, with the aim of helping safeguard the environment by:

(a) facilitating management control of environmental practices; and

(b) assessing compliance with company policies which would include meeting regulatory requirements."

3.4 The definition given by ICC is unanimously accepted definition. Many leading companies follow the same basic philosophy and approach as given by this definition. The European Commission in its regulation on Environmental Auditing and Eco-management and Audit Scheme (EMAS) also adopts the ICC definition of environmental audit. The European Commission's Eco-management and Audit Scheme (EMAS) defines an environmental audit as ... "a management tool comprising a systematic, documented, periodic and objective evaluation of the performance of the organization, management system and process designed to protect the environment with the aim of: (i) facilitating management control of practices which may have an impact on the environment; (ii) Assessing compliance with company environmental policies."

Hence, environmental audit may be defined as a means of management which allows exhaustive, documented, periodical and objective evaluation of the way in which management and equipments of an entity manage and control their environmental impacts and comply with environmental policies, standards and environmental laws.

Features of Environmental Audit

3.5 The following are features of environmental audit:

(i) *Management tool* – Environmental audit is generally considered as one of the management tool which is a part of internal control system and is mainly used to assess, evaluate and manage environmental performance of a company. It can be taken as one of the many ways used by management to respond to the environmental issues.

(ii) *Aim of environmental audit* – A green audit may be conducted for many purposes, for example, to comply with environmental laws or as a social responsibility measure or to meet some certification requirements. But the main and ultimate aim of any environmental audit is to evaluate and control the adverse impact of economic activities of an organization on the environment.

(iii) *Environmental audit should be distinguished from Environmental Impact Assessment (EIA)* – EIA is a tool used to predict, evaluate and analyze environmental impacts mostly before a project commences. It assesses the potential environmental effects of a proposed facility. Whereas environmental audit looks at environmental performance for an existing operation or activity. The essential

purpose of an environmental audit is the systematic scrutiny of environmental performance throughout a company's existing operations.

(iv) *Systematic* – Environmental audit is a systematic process that must be carefully planned, structured and organized. As it is a part of a long-term process of evaluation and checking, it needs to be a repeatable process so that over time, it can be easily used by different teams of people in such a way that the results are comparable and can reflect change in both quantitative and qualitative terms.

(v) *Documented* – Like any other audit, the base of any environmental auditing is that its findings are supported by documents and verifiable information. The audit process is designed in such a way that it seeks to verify on a sample basis past actions, activities, events and procedures with available evidences to ensure that they were carried out according to system's requirements and in a correct manner.

(vi) *Periodic* – Environmental audit is generally conducted at pre-defined intervals. It is a long-term process because it can sometimes take long time before sustainable environmental change and improvement can be tracked clearly.

(vii) *Objective evaluation* – Though environmental auditing is conducted using pre-decided policies, procedures and a proper documented system, there is always an element of subjectivity in an audit, particularly if it is conducted internally. In addition to internal environmental audits, having independent audit teams that have specialized skills and who come back periodically (say annually) to repeat audits tends to increase objectivity in the system. Hence for the sake of objectivity, external environmental audits are preferable. This is also required under many certification guidelines (e.g. ISO 14001).

(viii) *Environmental performance* – As mentioned before, the essence of any environmental audit is to find out how well the environmental organization, environmental management and environmental equipments are performing. The ultimate aim is to ensure that organization's environmental performance meets the goals set in its environmental policy and also to ensure compliance with standards and regulatory requirements.

Objectives of Environmental Audit

3.6 At national level, the main objective of environmental audit is to see that the natural resources are properly utilized and proper steps have been

undertaken to control or to prevent adverse affects of production, development and other activities on the environment. The aim is to ensure that the natural resources are utilized for industrial development and for national progress and at the same time, to see that proper steps have been undertaken for maintaining health, welfare of the community and also for dispersal of harmful wastes and social risks.

3.7 At corporate level, there are some environmental responsibilities facing companies like, meeting regulatory requirements, cleaning up pollution that already exists, properly disposing of the hazardous material, disclosing to the investors the amounts and nature of the preventive measures taken by the management, operating in a way that environmental damage does not occur, and promoting a company-wide environmental attitude. To check fulfillment of these environmental responsibilities by the organization, environmental audits are conducted. Environmental audit aims at evaluating and reporting key environmental performance measures like, pollution control measures, energy conservation or waste management techniques, etc. The main objective of an environmental audit at organizational level is to ensure conservation of scarce natural resources and to promote use of clean technologies in industrial production and to minimize generation of pollution and waste.

3.8 The following are major objectives of environmental auditing:

(i) Determine and document compliance status;

(ii) Help to improve environmental performance at operational facilities;

(iii) Assist facility management ;

(iv) Increase the overall level of environmental awareness;

(v) Accelerate the overall development of environmental management control system;

(vi) Improve the risk management systems;

(vii) Protect the corporation from potential liabilities; and

(viii) Develop a basis for optimizing environmental resources.

Benefits of Environmental Auditing

3.9 If environmental auditing is implemented in a constructive way, there are many benefits to be derived from the process. Some of these benefits are as follows:

(i) *Improves efficiency of Environmental Management System (EMS)* – Environmental auditing encourages an organization to

examine its operations in a constructive manner and is the cornerstone of an effective EMS. It helps in assessing performance of the EMS, identifies deficiencies in the system and provides the basis for environmental improvement plans. On the basis of findings of environmental audit, management can recommend corrective actions and identify further training needs.

(ii) *Compliance with environmental laws and standards* – The most important benefit of environmental audit is that it ensures cost effective compliance with environmental laws and regulations, industry guidelines and standards, and company's own environmental policies.

(iii) *Risk mitigation* – There is a growing belief that environmental issues represent a source of risk in terms of unforeseen or foreseen reputational damage or similar other risks. In fact, it is the concern regarding environmental risks which has led to the development of the field of environmental auditing. Environmental audit can act as effective risk management tool for assessing compliance with environmental legislation, and thereby, assisting your company in avoiding the risk of prosecution and fines arising from potential environmental breaches. This is particularly true for those involved in hazardous polluting industries.

(iv) *Meeting stakeholders' expectations* – These days, stakeholders have heightened expectations for a company's environmental performance. They are concerned about environmental responsibility and want to know about potential hazards and future environmental liabilities of the companies. Conducting environmental audits will help in reassuring various stakeholders that the company is living up to its environmental principles. It helps in enhancing reputation of the company as a good corporate citizen. It assists good relations with control authorities and also increases confidence with the general public.

(v) *Reduction in operational inefficiencies* – Environmental auditing can highlight areas of inefficiencies in the operations and processes, for example, where the amount of resources used are out of proportion to the amount of items or services produced and sold. By identifying operational inefficiencies, a company may be able to reduce its cost and/ or improve its environmental performance. In addition, it also highlights ways of safeguarding the environment.

(iv) *Encourages continual improvement*– By pinpointing both strengths and weaknesses in the environmental management and other

operating systems relating to the environment on a regular basis an environmental audit encourages continual improvement. It is to be noted that environmental audit will cost an organization both time and money but if approached correctly, the organization should be able to recover these costs very easily.

(vi) *Compliance with certification requirements* – Conducting an environmental audit can be an important step towards gaining a companywide certifications like, ISO 14001 or cradle to grave or product specific certification from organizations like, Energy Star, LEED, the Forest Stewardship Council, Chlorine Free Products Association, etc.

(vii) *Increases employees' awareness of corporate environmental policy and responsibility* – Environmental audit demonstrates to the employees company's commitment to environmental protection. It upgrades the level of information for use in emergency situations. It also provides the company with a greater overall awareness of its workers, potential health hazards, risks and other needs. It boosts staff morale and commitment to quality within the company.

(ix) *Assists management in decision-making* – Environmental audit provides an environmental database to assist management decisions on plant modifications, designing of new projects, identifying new market and commercial opportunities. It also enables management to set targets and give credit for good environmental performance. Increasingly, companies are recognizing the practice of ecological auditing as a valuable environmental management tool as it can provide information for management review (audit findings and recommendations); raise corporate image with respect to environmental concerns; provide competitive advantage by raising corporate profile with respect to environmental issues, especially through ISO 14001 certification; facilitate evaluating the integration of the corporate EMS into the operation being audited; improve management control and allow checking and corrective action in the light of increasing complexity of environmental legislation.

Hence, there are several benefits of environmental auditing. Increasingly, companies are recognizing the practice of ecological auditing as an important tool of contemporary business management. Environmental audits have shown to the corporations that environmental protection can be regarded as an investment in the future. It helps in complying with regulatory requirements, reducing

legal costs, enhancing corporate image with respect to environmental concerns, provides competitive advantage and improves profitability of the concern. It has been realized that saving the earth and making profits is not an either/ or proposition.

Chapter 4
Evolution of Environmental Audit

4.1 This chapter explains evolution of the concept of environmental audit over past few decades. It also presents some international standards on the issue.

Evolution of Environmental Auditing

4.2 The awareness of the environment and man's ability to cause damage started from the fifties of last century. In 1972, a World Conference was held in Stockholm where heads of States from all over the world came together for the first time to consider the State of the Globe as a whole, which ultimately gave birth to a special UN Agency titled UN Environmental Program (UNEP) to deal with environmental issues. But prior to the 1980s, many companies saw environmental protection as something to be avoided, if possible. Some regarded environmental protection as a costly expense that could make companies less competitive. However, environmental disasters in the 1970s and 1980s, such as those at Bhopal and Chernobyl in Europe and the Valdez oil spill in the USA, led to a dramatic increase in environmental awareness throughout Europe and the USA. Ecological activism increased and environmental groups began to lobby for stricter state environmental legislation and eco-friendly corporate policies.

4.3 In 1969, the US National Environmental Policy Act (NEPA) was promulgated. Environmental impact assessments (EIAs) were probably first developed in the USA under the NEPA. This lead was initially followed by Canada, Australia, Netherlands, New Zealand and Japan but has since become a requirement – often a legal requirement- across the globe. The Environmental Protection Agency was established in December 1970 to implement policies for the regulation of emissions, discharges, environmental impact assessments, pesticide use and so on. Quantitative assessments of impacts on air, water, toxicity levels and health standards became widespread. Interest amongst US Regulators about environmental audit started with the draft report issued by the EPA which called for independent, certified, third party environmental auditors who would visit plants, collect samples, perform analysis and report back results to the government authorities. However, the draft report never developed beyond draft stage.

4.4 Environmental auditing originated in the United States in the 1970s. In early seventies, the chemical industry in USA was the first to embrace the

environmental audit concept. It became popular for evaluating ecological performances of some units in the Oil Field and Chemical industry so as to avoid the remediation costs and fines which might stem from the failure to manage environmental liabilities. Cahell and Kane (1989) traced the beginning of the use of environmental auditing as a management tool to actions taken by the Securities and Exchange Commission (SEC) that required three public companies (US Steel, Allied Chemicals and Occidental Petroleum) to perform internal environmental audits to determine the nature and extent of the companies' environmental liabilities for presentation to the stakeholders in corporate annual reports. The SEC believed that public companies were understating their liabilities in their annual reports.

4.5 Most of these early environmental auditing practices were simply internal reviews to help management to discharge their regular duties. The focus was on achieving and maintaining a level of compliance with regulatory requirements and solving any urgent environmental problem to avoid unnecessary costs. Later on, EPA developed a comprehensive guidance document which outlined procedure for conducting environmental management audits. As regulations became more complex, non-compliance costs increased and EPA stressed the importance of conducting environmental audits to reduce compliance costs, environmental managers of several Federal Agencies began to incorporate audits as essential tools in their operations. Rules governing hazardous chemicals were implemented in the United States in the early 1980s. Many large chemical producing companies began to develop environmental audit programme in order to comply with these rules. This trend towards adoption of environmental auditing programme to help ensure compliance and meet other obligations continued and later on at the beginning of 1980's, this practice spread in major developed countries having different meanings. Many management consultancy firms began to encourage their clients to undertake environmental audits as a means to quantify their environmental liabilities. In the mid 1990s environmental audit reached a certain level of maturity and its applicability spread beyond the basic chemical industries to all types of industries.

4.6 In the beginning, environmental audits in the US tend to focus primarily upon the issue of legal compliance, rather than continuous improvement. Now EPA has begun to change its approach by encouraging companies to use self audits as a means of "self-policing". This new "self-disclosure" approach is an attempt by the authorities to encourage the correction of problems at an early stage. This avoids delays in disclosure because of fear of prosecution which often ultimately results in serious environmental degradation which is more difficult and costly to remediate. If companies

come forward with the results on self audits and volunteer their non-compliance with legislation, they can get some of their penalties reduced by as much as 75%.

4.7 US Corporations with holdings in *Canada* introduced the concept of environmental audit to their Canadian subsidiaries in the early 1980s. However, many Canadian companies had already implemented in-house auditing programmes before stringent environmental regulations began to appear. These programmes were designed as tools for management excellence rather than protection from liability. The Canadian Institute of Chartered Accountants (1993) issued the document – 'Environmental Costs and Liabilities: Accounting and Financial Reporting Issues' which expressed how environmental concerns should be accounted for and reported in the financial reports. This stimulated an interest in assessing environmental performance and in the following year the Canadian Standards Association (CSA) published Guidelines for Environmental Auditing: Statement of Principles and General Practices (CSA, 1994). The purpose of these environmental audit guidelines was to encourage organizations to consider environment when making business decisions.

4.8 Environmental auditing was introduced to UK and elsewhere by the multi-national corporations who began to apply the audit procedures corporately and to their subsidiaries. Then, public sector bodies and local authorities increasingly started adopting auditing methods to establish baselines of environmental performance. In the late 1980s, a number of authorities, prepared environmental charters, follow up environmental strategies and action plans which are generally referred to as green plans. The leading authorities also realized the greater corporate performance and environmental benefits of the broader and deeper approaches of the internal and external auditing. In 1990s, Strategic Environmental Assessments (SEAs) emerged as a way of appraising the environmental impacts of policies, programmes and plans. Many local authorities in England and Wales undertook these audits.

4.9 In the mid-eighties, on the basis of changing situation and because of the environmental issues becoming a worldwide phenomenon in the developed and the developing countries, World Commission on Environment and Development (WCED), known as Bruntland Commission was established by the UN. The Commission published a report called "Our Common Future"' in 1987, with the proposed concept of 'sustainable development'. According to the report, the aim of sustainability is to have "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The report suggested that equity, growth and

environmental maintenance are simultaneously possible and that each country is capable of achieving its full economic potential whilst at the same time enhancing its resource base. This concept received worldwide acceptance and led to the convening of the UN Conference on Environment and Development (UNCED) in Rio de Janerio, Brazil in 1992, known as "EARTH SUMMIT". In this conference, heads of different States signed four agreed documents including the Agenda 21. The Agenda 21 contains a checklist of do's and don'ts to protect the environment through the next century. Particularly, the role of corporate entities in respect of overall management of the environment was duly recognized in this conference.

4.10 Environmental audit's emergence in India coincided with the country's reintroduction to the global arena, the initiation of the process of liberalization and globalization, growing commitment to the principles of the Constitution and consequently, increasing awareness among the public about the impacts of human activities on the environment. Rule 14 of the Environmental Protection Act, 1986 was introduced on 13.3.1992 which requires certain industries to submit environmental audit report every year in a particular format (Refer to Annexure IV for Form V). The environmental audit report has to be submitted to State Pollution Control Board (SPCB) every year. This report is mandatory in the following cases:

- For every industry/ operation/ process which requires consent under Water (Prevention and Control of Pollution) Act, 1981,
- For every industry/ operation/ process which requires consent under Air (Prevention and Control of Pollution) Act, 1981, and
- For every industry/ operation/ process which requires authorization under Hazardous Wastes (Management and Handling) Rules, 1989.

4.11 The emergence of the ISO 14000 series on EMS and environmental audits has resulted in many international corporations seeking ISO 14001 certification for their national and international subsidiaries. An increasing number of Indian companies are also becoming ISO 14001 certified and are being audited annually by local certification bodies. During 1990s, there were few organizations undertaking environmental audits and there were a few auditors available. However, in the last decade, the importance of this field is constantly increasing. As people have started realizing the social and ecological costs of economic activities, interest in voluntary auditing is also growing.

4.12 In 21st century, environmental auditing has become more proactive as organizations have recognized potential market and shareholders benefits, efficiency gains, financial savings, and the importance of improved relations.

Earlier it was thought that environmental audit and environmental impact assessment should only apply to the most polluting (so called dirty) industries such as extraction, chemical, gas, cement, etc. But now environmental audits have been undertaken on banks, hospitals, universities as well as on NGOs and community enterprises. It has been realized that every organization has significant environmental impacts.

Some International Standards on Green Audits

4.13 Different countries have developed various sets of principles and auditing standards to check ecological responsibility of the companies. Many companies voluntarily became signatories to these standards. While national guidelines on environmental auditing and EMS have existed in some countries for quite some time, it was the issuance of international and generic standards which thrust environmental auditing and EMS onto the international stage as a central plank in any organization's environmental policy and strategy. There are three of these standards that we are mentioning here:

The British Standards Institution's BS7750

It is typically considered to be the first international standard for EMS and environmental auditing. Issued in 1991 (and subsequently withdrawn in 1997 in favour of ISO 14001), it drew heavily on the approach and rationale used in the British Standard approach to 'total quality management'. The essential element of the standard was that an organization must have a systematic environmental policy in place, means to identify key issues, a systematic monitoring of these and a commitment to continuous improvement. With its emphasis on the means of managing environmental effects rather than on actual environmental performance, the standard was relatively popular with business, widely adopted and in broadest terms, set the template for the later standards.

The European Eco-Management and Audit Scheme (EMAS)

EMAS was adopted by the European Council in 1993. EMAS is the EU voluntary instrument which acknowledges organizations that improve their environmental performance on a continuous basis. The scheme has been available for participation by companies since 1995 and was originally restricted to companies in industrial sectors. Since 2001, EMAS has been open to all economic sectors including public and private services.

The three key elements of EMAS were its robust insistence on targets and improvements, its site-basis and its requirement for disclosure and verification (refer to Exhibit 2). The insistence on targets and improvement means that the standard will not tolerate simply monitoring environmental effects, but actually requires improved environmental performance. The site-basis of the standard, whilst it allows organizations to develop their compliance with EMAS on a piecemeal, it also means that dirty sites cannot be hidden by off-setting results against cleaner sites. The most important issue was, however, disclosure and verification. If improvement in the environmental performance of organizations is our principal aim, then disclosure seems an essential component. Companies need to know that their performance will be under public scrutiny based on data which has been systematically attested to. In 2009, the EMAS regulation was revised and modified for the second time. The idea was to move away from merely operational environmental measures towards a strategic approach on how to deal with environmental challenges.

EMAS remains the toughest of the environmental management and audit standards. It was adopted widely in Germany and Austria but its adoption in other countries was patchy. In Europe many organizations run EMS under EMAS logo and report on their environmental performance through publication of an independently verified environmental statement which is guaranteed as to reliability of provided information by EMAS.

Exhibit 2: Requirements for registration under EMAS

- The organization must have a policy related to EMAS.
- There must be on site review of the policy.
- There must be clear objectives of the organization regarding environment, on the basis of policy and review discussed above.
- Regular audit of the matters related to the environment should be there.
- A clear statement by the organization regarding the environment.
- Continual improvement process (CIP) including expansion, enrichment and upgrading.

ISO 14000 Series of Standards

In 1993, ISO began work on the ISO 14001 standards for environmental management systems. Incorporated within these standards are guidelines for environmental audit tools and procedures. ISO 14000 series emerged

primarily as a result of Uruguay round of the GATT negotiations and the Rio summit on the environment held in 1992. The standards apply to all types and sizes of organizations.

Exhibit 3: Outline of ISO 14000

An environmental management system (ISO 14001) must comprise:

- An environmental policy;
- An assessment of environmental aspects and legal and voluntary obligations;
- A management system;
- A series of periodic internal audits and reports to top management;
- A public declaration that ISO 14001 is being implemented;
- An environmental audit (ISO 14010) is required to establish that ISO 14001 is being complied with.

Source: Gray and Bebbington, 2001, p.108.

This approach to auditing is often called 'compliance auditing', because it is directed towards compliance with the law and the avoidance of fines and lawsuits. Exhibit 4 shows ISO standards relevant for environmental auditing.

Exhibit 4: ISO Standards relevant for environmental auditing

- 14010: Guidelines for environmental auditing- General principles of environmental audit.
- 14011: Guidelines for environmental auditing- Audit procedures- Part I: Auditing of EMS.
- 14012: Guidelines for environmental auditing- Qualification criteria for environmental auditors.
- 14013/15: Guidelines for environmental auditing- Audit programs, reviews and assessments.
- 14024: Environmental labeling- Practitioner programmes, guiding principles, practices and certification procedures of multiple criteria programs.
- 14031/32: Guidelines on environmental performance evaluation.
- 14040/43: Life cycle assessment general principles and practices.

In 2002, ISO 19011 was introduced. This standard provides guidance on the principles of auditing, managing audit programmes, conducting quality management system audits and environmental management system audits, as well as guidance on the competence of quality and environmental

management system auditors. It is applicable to all organizations required to conduct internal or external audits of quality and/ or environmental management systems or to manage an audit programme. This first edition of ISO 19011 cancels and replaces ISO 10011-1:1990, ISO 10011-2:1991, ISO 10011-3:1991, ISO 14010:1996, ISO 14011:1996 and ISO 14012:1996.

Chapter 5
Environmental Audit Process

5.1 This chapter deals with process and techniques of environmental audit. The chapter is divided into four sections. Section 1 deals with the question whether environmental audit is a technique of internal audit or it is external audit. Section 2 gives stages in environmental audit process. Section 3 gives desired contents of environmental audit report and Section 4 lists out some techniques used in environmental audits.

Internal or External Audit

5.2 A question generally raised is whether environmental audit is part of internal control and audit system to be conducted by employees of the organization or it should be conducted by external independent persons. In fact, a competent environmental auditing programme, conceivably a combination of internal and external auditing, is an excellent means for minimizing organizational environmental risks.

5.3 ISO 14000 also views environmental audit as a management tool which involves both types of auditing:

- Internal audit carried by company's own staff to look on its own system, procedures and activities in order to ascertain whether they are adequate and are being complied with; and
- An external audit performed by some independent party on the facility to assess their capabilities in meeting specified requirements.

Hence, environmental audit should be performed by both internal and external auditors. Both are interested in the same areas of the organization but for different reasons. Internal auditors as a part of management are interested in reviewing compliance with environmental regulations and statutes; determining the propriety of the accounting for environmental issues and ensuring that proper disclosure is being made. They evaluate the internal controls to see that these are in place to keep environmental problems at a minimum, to make efficient use of resources and to keep wastes and pollution under control.

5.4 Internal auditing has two major customers – the auditee, the operating organization whose performance will be enhanced by the results of the audit; and management that needs feedback on the operating units for which it is accountable. In order to accomplish these dual responsibilities, the audit

operations should cover many areas like, compliance audit, environmental management system audit, issue audit, supplier audit, insurance audit, material audit, etc. (for details on these audits, refer to chapter 6)

5.5 There should be independence and objectivity in the functioning of internal audit team. The members of the internal audit team should be free from any organizational constraints and should have a direct reporting path to top management. The audits should be performed in a systematic and well organized manner. Audits should also be well planned and the audit programmes should be a logical guide based on comprehensive preliminary survey progress. The audits should be well documented and all elements of the audit reports should be well supported by the working papers.

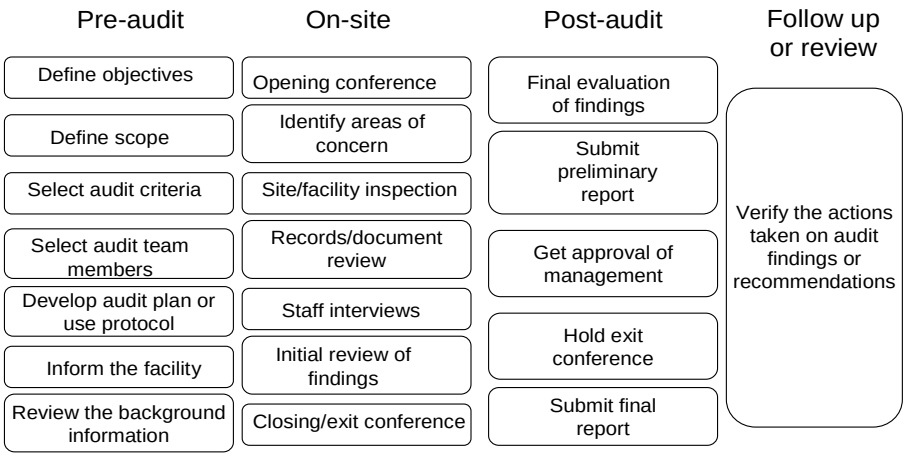
5.6 External environmental auditors must, either by themselves or with environmental experts determine that the organization is complying with governmental regulations in the handling of emission of pollutants, the disposition of contamination and waste and the detoxification of previously contaminated assets. He is essentially interested in ensuring that the financial statements are proper. External auditor must be familiar with the environmental aspects of reviewing assets and liabilities to determine that their valuation is proper, contamination has not reduced the carrying value of the assets, and that the expending and capitalization of remedial costs has been recorded properly. The external auditor must also determine that financial statements reflect all environmental costs and liabilities of the organization. In addition, he should check whether the client, as a result of the acquisition of new properties and assets, is exposed to or actually have incurred liabilities as a result of the contamination of the acquired assets.

5.7 Environmental audit being a diverse activity is, generally, conducted by a team of auditors having one lead auditor and others as audit assistants. To conduct environmental audits efficiently, the audit team must be duly qualified for the operation. It is recommended that, in addition to personnel with audit experience and ability, the teams should have available to them qualified environmental engineers on a full time basis or as advisors when needed. The audit teams should also have legal expertise available as needed.

Environmental Audit Process

5.8 Although different types of environmental audits examine different issues, all environmental audits should have four basic stages of activities: pre-audit, on-site, post-audit and follow up or review activities. These stages have been depicted in Exhibit 5.

Exhibit 5: Process of Environmental Audit



Stage 1: Pre-audit or Planning Stage

5.9 Audit planning is vital to the success of the audit undertaken. It is essential that the internal auditor spends adequate time in planning as this will result in better identification of important areas, potential problems and proper assignment of work. During this stage of audit, generally following steps are taken:

(i) *Collect background information about the entity* – Collect information about environmental policy and goals of the organization, relevant environmental laws, regulations and standards governing the entity, persons responsible for carrying environmental duties, environmental budget, significant environmental matters like, material costs, risk areas, etc.

(ii) *Define objectives of audit* – What are the goals of the environmental audit?

(iii) *Define scope* – What parts of a facility (operations) will be audited? What programmes will be audited? How far back will the audit examine?

(iv) *Choose audit criteria* – Against what will the facility be audited (e.g., for regulatory compliance audits, against what regulations or standards will the facility be audited)?

(v) *Select the audit team members* – The audit team leader selects team members based on appropriate knowledge and experience. The team

can consist of external consultants, internal staff, or a combination of both. If internal staff is going to be involved, they should be chosen in a proper way so as to avoid conflict of interest. The facility environmental manager, for example, should not be on the audit team.

(vi) *Develop audit plan and protocols* – Protocols are written guides for the auditors that outline the activities to be undertaken in conducting a review of a given topic area during the environmental audit. They often contain detailed information about audit criteria, such as, applicable regulations. Computers are often used in creating audit protocols and in locating and sharing information between team members during the audit (e.g., regulatory databases are often utilized in creating audit protocols).

(vii) *Inform the facility* – Arrangements for on-site activities need to be made.

(viii) *Desktop review*.

Stage 2: On-site or Field Audit

5.10 The following are steps involved in on-site or field audit:

(i) *Opening conference* – Communicate the objectives and methods of the audit of key facility personnel and schedule necessary meetings and interviews.

(ii) *Facility tour* – Identify areas of concern for more detailed inspection, get a feel for the site and modify the audit schedule accordingly.

(iii) *Site/ facility inspection* – Established protocols should guide the inspection. The team may also wish to inspect areas of concern or interest that they have been identified in the facility tour. It may not be possible to inspect the entire facility (comprehensive inspection), therefore, sampling techniques may be an important part of determining the parts of a site to be inspected.

(iv) *Evidence* – Collect sufficient, appropriate and reliable audit evidences to check the activities, performance impacts and reports.

(v) *Records/ document review* – The audit protocols should give instructions as to the types of records to request as well as what to look for when examining the documents.

(vi) *Staff interviews* – Interviews with key informants will yield the least reliable information, due to the fallibility of human memory, but are

important in the identification of potential problems and in collecting information about facility operations.

(vii) *Initial review of findings* – Findings are the result of the evaluation of evidence collected against audit criteria. It is Important at this stage to review where the facility does not meet the audit criteria.

(viii) *Closing/ exit conference* – This is a chance for auditees to identify misunderstandings and to be introduced to the findings of the audit team.

Stage 3: Post - Audit

5.11 Steps involved in post – audit are as follows:

(i) *Final evaluation of findings*: Findings must be backed by evidence. It is important to note areas of deficiency that were present during the previous audit, but are not yet corrected. Often finding are labeled as major or minor depending on the level and types of risks posed and speed with which the audit team feels they should be addressed.

(ii) *Draft preliminary audit report*

(iii) *Get approval of the management*

(iv) *Hold exit conference*

(v) *Discuss recommendations, if any*

(vi) *Prepare and submit final report.*

Stage 4: Follow up or Review Stage

5.12 This is also called corrective action follow-up phase. While not technically part of the audit, the audit manager or team leader may be involved in developing a corrective action plan for addressing audit findings with the facility and reporting to senior management as to the progress of this plan.

Environmental Audit Report

5.13 The end product of environmental audit is environmental audit report (EA Report) which contains findings or results of environmental audit and recommendations for improvement, if any (mainly required in environmental performance audit where objective is to improve performance of the organization). EA report should be concise and informative with information displayed in a format that is easy to interpret and understand. The environmental auditor must ensure that EA report should provide an accurate

record of soundly based observations and of logical deductions. The report must be signed by environmental auditor.

Contents of Report

5.14 A standard EA report should include the following:

(i) *Executive summary*

(ii) *Introduction /background to audit* including specification of the entity/ process or activity/ system/ site in respect of which the environmental audit was conducted, and audit period.

(iii) *Object of environmental audit*

(iv) *Scope of environmental audit*

(v) *Audit criteria*

(vi) *Description of Audit approach and methodology used*

(vii) *Evidences used*

(viii) *Findings*: Depending upon type of audit, finding may include following:

- Status of compliance with environmental legislative and standard requirements;
- Status of conformity with internal environmental policies;
- Status of good environmental practices implementation;
- Measurement and recognition of all significant environmental costs, benefits, assets and liabilities and identification of significant environmental risks and contingencies;
- Level of staff awareness of operational issues relating to environmental performance; and
- Overall status of environmental performance.

The report must distinguish between isolated incidents and chronic problems.

(ix) *Conclusion*

(x) *Recommendations: It includes possible impacts of negative finding and suggested corrective action and recommendations for environmental performance improvement.*

(xi) *Signatures of auditor with date.*

5.15 The Audit report should be complete, precise, accurate and balanced. It should contain constructive and precise recommendations. It must be persuasive and instrumental in inspiring the managements of entities to take

corrective actions. The violations and omissions should also be effectively mentioned in the report. Last but not the least, the contents of green audit report should be easy to understand and free from vagueness or ambiguity, include information which is supported by complete and relevant audit evidence and be independent, objective fair and constructive.

Tools and Techniques Used in Environmental Auditing

5.16 Some of the tools which can be used in environmental audits are:

- *Checklists* – Checklists are very useful tools used to ensure that different tasks or topics are included during the audit. They are very useful in specialized cases where a complex range of issues and questions need to be asked to ensure that nothing is missed.
- *Questionnaires* – Audit protocols or audit questionnaires provide the basis and structuring for most audits. They are based upon checklist questionnaires but are more complex and include more detail and sometimes logistical information and data relating to the audit and the site being audited.
- *Questioning* – Questioning is one of the most crucial aspects of auditing yet from a training and awareness point of view, it is often given the least attention. The purpose is information gathering in nature and not an interrogation. The questioner must, therefore, be sensitive to the perspective of the auditee and avoid making the questions accusatory, judgmental or aggressive.
- *Observation* – Observation is a vital component of an auditing exercise. Observation is a disciplined activity which must be carried out in a very deliberate and controlled manner. The idea of looking at something twice is important because it is part of the process that checks that the observation is accurately noted, analyzed and recorded.
- *Photographs* – These are a very valuable aid in the audit process. However, in order to use them, a number of important practical points must be borne in mind, the most important one is formal approval before using this technique.
- Research – It is useful to try and undertake some background research and investigation into the site or company to be audited. Familiarization with the operations, products, raw materials reports, press material and newspaper articles etc. all provides useful background information to supplement questioning sessions and help understand the operational processes.

Chapter 6
Types of Environmental Audit

6.1 This chapter deals with different types of environmental audits. According to International Organization of Supreme Audit Institutions (INTOSAI), broadly environmental audits can be classified into three parts: Environmental Compliance audit, Environmental Performance audit, and Environmental Financial audit. This chapter discusses these three types of environmental audits and also gives some emerging trends in the area of environmental audit.

Environmental Compliance Audit

6.2 Compliance audit is the most common type of environmental audit. It consists of verification of environmental activities to check compliance with environmental legislation, standards, industry guidelines, and company policy. These audits include permit audits which require detailed site-specific assessments of current, past and planned operations to check compliance with permits and consent orders. Another sub-type of compliance audit is 'Specific requirement audit' which assesses regulatory compliance with a specific regulation or compliance with a specific standard (e.g., for sustainable forestry management). The need for compliance audits is clear. The environmental laws and regulations have increased in size and complexity over the past two decades. Violation of these requirements may result in heavy fines. Over the time enforcement has become strict, penalty is heavy and chances of being caught have increased. Hence, importance of compliance audits has increased significantly. Following are the important points about compliance audit:

(i) *Objective* – To provide assurance that organizational activities are conducted in accordance with relevant environmental laws, standards, guidelines and policies.

(ii) *Focus* – All applicable obligations.

(iii) *Audit Criteria* – National law, Supra-national law, International agreements, Applicable standards, Industry guidelines, or corporate policy.

(iv) *Main Benefits* –

- Helps in ensuring compliance with environmental laws.

- Reduces risks and costs associated with non-compliance.
- Identifies liabilities and risks (present and potential).
- Helps in knowing the gap between promises and results achieved by policies.
- Saves costs by minimizing waste, conserving resources and preventing pollution.
- Helps in improving environmental performance.

Examples of environmental compliance audits have been discussed in the following paragraph:

Energy Audit

6.3 Energy audit is verification, monitoring and analysis of use of energy with a view to reduce energy consumption per unit of product output and thereby to reduce operating cost and environmental effects. It gives a positive orientation to strategic area of energy cost reduction without affecting productivity or quality. Focus of energy audit is on data relating to overall energy consumption, share of various forms of energy in total, cost of various forms of energy, availability and reliability of supply of energy, an appropriate energy mix steps taken to conserve energy and benefits of energy conservation.

In many countries energy conservation audits are compulsory. In India, companies are required to publish information on Energy Conservation (steps taken for this and benefits derived therefrom) in the annexure to Director's Report under Section 217(1) (e) of Companies Amendment Act, 1988. For ensuring the truth and fairness of information given, energy audits should be conducted.

Certification Audit

6.4 As mentioned earlier, there are three main standards which were/ are used for certification:

(i) *The British Standards Institution's BS7750* - The first international standard for EMS and environmental auditing (issued in 1991 and subsequently withdrawn in 1997 in favour of ISO 14001).

(ii) *The European Eco-management and Audit Scheme (EMAS)* - First adopted by the European Council in 1993, EMAS has been open to all economic sectors including public and private services since 2001.

(iii) *The ISO 14000 series* - First published in 1996, it has grown in both number and ubiquity since then. It is probably appropriate to say that

ISO 14000 is now the main standard for environmental management and audit. The reasons for this are not hard to find. Based in the USA and dominated by large US companies, the ISO's guidance on environmental management and audit is explicitly voluntary; far more concerned with the management systems than with environmental performance per se and most especially, contains a number of requirements for either disclosure or rigorous verification.

Before granting certificate to an organization, a certification audit is conducted. A certification audit is an audit which is carried out specifically to verify that an organization can be awarded a certificate. It confirms that the organization's environmental management system meets the minimum requirements to formally conform to a specified standard.

Surveillance Audit

6.5 Surveillance Audit is the term used to describe an audit undertaken to verify that an organization with an existing (e.g., ISO) certification is still meeting the minimum requirements of certification. A certificate is valid for 12 months and surveillance audits are usually carried out every six months.

Supplier Audits and Eco-labeling

6.6 Eco-labeling and supplier audit are two related issues which rely, to some degree, upon both EMS and environmental auditing. Eco-labeling relates primarily to purchases by end-users (and, thus, depends upon the quality of EMS and environmental audit in the supplying organization). On the other hand, the supplier audits are, generally, concerned with the environmental effects from the source of goods and services purchased by organizations for use in production of their own goods and services and are, thus, an essential input to the organization's own environmental management and environmental audit.

6.7 Eco-labeling aims to permit organizations to 'badge' products and services that meet the highest environmental standards in their manufacture and operation. Such labeling is perhaps at its most active in Europe. The European Eco-labeling Regulation was first established in 1991 and takes a cradle-to-grave (also called life cycle) approach to products. The award of an eco-label will be taken to suggest that the total product meets the very high standards of environmental care throughout its life to be, in fact, the result of a total environmental quality management system. It can be said that an eco-label cannot be achieved without an organization first having

qualified under EMAS or ISO 14000. In 1991, eco-labeling scheme was launched in India by MoEF, but till date it is not very popular.

6.8 The essence of the Supplier audits is that products and services bought in by an organization should meet, at a minimum, the standards applied within that organization. Supplier audits are to be conducted because a green claim for a product, service or process can be undermined by the use of non-green inputs. These audits advance the level of environmental awareness in the organization and help in establishing supply chains and competitive advantage in advance of changing law and public perception. The supplier audit is still an emerging phenomenon in India. Though many companies, particularly large PSUs and even private sector companies are going for it, it still does not have any established method in India. At their most effective, they constitute an advanced form of green consumerism and rely on policy statements whereby an organization will not buy from (for example) a company that does not have the eco-audit certification.

Environmental Impact Assessment (EIA)

6.9 Though EIA is not technically a type of environmental audit, it is considered to be a part of planning process and a useful management technique as part of wider environmental management and audit. EIA can be defined as 'essentially a process that seeks to identify and predict the impacts of new development on the environment, to mitigate them where possible and to monitor the actual impacts". As a general statement, all major projects that are subject to some form of planning permission and which are likely to have a significant impact on the environment should be subject to EIA. Exhibit 6 shows information to be analyzed in an EIA.

Exhibit 6: Information in an Environmental Impact Assessment

- Description of the proposed project, and where applicable, of the reasonable alternatives for its site and design.
- A description of the environment that is likely to be affected.
- An assessment of the likely effects of the proposed project on the environment.
- A description of the measures proposed to eliminate, reduce or compensate for adverse environmental effects.
- A description of the relationship between the proposal and the existing environment and land-use plans for and standards of, the affected area.
- An explanation of the reasons for the choice of the preferred site and project design rather than of the 'reasonable alternative.

- All this information would, in addition, need to be published in a form which the public can understand, to ensure effective public participation.

6.10 In many countries, EIA is a legal requirement for new projects that requires environmental law consent. Since July 1988, EIAs have been required throughout Europe as a result of the EC directive on environmental assessment. But even where it is not legally compulsory, corporations are voluntarily going for it to avoid any legal hassles in future. According to Gray and Bebbington, 'The EIA is clearly an area in which experience and technical, legal and scientific knowledge are required. Any organization with a well developed environmental response and fully functioning EMS system will integrate the EIA process with the other elements of 'environmental audit' to avoid duplication, to provide independent source of data and to develop the overall organizational strategy with respect to environmental sensitivity.'

Environmental Performance Audit

6.11 Environment is embedded in every strand of organizational life and its impact will continue to grow. Hence, environmental audit should become a regular, critical and analytical part of organizational management. Measurement of environmental performance and impacts and its reporting to concerned shareholders has become important in past few decades. For verifying environmental performance of the entity in different areas, environmental performance audits are conducted.

Some important points about environmental performance audits are:

(i) *Objective* – To assess whether an organization meets its environmental objectives, is effective in producing environmental results, and operates efficiently and economically.

(ii) *Focus* – Focus of environmental performance audit is on

- Environmental performance of the audited entity in different areas.
- Conduct of Environmental programmes in an economical, efficient and effective manner.

(iii) *Audit criteria* – Performance indicators prescribed by some professional institutes, government or non-governmental organizations, supra-national bodies, academic literature or environmental organizations.

Types of Environmental Performance Audit*

6.12 Within any particular management strategy, the following audits may be seen as the same in essence, differing only in terms of their objectives, scope, the risk they seek to assess, and the management decisions which they support and inform:

(i) *Environmental Survey* – Environmental survey (sometimes also called scoping audit) refers to the simplest type of environmental audit- the first step that any organization can take towards improving its environmental sensitivity. It serves number of important functions, including orienting organizations to the environmental issues, beginning the process of recognizing and identifying actual and potential areas of environmental impact, and laying out an initial agenda for undertaking environmental studies and starting the move towards a more complete environmental management. It can be considered as a very crucial step towards a full-fledged EMS and audit system.

Basically, an environmental survey includes a thorough analysis of an organization's system, its input and process requirements, their impact on the environment, and checking how these impacts can be minimized through reuse, reduce, recycle and substitute. Managers can also consider costs and benefits of such an analysis and the crucial business success factors which are affected by this kind of survey. Later on, one can include in this a reference to law, local conditions, industry standards, etc. As a starting point, this survey is very useful though not sufficient.

(ii) *Issues audit* – An evaluation of how a company's activities relate to an emerging environmental issue (e.g., global pollution, energy use) or an evaluation of corporate environmental performance in a particular area or on a specific issue (e.g., buildings, supplies).

(iii) *Energy audit* – In energy audit, basic data relating to overall energy consumption, share of various forms of energy in the total energy consumption, cost of various forms of energy, steps taken to conserve energy, cost reduction, etc. are analyzed. Process wise, plant wise or activity wise analysis can be done.

(iv) *Health and safety audits* – An assessment of health hazards, safety measures, accidental risks and contingency planning sometimes

* It is to be noted that in any of these audits if compliance with some standard, law or policy etc. is to be checked, it will be taken as compliance audit, but if it is verification of voluntary activities relating to environment, then it comes under performance audit.

merged with environmental auditing because of the interconnected impacts of industrial processes and hazards.

(v) *Site audits* – Reviewing every aspect of a site or spot checks on sites having actual or potential problems.

(vi) *Activity audits* – Reviewing a particular activity, especially one which spans sites, business units and countries (e.g., energy or waste management).

(vii) *Process audits* – Designed to ensure that policies, processes, documentation, responsibilities, monitoring and appraisal are in place.

(viii) *Corporate environmental audit* – An audit of the whole company and its environmental policies, structure, procedures and practices.

(ix) *Product or life cycle audit* – An analysis of environmental impact of a product throughout all stages of its design, production, use and disposal including its reuse and recycling (cradle to grave approach).

(x) *Third Party Audits* – Third party audits are external audits carried out by "a third party" and are a means of independently verifying internal audits carried out by an organization. They also add credibility to the effective functioning of organizations' environmental management systems. These audits would be carried out by specialized audit consultants rather than auditors from an organization's other sites.

(xi) *Environmental Management System (EMS) Audit* – An environmental management audit is an audit which explores the extent, nature and format of environmental management systems that are in place. It is normally carried out to evaluate operations which may be considering certification for formal EMS systems such as, ISO 14001 or EMAS and require an indication of how well their existing system is functioning and what is needed to bring them up to conforming to a formal EMS system requirement. An EMS audit, where an established EMS is in place, is an audit that would be carried out to test the effectiveness and appropriateness of the EMS against the context of current operations and activities or to comply with EMS audit requirements of ISO 14001 or EMAS.

What an organization must be seeking by these audits is an integrated environmental management strategy which leads organizations to consider zero complaints, zero spills, zero accidents, zero pollution and zero waste as fundamentally possible.

Environmental Financial Audit

6.13 In environmental financial audit, all financial/ monetary transactions relating to environmental activities of an organization are verified by the auditor. Some important points are:

(i) *Objective* – To enable an auditor to establish whether the reporting entity has appropriately recognized, valued and reported all significant environmental costs, benefits, assets, liabilities, and contingencies.

(ii) *Focus* – On accuracy and authenticity of environmental financial information provided in the annual reports.

(iii) *Criteria* – Standards issued by recognized bodies, standard setting authorities, guidance notes, and other academic literature.

6.14 According to International Auditing Practices Statement (IAPS) 1010 "The consideration of Environmental Matters in the Audit of Financial Statements" issued by IFAC, statutory auditor must consider all significant environmental matters in audit of financial statements. As per IAPS 1010, following environmental matters may significantly affect financial statements and hence, should be considered during an audit of financial statements:

(i) Initiatives to prevent, abate, or remedy damage to the environment, or to deal with conservation of renewable and non-renewable resources (such initiatives may be required by environmental laws and regulations or by contract, or they may be undertaken voluntarily);

(ii) Consequences of violating environmental laws and regulations;

(iii) Consequences of environmental damage done to others or to natural resources; and

(iv) Consequences of vicarious liability imposed by law (for example, liability for damages caused by previous owners).

6.15 Before conducting a regular audit, internal auditor should obtain knowledge on environmental matters which may have significant effect on the financial statements, the audit process and the audit report. He must consider environmental laws and regulations and compliance or non-compliance with them and assess inherent risk, i.e., risk of material misstatements due to environmental matters like, financial impact of non-compliance with environmental laws.

6.16 While checking annual reports, perform substantive procedures to obtain evidence in support of environmental disclosures made in the financial statements. Internal auditor should try to find that valuation of environmental

assets and liabilities (including constructive obligations) is proper and check whether the contamination has not reduced the carrying value of the assets. In addition, auditor must ensure that all intangible assets like, carbon permits or licenses have been properly valued and amortized. All significant environmental benefits should be disclosed properly in the accounts and all assets and liabilities including contingent liabilities due to environmental factors have been duly provided for and properly disclosed in the books of accounts.

Emerging Trends

6.17 As environmental auditing has continued to gain acceptance in both the private and public sectors, new trends in auditing have emerged. Some of the recent national and international developments in the field of environmental auditing include environmental management audit, pollution prevention opportunity assessment, environmental auditing standards and professional recognition, ethical audits, sustainability audits and carbon audits. Some of the emerging trends have been discussed in the following paragraphs:

Development of Non-financial Auditing

6.18 In the last two decades, non-financial auditing has developed as a business management tool and has resulted in the proliferation of audits in the annual calendars of various companies. Many companies have made the decision to combine non-financial audits such as, health, safety, environment and quality in an effort to reduce costs, disruption and inconvenience in the workplace. Sometimes also called Safety, Health, Environmental and Quality (SHEQ) audit, this approach has both advantages and disadvantages. The advantages include the fact that there are fewer audits and less likelihood of reduced productivity in the workplace. It reduces inconvenience and costs involved in conducting frequent audits. A disadvantage would be that by combining a number of audits, this could dilute the focus on the individual components. If this were balanced by increasing the length of time of the audit, this would then begin to increase the disruptive element of the audit which may affect productivity. The negative effect of the audits can be reduced if companies are able to utilize the “added value” from the audits which normally result in reduced wastage, reduced risk, improved performance and reduced incidents. It is not always possible to financially quantify these benefits and so the perception still remains that audits are time consuming and interfere with production. Another problem is that there are fundamental differences between financial and non-financial auditing and this has been noted in practice by companies who have attempted to

undertake broader based auditing exercises. For example, many aspects of the "social audits" are more difficult to quantify which creates a problem when contrasted with the more precise financial auditing structures.

Social, Ethical, Environmental and Sustainability Reporting (SEESR) Audits

6.19 Since 1990s, there has been steady growth of social, ethical, environmental and sustainability reporting accompanied by an increase in SEESR audits. The audit of SEESR is considered necessary to build credibility and trust among corporate stakeholders. Being an integrated approach, SEESR is considered to be predominantly a management tool, useful for checking the efficiency of the internal management control systems in the SEESR area, rather than a mechanism for enhancing corporate accountability to stakeholders and building credibility and trust.

Emergence of Sustainability Auditing

6.20 Sustainable development balances economic growth with environmental quality and social responsibility, while acknowledging and taking responsibility for the growth's long-term impact on society. The broadening of the scope of environmental auditing to include "Triple Bottom Line" or sustainability auditing is a relatively recent development. The "Triple Bottom Line" concept puts forward the idea that the corporate sector should not focus solely on the financial "bottom line" of profit, but also consider "social bottom lines" and "environmental bottom lines" and incorporate these into their accounting structures. Sustainability audit is an evaluation of the state of sustainability performance level in an organization using various performance indicators. It includes ideas and strategies for the future green footprints of the business. Auditing guidelines for sustainability auditing have been developed to measure and monitor "Triple Bottom Line" performance. The Global Reporting Initiative (GRI) Guidelines provide the corporate sector with a model for Tripe Bottom Line accounting. Included in these guidelines is a procedure for auditing compliance to the sustainability model. Recently, IFAC has issued Sustainability Framework 2011, 'Professional Accountants as Integrators', for sustainability accounting and auditing. Sustainability auditing is in its infancy and as yet there is no sustainability standards established by any professional accounting body. Since there is no real criterion as to what constitutes a sustainable organization, this presents something of a challenge to the auditors.

Increase in Environmental Audits by Supreme Audit Institutions

6.21 Globally and regionally, governments have made commitments to address environmental issues and sustainable development. International leadership has contributed direction and facilitated cooperation on numerous environmental issues. International environmental agreements (IEAs) are important for facilitating international cooperation. IEAs refer to agreements, declarations, accords, treaties, and conventions with an environmental focus that have been signed by more than one country. Meanwhile, governments work to protect the environment in their countries. Issues such as waste management, contaminated sites, and national park management often fall within national boundaries. Domestic action can involve a variety of public policy tools including legislation, taxes, enforcement, market incentives, regulations, and policies. These tools are necessary for nations to implement domestic environmental protection and IEAs at home.

Holding government and industry to greater accountability for their actions with respect to the environment has led to a need to report on the consequences of these actions. There is also an expectation that these reports will be subject, in turn, to an independent audit. Consequently, the role of Supreme Audit Institutions (SAIs) has been to respond to the expectations of citizens by providing independent, credible and objective verification of the information provided by government agencies with respect to their activities and their impacts on the environment. SAIs can play a major role in overseeing that their government's public policy tools will produce their intended results. As expressed by Dr. Genaro Matute Mejia, Comptroller General of the Republic of Peru:

Our audits help to improve government's management of environmental issues and in the long run improve social prosperity and economic development in each and every one of our countries.

6.22. In the past two decades, there has been significant increase in environmental audits by SAIs. Environmental audit by SAI India is conducted within the broad framework of compliance and performance audit. More than 100 specialized environmental audits have been conducted by SAIs for the last 25 years. These audits relate to air issues, water issues, waste, bio-diversities and EMS. SAI India is an active member of INTOSAI WGEA and ASOSAI working group on environment. A review of environmental audits by SAIs shows that their audit findings have been linked to the following positive environmental results:

(i) The water quality of rivers and watersheds has improved.

(ii) Action has been taken to protect against invasive species.

(iii) There has been increased protection for plants, animals, and ecosystems.

(iv) Management of natural resources has improved.

(v) Environmental degradation from construction has decreased.

(vi) Environmental pollution has decreased.

(vii) Desertification of land has been reduced.

Environmental Due Diligence Audit

6.23 An environmental due diligence audit is an audit that is normally carried out before acquisition, merger, divestiture or sale of a business or property to check the extent to which the business may have known or unknown (or visible or hidden) environmental liabilities e.g., cleaning of contaminated land or remediation cost. If a business has undeclared environmental liabilities, then these could materially affect the value of the business as at some later point, the business may be required to deal with those liabilities (e.g., clean up buried waste which has caused pollution) and thus its assets could be diminished. An environmental due diligence audit may identify one or more environmental liabilities and this may result in a re-negotiation of the price paid for the business because the liability is seen as a potential charge against the business.

Emergence of Carbon Audits

6.24 Public concerns the world over has resulted in building mechanisms such as the Intergovernmental Panel on Climate Change (IPCC) and the Kyoto Protocol for Greenhouse gas (GHG) reduction. Many countries are now considering to control green house effects and CO_2 targets through regulation of business entities using carbon emission rationing system where they allocate carbon credits or permits to them for the emission of a certain quantity of greenhouse gases in a particular period (i.e., a permitted quota), or by approving certain organizations as being able to issue legitimate carbon credits (called 'abatement certificates').

6.25 Measuring and verifying the carbon footprint, i.e., undertaking a carbon audit of a product, service, site or a whole company is a vital step towards reducing carbon emissions. Carbon audit involves identifying and calculating carbon dioxide emissions caused directly from burning fossil fuels on-site or as a result of production and other activities of the company or indirectly, when inputs or resources are purchased or emissions caused by other stakeholders including clients, employees and industrial partners, etc. This

information often enables a business to make immediate carbon reductions through fairly straight forward practical steps and sometimes through relatively simple technical solutions. For conducting carbon audit, it is necessary that some standards and guidance for companies must be provided to prepare a GHG emissions inventory at the organizational level. GHG accounting concepts and issues should be linked through the use of common accounting principles. The principles of relevance, completeness, consistency, transparency, and accuracy should be applied in their appropriate contexts. The application of these principles is intended to ensure credible accounting of both corporate GHG emissions and project-based GHG reductions. Verification of an entity's carbon accounts by independent duly qualified assurers is another important issue.

6.26 It has been felt that to deal with carbon trading related issues in accounts, accounting professionals in different countries must develop a Carbon (Emission and Sequestration) Accounting (CES Accounting) standard which needs to be consistent with the Intergovernmental Panel on Climate Change (IPCC) principles. Other CES measurement and reporting approaches to be considered in this regard are – the Global Reporting Initiative (GRI, 2006); the United Nations Conference on Trade and Development's (UNCTAD) Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (UNCTAD 2006) and the World Resources Institute and the World Business Council for Sustainable Development (2007) with its Greenhouse Gas Protocol (GHG Protocol). The GHG protocol is an international accounting tool for government and business leaders to understand, quantify, and manage greenhouse gas emissions. The protocol consists of two modules — *Corporate Accounting and Reporting Standards providing* methodologies to business and other organizations to inventories and report all of the CO_2 emissions they produce and *Project Accounting Protocol and Guidelines.*

Environmental Information Audit

6.27 Since mid 1990s, there is also a remarkable growth in the number of companies reporting voluntarily on their environmental policies, activities and performance. Research in the area has revealed that while many of these companies provide limited, qualitative, non-financial information mainly through the annual report, some large companies, particularly those operating in environmentally sensitive industrial sectors have started disclosing significant quantitative and qualitative information on the issue.

6.28 Reporting of environmental information to external stakeholders gives rise to the need for verifying these statements, i.e., environmental

information audit. It has been realized that the users of environmental information are more informed and are more concerned about accuracy and validity of data provided in environmental reports. To increase reliability, credibility and validity of environmental information provided to various stakeholders by a company, it is essential that an independent external auditor verifies these reports. This verification is necessary to ensure objectivity of the environmental reporting process, confirming the consistency of reported data and improving the quality of dialogue with stakeholders. Hence, environmental information audit system aims at providing accurate, reliable, relevant and objective environmental information to various internal and external stakeholders to help them in making more informed decisions.

6.29 Increasing number of organizations report on issues which require a high level of assurance, for example, emissions of pollutants or conservation of natural resources. There is a need to provide transparency in the data and information the company show in environmental report. This is not a new concept, as publicly listed companies are presently required to provide independently audited annual reports to shareholders. It is accepted practice that financial statements, if they are to be at all reliable, must be subject to the scrutiny of an independent third party. There is a growing view that environmental reports must also be attested to in the same way and for the same reasons. This system of auditing provides a degree of assurance to users of these statements that the contents provide an accurate view of the company's environmental performance, and permits inter-company comparison of performances.

Thus, the primary purpose of a third-party independent verification of an environmental statement is to legitimize the accountability relationship by providing assurance to the stakeholders that the information contained within the report is accurate, complete, and that the report provides a balanced view of the organization's performance. This assurance will add significant credibility to the environmental report. The verification is also a valuable management tool. It provides management with internal assurance that the information presented is a fair and accurate reflection of company's environmental performance. It also gives valuable information to management for improving management processes, systems, data collection and dialogue with stakeholders by highlighting potential inefficiencies.

6.30 For verification, it is necessary to have standards against which information has to be verified. Information is verifiable if there are criteria against which actual information can be verified objectively. The European Commission indicated that there are 15 different guidelines being used by companies producing environmental reports, naturally not all these parties

share the same goals, and hence the development of reporting has not yet progressed in a converging way. The heterogeneity of information contained in environmental reports makes them incomparable. Initiatives are being undertaken aimed at converging the practices, for example, Global Reporting Initiative (GRI), has received strong support and acceptance worldwide for its guidelines on sustainability reporting. There also exist several other guidelines for verifying environmental reports. The International Federation of Accountants (IFAC) has released an International Audit Practices Statement (IAPS) 1010 offering practical guidance on the "Consideration of Environmental matters in the Audit of Financial Statements"*. The IAPS concentrates on issues such as, consideration of relevant environmental laws and regulations; obtaining sufficient knowledge of the business in relation to the relevant environmental matters; and using the work of experts. The United Nations Inter Governmental working Group of Experts on International Standards on Accounting and Reporting (ISAR) recommendations also provides the criteria against which the audit of environmental considerations within financial statements can be considered. ISO 14000 is a methodology for environmental management. It provides necessary requirements and recommendations for any organization to develop and implement a cost effective system of management by introducing environmental auditing. ISO 14000 series may also cover environmental information audit.

* This has been discussed in detail in Section 6.3 on environmental financial audit. It is to be noted that environmental financial audit focuses on audit of all monetary information related to environmental activities of an organization. Since all financial information is reported in financial statements, it indirectly means consideration of environmental matters in audit of financial statements. The term environmental information audit is wider in scope. It includes audit of all types of information, financial, physical or descriptive, reported by a concern in the annual reports or through some other medium like environmental reports, web-sites etc.

Chapter 7

Emerging Opportunities for Professional Accountants in the Field of Environmental Audits

Emerging Opportunities for Chartered Accountants

7.1 The growth in interest and activity in environmental accounting and auditing in the past two decades is astonishing. From the most marginal and irrelevant subset of social accounting at the beginning of 1990s, it has expanded to become something which is now seen as an essential element in any organization's environmental responsibility. In this context, a question generally asked is whether a chartered accountant (CA) has required capabilities to conduct environmental audits or what role a professional accountant can play in dealing with environmental concerns. This chapter explores opportunities for CAs in the area of environmental accounting and auditing.

7.2 Chartered accountants in the past have been reluctant to participate in green issues because their capability and knowledge to conduct environmental audits may be challenged. They felt that environmental audit is a diverse activity which involves knowledge about various technical, legal and non-financial matters. It may involve multiple agencies as well as multiple users. In the absence of established standards and guidelines, it is difficult to conduct environmental audits. But over the time, it has been realized that the role of chartered accountants in green accounting and audit is significant.

7.3 According to INTOSAI, 2004, "Accountants as providers of information, reports and assurance on which business and government decisions are frequently based, have increasingly been drawn into environmental arena. The influence of accountants and auditors comes from their access to financial information. They analyze reports and communicate information on which decisions are based and performance is evaluated. They can encourage greater transparency and informed decisions about application of resources and the impact of activities on environmental outcomes without distorting existing accounting standards. Thus, in order to ensure the

provision of accurate information by annual reports, it is necessary to involve the environmental audit."

The accounting literature clearly establishes the potential for financial auditors to play a role in the conduct of environmental audits. FEE and INTOSAI created work groups for environmental audit that published guidance on conducting audits of activities with environmental perspectives in 2001. These work groups conducted numerous studies and research projects on the issue. Accounting profession of various countries have also published research reports on environmental accounting and auditing, of which the most notable work done by the Canadian Institute of Accountants (CICA) is titled "Environmental Auditing and the Accounting Profession." Another important work, "The Environmental Audit and the Audit Profession" has been done by the Limpberg Institute of Netherlands on behalf of the Dutch Accounting Professions. All these reports emphasize that accounting profession has significant role to play in environmental matters. 'By establishing commonality between the principles of financial auditing and other forms of assurance practice, such as environmental audits, financial auditors have claimed sufficient expertise to coordinate the provision of environmental audit services'.

7.4 The role of accountant in helping an organization in dealing with environmental issues can be analyzed under following heads:

CA as Environmental Accountant

Environmental financial accounting refers to the preparation of the environmental financial reports for external audiences using generally accepted accounting principles (GAAP). It mainly includes estimation and public reporting of all significant and financially material environmental information such as, significant environmental costs, liabilities and contingencies. Chartered accountants due to their specialized accounting skills can help an organization in preparing environmental financial accounts, i.e., in dealing with identification, measurement, recognition and disclosure of all significant environmental financial costs, benefits, assets, liabilities and contingencies. In this context, the most relevant work is of the United Nations Inter Governmental Working Group of Experts on International Standards of Accounting and Reporting (ISAR). ISAR began to focus on the subject of Environmental Accounting and Reporting (EAR) in the late 1980s. Starting from 1989, ISAR has issued number of recommendations on EAR. Apart from ISAR, different types of supra-national bodies (e.g., FEE, European Union) have also shown interest in EAR and some of these have issued

guidelines in this connection. Professional accounting bodies all over the world have this item on their agenda.

CA's Role in Environmental Management Accounting

In addition to the significant role that the chartered accountants can play in environmental financial accounting and reporting, environmental management accounting also offers an opportunity for accountants to develop the services they offer beyond the traditional core activities. The focus of environmental management accounting is internal. Environmental management accounting (EMA) is the process of identifying, collecting and analyzing information about environmental costs and performance to help an organization's decision-making (EPA, 1995a). EMA is mainly concerned with the presentation of data about environmental activities and performance to the management, so that it can also be considered while making number of business decisions like, capital budgeting decision, costing determinations, process/ product design decisions or performance evaluations. It has been felt that the accountants have the necessary skills and experience to:

(i) monitor, measure and control environmental costs;

(ii) manage environmental information systems so that the outputs are accurate and reliable;

(iii) identify and plan financial budgets for improvement projects;

(iv) help formulate and implement environmental strategy; and

(v) provide highly regarded advice on improvement of environmental performance.

Consideration of Environmental Matters in Audit of Financial Statements*

The International Auditing Practices Committee (IAPC) of the International Federation of Accountants (IFAC) has published a discussion paper titled "The Audit Profession and the Environment" in May 1995. According to IAPC, "Environmental matters are becoming significant to an increasing number of entities and may, in certain circumstances, have a material impact on their financial statements. These issues are of growing interest to the users of financial statements. The recognition, measurement, and disclosure of these matters are the responsibility of management. For some entities, environmental matters are not significant. However, when environmental

* In 2002, IAPC was reconstituted as the International Auditing and Assurance Standards Board.

matters are significant to an entity, there may be a risk of material misstatement (including inadequate disclosure) in the financial statements arising from such matters. In these circumstances, the auditor needs to give consideration to environmental matters in the audit of the financial statements. Environmental matters can be complex and may therefore require additional consideration by auditors."

International Auditing Practice Statement (IAPS) 1010, "The Consideration of Environmental Matters in the Audit of Financial Statements" was approved by the IAPC in March 1998. The Statement provides practical assistance to auditors by describing:

(i) The auditor's main considerations in an audit of financial statements with respect to environmental matters;

(ii) Examples of possible impacts of environmental matters on financial statements; and

(iii) Guidance that the auditor may consider when exercising professional judgment in this context to determine the nature, timing, and extent of audit procedures with respect to:

  (a) Knowledge of the business (ISA 310, "Knowledge of the Business");

  (b) Risk assessments and internal control (ISA 400, "Risk Assessments and Internal Control");

  (c) Consideration of laws and regulations (ISA 250, Consideration of Laws and Regulations in an Audit of Financial Statements"); and

  (d) Other substantive procedures (ISA 620, "Using the Work of an Expert" and some others).

The guidance under (c) reflects the typical sequence of audit process. Having acquired a sufficient knowledge of the business, the auditor assesses the risk of a material misstatement in the financial statements. The assessment includes consideration of environmental laws and regulations that may pertain to the entity, and provides a basis for the auditor to decide whether there is a need to pay attention to environmental matters in the course of the audit of financial statements. The statement also gives meaning of environmental matters and examples of environmental matters which have impact on financial statements.

When planning and performing audit procedures and evaluating and reporting the results thereof, the auditor should recognize that non-compliance by the entity with laws and regulations may materially affect the

financial statements. However, an auditor cannot be expected to detect non-compliance with laws and regulations. According to ISA 250, "the auditor's training; experience and understanding of the entity and its industry may provide a basis for recognition that some acts coming to the auditor's attention may constitute non-compliance with laws and regulations. The determination as to whether a particular act constitutes or is likely to constitute non compliance is generally based on the advice of an informed expert qualified to practice law but ultimately can only be determined by a court of law."

CA's Role in Compliance and Certification Audits

Compliance audits are conducted to verify an entity's compliance with environmental laws, regulations, standards, industry guidelines or company's own policy. It is felt that CAs can very efficiently conduct compliance audits if they gain knowledge of relevant environmental laws and regulations. They can also conduct certification audits. Such arguments, generally, centre on the requirements outlined in ISO 14012 Guidelines for environmental auditing issued in 1996. ISO 14012 para 4 recommends that, environmental auditors should have "appropriate work experience, formal training and/ or on-the job training in some or all of a number of areas, including audit procedures, processes and techniques". In 2002, ISO 19011 was issued which superseded ISO 14012. ISO 19011 also provides that in addition to personal attributes like, ethical, open-minded, versatile, observant, decisive, etc, an environmental auditor should have specific knowledge of

(a) skills in application of audit principles, procedures, techniques

(b) knowledge of EMS, terminology related to environmental matters, relevant environmental laws, environmental aspects of operations, etc.

CAs already have first set of required skills. After obtaining knowledge about environmental laws, EMS and relevant terms, they can very efficiently conduct environmental audits, particularly certifications audits. These audits may include monitoring of environmental management system of the unit, checking the status of consent orders, compliance of consent orders, water cess, other legal requirements, industrial data collection regarding product process, electric consumption, water consumption, raw materials and energy balance, etc.

In the same way, CAs can play important role in non-financial auditing or carbon audits.

CA and Environmental Information Audit

The main role of financial auditor is to express opinion on truth and fairness of assertions made in financial statements. This role can be very well extended to include environmental information audit where all types of environmental information reported by a concern through various mediums is verified with the help of all available evidences.

CA as Environmental Consultants

CAs can enter in the environmental consultancy area and help organizations in obtaining consents required under various environmental laws. For example, before establishing an industrial unit a CA's certificate about proposed Capital Investment or Gross capital investment (land, building, plant and machinery) is required to be submitted along with the application for establishment of a unit. This certificate is also known as Gross Block Investment certificate. This certificate should include the cost of land, building, plant and machinery without depreciation. CAs can also provide information on the capital and recurring (O&M) expenditure on various aspects of environment protection such as effluent, emission, hazardous wastes, solid wastes, tree-plantation, monitoring, data acquisition, etc. This is important information to be given in the application for consent to establish/ operate/ renewal of consent.

Chartered Accountants as environment consultants can play an important role in obtaining environmental clearance under the Environment Impact Assessment Notification. The environmental consultant should be conversant with the existing legal and procedural requirements of obtaining environmental clearance for a proposed project. The consultant should guide the project proponent (i.e., the person who is going to establish an industrial unit) through initial screening of the project and establish whether Environment Impact Assessment (EIA) studies are required to be conducted and, if so, finalise the scope of such study. Chartered Accountants as environmental consultants can give opinion on viability of various projects, technologies to prevent pollution and clean up polluted resources.

CA's Role in Sustainable Development

Professional accountants in all types of organizations have a significant role to play in sustainable development also. In 2011, the IFAC has issued a sustainability framework. According to IFAC, "Achieving a sustainable future is only possible if organizations recognize the role that they can and need to play. Effective action by the accountancy profession and professional accountants to better integrate and account for sustainability is an essential

part of that role. The IFAC Sustainability framework primarily targets professional accountants working in commerce, industry, financial services, education, and the public and non-profit sectors. IFAC strongly believes that these professional accountants can influence the way organizations integrate sustainability into their mission, goals and objectives, strategies, management and operations, definitions of success and stakeholders communications." IFAC's Sustainability Framework —

(i) Emphasizes on role of professional accountants in sustainable development.

(ii) Feels that accountants have knowledge and expertise in dealing with environmental matters.

(iii) Believes that professional accountants have a significant role in integrating sustainability issues into strategy, operations and reporting and in ensuring that accurate and credible necessary information, analysis and insights are available to relevant stakeholders to support decision-making.

7.5 Accountants are interested in finding a solution to the environmental issues and they are ready to accept challenges posed by global environmental concerns. Some audit companies have already started training specialized teams on environmental audit. These teams include environmental engineers, legal professionals, finance specialists, ISO 14001 certifiers, certified chartered accountants, etc. Accountants have significant role in green audits (particularly, environmental financial audit and environmental information audit) because they have knowledge of law and accounting standards and expertise in accounting and financial matters. They can ensure that environmental information provided by government or business is accurate, complete and authentic and can encourage greater transparency and informed decisions. CAs can play significant role in environmental matters as accountant, as decision maker, as advisor, as manager, as consultant, as analyst, as part of internal audit team or as independent verifier. There are significant opportunities in this area, but to avail these opportunities it is necessary to provide relevant education to deal with issues like, social audit, carbon audit, energy audit, and sustainability auditing. In addition, continuous training is required to deal with dynamic and diverse environmental issues. The need has also been felt to develop a conceptual framework for environmental reporting and some guidelines and standards for incorporating environmental issues in the financial statements.

"The ability of the planet's eco-systems to sustain future generations can no longer be taken for granted. .... Humanity is, in essence, impairing the very

foundations of our health and prosperity. Governments have a key role to play in reversing these trends and in protecting our national heritage. So do environmental auditors"[*].

[*] INTOSAI, 2004.

Chapter 8
Summary and Conclusion

8.1 Since late eighties, companies are under increasing pressure from various internal and external stakeholders to reduce adverse environmental impacts of their activities by making efficient use of scarce resources and by using cleaner production technologies. The focus is on shifting business priorities from just a financial profit bottom line to a broader "Triple Bottom Line". The global challenge is to ensure that organizations develop systems and take other necessary steps to reverse the previous erosion of natural resources and to improve their environmental performances. This requires radical changes in many of the business and management areas.

8.2 From an organization's point of view, the only sensible response to the growing complexity of the environmental agenda is to work towards the development of a fully integrated environmental management system (EMS). An EMS represents the organizational structure, responsibilities, processes and preconditions for the implementation of a company's environmental policy. To verify efficiency of the EMS and to check measures taken by the concern for environmental conservation and protection, environmental audits are required to be conducted. An umbrella term, environmental auditing encompasses a wide range of auditing practices like, certification audits, energy audits, environmental surveys, policy impact assessment, EMS audits etc. which are generally undertaken on a voluntary basis by companies as a part of strategy of self regulation as well as for ensuring compliance with environmental standards and laws. Green audit touches many areas of current, proposed and possible future environmental regulation and acts both as the first substantial step towards environmental sensitivity and as a regular and essential part of environmental management systems.

8.3 The major benefits of conducting an environmental audit include mitigating your company's legal and reputational risks, reducing operational inefficiencies, improving the environmental performance of your company, and achieving certification requirements. These audits can add value to the efforts made by organizations for managing environmental impacts. Environmental audits help a way of identifying, evaluating and managing environmental risks (known and unknown). It can be undertaken at various levels of sophistication and detail which can be tailored to the needs of the organization. The environmental audit also assists in the process of testing

performance in the environmental arena and is fast becoming an indispensable aid to business decision making.

But the value of the environmental audit as an environmental performance measurement and verification technique, and as a continuous environmental performance improvement tool has yet to be appreciated on a large scale. There is still a perception that environmental audits may have a negative impact on the organization by exposing the companies to penalties and imposition of costly changes in the facility. This perception has to change. In fact, environmental management and audit systems are now so central to organizational management that any organization which ignores them indirectly endangers its very existence. What is crucial for all types of environmental auditing activity is that it forms part of an overall environmental management strategy of a business which incorporates the environment into core business functions.

8.4 The environmental auditing should be more clearly defined and understood, if it is to be an effective management tool for improving environmental practices and procedures and gaining credibility with stakeholders. Because it is a diverse activity, in large organizations, it is necessary that an audit team should conduct it. The audit team must be qualified for the operation. In addition to persons with audit ability, the team should have available to them qualified environmental auditors on a full time basis or as advisors when needed. The audit team should have legal expertise available as and when required. However, the competence of environmental auditors is still to be defined by the professional agencies. Auditor competence is the key to the quality of an environmental audit and further efforts need to be made to define the key skills that environmental auditors need to be effective auditors. The ISO standard on auditor qualification criteria will help clarify competencies, but a more fundamental formal training and educational structure needs to be developed to allow environmental auditing to be developed as a profession.

8.5 Accountants and auditors have traditionally not been associated with the conservation of environment movement. However, with environmental issues assuming increased importance in the world, the accounting profession all over the world has shown positive response to the environmental issues by publishing research reports and putting these issues in their professional agenda (*INTOSAI, 2004*). In fact, accountant, as the prime custodian and light bearers of economic development, can no longer shut their eyes to the effect of environmental issues on business, management, accounting, auditing and disclosure system. Protection of environment and the potential involvement of accountants is becoming a

common subject of discussion among the accountants all over the world. Now-a-days, accountants are expected to take a proactive role in the environmental protection process. Corporate environmental accounting and reporting has now become a "global issue" with a pressing need to harmonize accounting and reporting of environmental costs and liabilities.

8.6 Considering the corporate entity's responsibility towards environmental protection, formulation of valuation, accounting and reporting techniques relating to environmental matters is a great challenge to the accounting profession. Increasingly careful attention has been given by both national and international auditing bodies to the ways in which environmental issues might have a financial impact on the activities of the client and the implications this can have on auditing procedures. In addition to the technical matters of verifying evidences relating to existing environmental provisions, liabilities and contingencies, the audit procedures should take into consideration explicitly the potential but hidden environmental problems. The major challenge is to incorporate environmental matters into the regular financial statements by placing an objective value to the environmental impacts. Unfortunately, no one has developed an acceptable, objective and verifiable measurement technique in this regard.

8.7 Another important challenge facing the profession is to develop environmental reporting both as a useful environmental management tool, and as a means to provide stakeholders with credible information about their environmental performance. Environmental information audits can be used as a mechanism for enhancing corporate accountability to stakeholders and building trust and credibility. This in turn, raises issues about attestation of environmental reports and the role of statutory financial auditor in this attestation. In the case of verification of environmental reports, the qualifications of the auditor are of vital importance. In order for verification to add credibility to environmental reports, the verifiers themselves must be credible. It is necessary that some qualification requirements should appear for environmental auditors in the same way as those exist within financial auditing. The task of professional accounting institutes is to provide the qualified accountants with necessary education and skills to consider environmental matters in the financial statements and to verify environmental reports. In a nutshell, environmental management and audit have been undoubtedly the major growth and development areas in a business's response to the environmental agenda and professional accountants and auditors have important role to play in conservation of environment movement.

Appendix I

The Confederation of British Industry's Guide to Environmental Audit

What is an environmental audit?

→ A systematic, objective, and documented evaluation of the impact of your business activities on the environment.

Why do so many companies are using the environmental audit as a management tool?

→ To prepare themselves for:

- New and tougher legislation
- Increasing corporate and personal liability
- Rising energy and materials costs
- Rapidly rising waste disposal costs
- Competitive pressure as other companies clean up their act
- Growing public pressure.

What can an audit do for you?

→

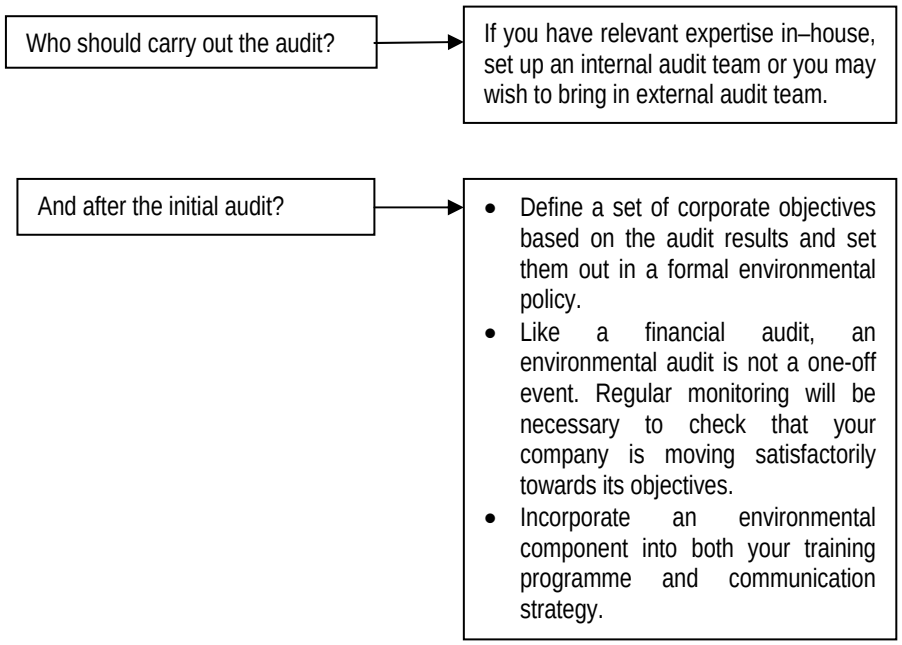
- Ensure that your company is staying within the bounds of the law
- Cut effluent and waste disposal costs
- Reduce material and energy bills
- Improve your corporate image
- Assist in formulation of an environmental policy.

What does an audit involve?

A rigorous environmental audit will do more than simply ensure legislative compliance; it will aim to identify the Best Practicable Environmental Option (BPEO) for your company. A good audit will help you run a tighter, more efficient company.

→

- Evaluating your operational practices to determine whether they can be made more efficient in terms of resource use and waste production, or altered to minimize risk of pollution.
- Examining the way in which your company deals with the waste it produces to see if more effective waste management options could be deployed.
- Taking a good look at the material and energy resources your company uses to see whether more environmentally sound alternatives could be substituted.
- Developing contingency plans for environmental mishaps.


Who should carry out the audit?
If you have relevant expertise in–house, set up an internal audit team or you may wish to bring in external audit team.
And after the initial audit?
• Define a set of corporate objectives based on the audit results and set them out in a formal environmental policy.
• Like a financial audit, an environmental audit is not a one-off event. Regular monitoring will be necessary to check that your company is moving satisfactorily towards its objectives.
• Incorporate an environmental component into both your training programme and communication strategy.

Appendix II

Relevant Environmental Laws in India

Some Acts (amended from time to time)

1927	The Indian Forest Act
1972	The Wildlife Protection Act
1974	The Water (Prevention and Control of Pollution) Act
1977	The Water (Prevention & Control of Pollution) Cess Act
1980	The Forest (Conservation) Act
1981	The Air (Prevention and Control of Pollution) Act
1986	The Environment Protection Act
1991	The Public Liability Insurance Act
2002	The Biological Diversity Act
2010	The National Green Tribunal Act

In addition, there are some Acts incorporating environmental (including health and safety) concerns like, The Factories Act, 1948; The Coastal Zone Regulations; The Indian Explosives Act, 1884; or Motor Vehicles Act, 1988.

Some Important Environment Related Rules

1989	Hazardous Waste (Management and Handling) Rules
1989	Manufacture, Storage and Import of Hazardous Chemical Rules
2000	Municipal Solid Waste (Management and Handling) Rules
1998	The Biomedical Waste (Management and Handling) Rules
1999	The Environment (Siting for Industrial Projects) Rules
2000	Noise Pollution (Regulation and Control) Rules
2000	Ozone Depleting Substances (Regulation and Control) Rules
2011	E-waste (Management and Handling) Rules
2011	National Green Tribunal (Practices and Procedure) Rules
2011	Plastic Waste (Management and Handling) Rules

In addition, from time to time, MoEF has notified Amendment Rules in almost all the major acts. For all these acts and amendments therein refer to rules and regulations on http://moef.nic.in/modules/rules-and-regulations/water-pollution/

National Environmental Plans and Policy Documents*

1.	National Forest Policy, 1988
2.	National Water Policy, 2002
3.	National Environment Policy or NEP (2006)
4.	National Conservation Strategy and Policy Statement on Environment and Development, 1992
5.	Policy Statement for Abatement of Pollution (1992)
6.	National Action Plan on Climate Change
7.	Vision Statement on Environment and Human Health
8.	Technology Vision 2030 (The Energy Research Institute)
9.	Addressing Energy Security and Climate Change (MoEF and Bureau of Energy Efficiency)
10.	The Road to Copenhagen; India's Position on Climate Change Issues (MoEF)

Some International Conventions Where India is Signatory

(i) Convention on Wetlands of International Importance, 1971 (Ramsar)

(ii) Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972

(iii) Convention on International Trade in Endangered Species (CITES) (1973)

(iv) Montreal Protocol on the Substances that Deplete the Ozone Layer, 1987

(v) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, (Basel Convention) 1989

(vi) U.N. Framework Convention on Climate Change, 1992

(vii) Convention on Biological Diversity, 1992

(viii) UN Convention to Combat on Desertification, 1994

(ix) Kyoto Protocol, 2005

* CAG, 2010, Environment and Climate Change: Public Auditing Guidelines , Principles and Practices of Environmental Audit and Climate Change.

Pollution Control Authorities

(i) Ministry of Environment and Forests (MoEF)

(ii) The Central Pollution Control Board (CPCB),

(iii) State Pollution Control Boards (SPCB)

(iv) State Departments of Environment

Appendix III
Sample Checklists

I Sample Checklist for Environmental Management System (EMS) Audit

The following table contains some sample questions which may be included in Environmental Management System audit checklist. It provides a starting point for internal auditors in preparing for an EMS audit. The checklist is general in nature, which can be customized according to nature and size of environmental system of the organization and circumstances of the case. In most cases, additional questions supporting information and clarification from the environmental mangers or staff will be necessary.

S. No.	Particulars	Questions	Yes/No	Comments	Person Responsible	Date
1	Environmental Policy and Objectives					
(a)	The Environmental Policy of the concern	• Does your company has a documented Environmental Policy? • Is this consistent with other corporate policies? • Has top management defined and committed to the policy? • Are the views of stakeholders taken into account in developing the policy? • Is the policy appropriate to the nature and scale of the company and environmental impacts of its activities, products or services? • Is the environmental policy clear and specific enough to				

		guide the setting of environmental objectives and targets? • Is the policy sufficiently clear to be capable of being understood by interested parties? • Does the policy show commitment to continuous improvement in environmental performance, prevention of pollution and sustainable development? • Does it comply with relevant environmental legislation and regulations and other environmental mandates? • Has the policy been communicated to and understood by employees of all business units? • Is the policy reviewed periodically to ensure its continuing relevance, in the light of changing standards, technology, and emerging concerns?				
(b)	The Environmental Objectives	• Does your company has clearly established environmental objectives? • Do they reflect company's environmental policy? • Do they reflect significant environmental impacts associated with the company's operations? • Do the objectives identify significant legal aspects? • Has the entity established proper systems to translate its objectives into action?				

		• Has the entity developed adequate procedures to accomplish its objectives and are they really efficient and viable? • Has the entity established environmental objectives for each relevant business function and level? • Have targets been set for environmental objectives? • Does your company's objectives and targets reviewed and revised to incorporate changes in internal and external environment? • Do you have a system of communicating your environmental objectives and policies to various concerned internal and external stakeholders (like employees, contractors and suppliers etc)? • Does your company have a proper system to identify, allocate and review human, technical and financial resources to meet its environmental objectives and targets?				
(c)	The Environmental Management system	• Has your company developed a comprehensive framework of policies, practices, procedures, systems and relevant management information to support environmental management? • Has your company adopted				

		any principles of the Environmental Management System? (e.g. ISO 14001) • Is EMS of the company of acceptable level and size within the entity? • Has environmental management system been integrated into the overall business management processes of your company? • Do the existing procedures fully take into account all environmental aspects at all levels and activities of the organization? • Are the environmental responsibilities of the Chief Executive and Executive Members of your company reasonably clearly defined? • Does your company collaborate with other departments or agencies in relation to environmental management? • Does your company communicates specific responsibilities and accountabilities • throughout the organization? • Are the environmental responsibilities documented within your company and are they up-to-date? • Has your company considered/sought/achieved ISO certification? • Do you have sufficient resources and technical				

		competencies to implement EMS as per ISO requirements? • Has your company assessed the costs and benefits of certification under the standard?				
2.	Management Issues					
(a)	Planning Environmental Aspects	• Has your company established a systematic and documented process describing the methods to identify, monitor and evaluate environmental aspects of your company's activities, products or services? • Does the process drive the development, application and operational aspects of environmental policy? • Does your company monitor and measure those operations that can have a significant impact on the environment? • Does it include an environmental risk assessment to evaluate those aspects, which may have a significant impact on the environment in a positive and negative way? • Does it considers the scale, frequency, severity and sensitivity of the environmental impacts? • Do you make efforts to determine the significance of those impacts using a recognized risk management approach?				

		• Does it ensures that aspects which have a significant impact are considered in setting environmental objectives? • Do you provide for the audit and review of the process to confirm that planned arrangements are properly implemented and maintained?				
(b)	Key performance indicators (KPIs)	• Has your company established Key Performance Indicators (KPIs) to demonstrate progress against environmental objectives and targets? • Does your company have the capability to identify and track KPIs and other data, necessary to achieve its environmental objectives and targets? • Have these targets or objectives linked to the organization's corporate or business plans to ensure accountability or follow up?				
(c)	Environ-mental Management Program	• Have you developed programs to achieve objectives and targets established for each relevant business function and level? • Do these programs respond to your company's environmental policy and the risk assessment? • Do these programs support or contribute to the authorities or Governments				

		overall environmental programs? • Do the programs nominate personnel with specific responsibilities in the environment area? • Are the programs monitored to track progress against objectives and targets? • Is someone responsible for tracking progress towards achieving objectives and targets? • Does the program include an environmental review for new activities? • Has the program been amended to reflect changes for new activities? • Does your company monitor and revise its environmental management programs?				
3.	Implementation and Operation					
(a)	Structure and Responsibility	• Is there an Executive Committee or Board to oversee the environmental monitoring and reporting of your company's activities? • Has top management defined the roles, responsibilities and authorities of personnel for environmental management in the context of the company's Environmental Management System (EMS)? • Do the roles, responsibilities and authorities extend to establishing, implementing, maintaining and reporting on the EMS?				

		• Have the roles been documented and communicated to relevant people responsible for environmental management and are the relevant people aware of the roles assigned to them? • Has management provided adequate resources to implement and control its • EMS? • Does your company integrate an awareness of environmental issues into its culture? • Does your company integrate the principles of sustainable development in decision making process through the appraisal and evaluation of policies, programs, plans and projects? • Are there written guidelines on how to conduct operations in a manner that is responsible in accordance with the principles of sustainable development? • Are systems of internal control for managing the environment appropriate to your company's corporate plan or business charter? • Do they provide timely and useful management information? • Does your company have an effective internal audit function?				

(b)	Training, Awareness and Competence	• Has your company conducted a Training Needs Analysis for environmental management issues? • Is there adequate expertise in your company to deal with the environmental and sustainability issues? • Do you have a systematic and documented process to ensure that personnel who carry out tasks that have a significant impact on the environment are adequately trained and experienced? • Does your company assess the adequacy of resources and training of staff • with designated responsibilities for environmental management and/or protection? • Are employees' responsibilities for environmental management identified in their accountabilities (e.g. position descriptions, annual performance goals)? • Are employees encouraged to take the initiative, submit suggestions for improvement, and to suggest actions or policies to reduce your company's environmental impact? • Does the training include response to emergencies and drills, and working with external agencies such as fire brigade?				

		• Does the company sponsor scientific or policy research devoted to environmental technology, management, and performance issues or other relevant research • areas at educational or research institutions? • Does the company participate in external activities designed to share the results of such scientific and policy research?				
(c)	Communication	• How does your company communicate with key stakeholders in regard to significant environmental aspects and is this process documented? • Do you try to identify, monitor, evaluate and understand the needs and expectations of stakeholders? • Does your company have a process to record and maintain communications between key employees (in your company) responsible for environmental management? • Does your company have a system to receive, record and respond to communications from interested parties about environmental impacts associated with your company's operations? • Does your company proactively seek the advice				

		of independent community groups (e.g., through newsletters, regular meetings, open forums, or community oversight committees) regarding possible risks posed by the operations of your company? • Have you established documented procedures to monitor and evaluate the effectiveness and efficiency of your communication strategy/methods? • Has your company established, and does it maintain, information to describe the core elements of the EMS and provide direction on where to obtain more information on specific parts of the EMS? • Does the information describe how the elements interact with each other? • Does it describe the key roles, responsibilities, procedures, follow-up actions or response?				
(d)	Operation Control	• Has your company identified operations and activities that are associated with significant environmental aspects of your company's operations? • Are these operations and activities carried out under controlled conditions and in accordance with operating criteria to ensure compliance with environmental policy				

		and the achievement of objectives and targets? • Does your company have a formal written policy regarding materials/resource conservation, reduction, re-use and recycling? • Have you established specific targets for material/resource conservation programs for energy, water or waste avoidance, or other emerging issues or activities? • Have you established specific targets for each conservation strategy? • Does your company monitor and document trends in energy consumption by source? • Does your company have a program to maximize the use of environmentally safer and more sustainable energy sources? • Does your company, routinely or in specific circumstances, track chemical use and environmental releases? • Has your company addressed issues of habitat protection and stewardship (such as watershed management, wilderness protection, biodiversity, etc.) in areas affected by your operations?				

4.	Monitoring and Measurement					
(a)	Monitoring	• Have you developed and implemented procedures for checking the performance of the EMS? • Is there an adequate system to identify areas of non-conformance? • Does your company have procedures to regularly monitor and measure the significant operations and activities that can have a significant impact on the environment? • Does your company have systematic and documented procedures to evaluate compliance with relevant environmental legislation and regulations? • Are periodic audits carried out using established programs and procedures? • Does your company have data collection and information management systems adequate to support environmental reporting needs? • Is the performance of your company regularly monitored in relation to the principles of sustainability and best practice? • Do you compare and publicly report predictions made in Environmental Impact Statements (EIS) with actual outcomes?				

		• Does your company have auditing programs for workplace health, safety and environmental auditing? • Does your company monitor and document trends in consumption of natural resources? • Are your company's environmental audit programs reviewed by an independent organization? • Does your company seek independent verification of data collection and information management systems? • Are your audit results available to the public?				
(b)	Checking and Corrective Action	• Does your company have systems to measure the cost and quality of environmental protection services and the use of resources entrusted to the company? • To what extent does your company use internal environmental cost information to support internal decision-making? • Is this done through a managerial cost accounting system or other financial management system that routinely compiles, analyses, and reports on environmental costs? • Which environmental costs are so identified (e.g., management costs, resource				

		use, waste disposal, permitting, monitoring, training, auditing, insurance)? • At what level are costs aggregated (e.g., product, process, facility, division, corporate)? • For what purpose is this cost information compiled?				
(c)	Non-conformance and Corrective and Preventative Action	• Do documented emergency/contingency plans exist for rectifying significant environmental mishaps? • Does your company have procedures to establish and maintain responsibility and authority for handling investigations of non-conformance and taking corrective and preventative action? • Has the cost of rectifying specific environmental mishaps/repercussions been estimated in order to prioritize your risk assessment?				
(d)	Manage-ment Review	• Does the Executive Committee or Board regularly receive key information, such as performance information, major initiatives or investigations of issues affecting the environment? • Does your company have a process to demonstrate how recommendations and				

		feedback from the EMS review have been implemented and contribute to improvement in environmental performance? • Does your company review on a regular basis the extent to which objectives and targets have been met? • Do you take into account the results of audits undertaken and any changed circumstances for continuous improvement? • Are the results of the reviews: documented, reported to, and considered by, the Board and or Chief Executive? • Do they take action on the results of the reviews? • Does your company review on a regular basis its EMS to ensure • its continuing suitability, adequacy and effectiveness • systems conform to planned arrangements • systems have been fully implemented • systems are properly maintained? • Are views of interested parties and stakeholders taken into account?				
(e)	Legal and Other Requirements	• Do your operations require compliance with environmental, health or safety regulations at either the national or state level?				

		• Is there a documented process to: • identify the legal and other regulatory requirements associated with environmental impacts of activities, products or services • provide access to the legal and other regulatory requirements • evaluate compliance with the legal and other regulatory requirements? • How does your company keep track of (changes to) legal and other requirements?				
5.	Reporting					
(a)	Document Control	• Has your company established and maintained procedures for controlling all key documents? • Are the procedures adequate so that the documents can be easily located at relevant locations? • Who is authorized to approve alterations to documentation? • Are obsolete documents promptly removed from all points of issue? • Are obsolete documents retained for legal and other reasons and suitably identified? • Do you have a transparent and open system of reporting to communicate your company's management of				

		the environment to the public? • Is there an appropriate and reliable environmental reporting system which meets requirements of the entity? • Does your company report to regulators? • Does your company contribute to National or International reports? • Does your company produce an annual Environment Report? • Does this report address the issues of sustainable development? • Is the report externally verified or validated? • Does your company report to the Parliament and/or the public on the fulfillment of its environmental responsibilitie ?				

II. Sample Environmental Compliance Audit Checklist

This sample Environmental Compliance Audit Checklist contains some usual questions relevant for environmental compliance audit. Depending upon nature of the organization and applicable environmental laws and regulations, questions can be added or deleted.

No	Particulars	Questions	Yes/No	Observations/Comments	Recommendations	Responsible person	Date
1.	General	• Is the sector in which the company operates prone to and known for a high level of					

		pollution/ environmental impact? • Does it fall within the notified industries as per CPCB's notifications? • Are there clearly specified orders empowering the entity to operate in the specified industry? • Have you obtained all the necessary approvals or permits for your operations? • Are all these approvals properly documented and readily available for inspection? • Does the sector in which the entity operates entail any special environmental risks or require special consideration? • Does the entity carry out environmental risk analysis in accordance with specified schedule? • Is there a suitable internal control system to ensure that the entity's operations achieve the intended environmental objectives? • Is the EMS suitably designed to meet environmental objectives of the entity? • Does it provide for regular verifications and physical monitoring? • Are the actions taken by the management to mitigate/ abate the environmental impacts adequate? • Have the cost for the same assessed properly?					

		• Are the penalties for violation of the environmental conditions regularly paid?					
2.	Environmental Impact assessment (EIA)	• Was the entity legally required to carry out any EIA prior to starting its operations? • Was it carried out? • Did the entity applied for and obtained environmental clearances as required under the relevant laws and regulations? • Were the conditions subject to which the clearance was granted duly met? • What was the cost of meeting environmental obligation as per environmental report/EIA report? • Was it duly recorded in the books of accounts?					
3.	Air	• Does your concern require official approval for emissions to air? • If yes, have you obtained these approvals (in the form of permits, licences, consents or authorization)? • Are these approvals up to date and available for inspection? • If relevant, are authorized limits and conditions under approval (e.g. monitoring data) being met? • Are all sources of polluting air authorized where required? • Has the entity taken action to measure and quantify the pollution level, emission level etc. during its operations?					

		• Has any reliable assessment of the level of Green house gas emissions/extent of air pollution of the environment attributable to the entity's operations been made? • Are efforts being made to control such emissions? • Has the sanctioning authority reviewed the same and given its approval?					
4.	Water	• Does your company require official approval to discharge liquid effluent to ground, surface water (including streams, rivers and lakes) or sewer or drainage systems? • If yes, have these approvals been obtained? • Are these approvals up to date and available for inspection? • Are all discharges identified and if required, authorized, licensed or permitted? • Are discharge monitoring reports available for past few (say three) years? • If relevant, are records of discharge samples kept for past few (say three) years? • Is there adequate procedure for spill prevention and control?					
5.	Waste management	• Does the company have an inventory of all the waste generated in last three years? • Does the company monitor and document usage, volume and disposal of all such waste? • Does the company have					

		details of where wastes are finally disposed off? • Does the company have specific programmes to minimize such waste? • Does the company generate hazardous waste? • Are hazardous waste collected and stored in properly constructed, undamaged, and closed containers? • Are containers held on site for the minimum time possible, and less than any legally specified limit? • Is an up-to-date inventory of hazardous chemicals kept on site available? • Does the company have a hazardous waste minimization/ pollution prevention plan in place? • Do you monitor and document oil spills, chemical spills and other accidental releases? • Is spill clean-up and containment equipment easily available?					
6.	Emergency planning and community relations	• Does the company have a documented plan for dealing with emergencies that may have an environmental significance? • Are emergency actions clearly posted in all areas, with relevant telephone contact numbers? • Does your company have procedures to identify the potential for, and response to, environmental incidents,					

		accidents and emergency situations? • Are the site emergency procedures reviewed and exercised regularly? • Does your company have procedures to report on environmental incidents, accidents and emergency situations and implementing corrective actions? • Are the procedures communicated to all relevant parties like employees, factory neighbours etc.? • Is there a programme to eliminate, or if not possible reduce the use of hazardous substances? • Is there a list of the hazardous substances on site, plus information on handling, disposal etc.? • Does your company, routinely or in specific circumstances, track chemical use through materials accounting or some other method as distinct from, or in addition to, tracking environmental releases?					
7.	Record Keeping and Reporting	• Does the company keep track of the environmental sanctions issued to it? • Is all approval documentation available? • Does the company record violations noticed in the system? • Have it taken timely remedial actions in the past? • Do you maintain record of					

		violations and remedial actions? • Is the entity required under law or regulations to submit periodical environmental performance reports to the government? • Do you report environmental performance regularly in the annual reports of environmental reports? • It the reporting system satisfactory? • Are these reports externally verified?					

Appendix IV
Environmental Statement - Form V

Every person carrying on an industry, operation or process requiring consent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 or under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 or both, or authorization under the Hazardous Wastes (Management and Handling) Rules, 1989 shall submit an environmental statement for the financial year ending the 31st March in Form V to the concerned State Pollution Control Board on or before the thirtieth day of September every year, beginning 1993. This requirement for the environmental statement was inserted through Rule 2 of the Environment (Protection) Second Amendment & Rules, 1992 vide G.S.R. 329(E), dated 13.03.92.Subsequently, the word audit was substituted by the words statement through Rule 2(a)(i) of the Environment (Protection) Amendment Rules, 1993 through notification G.S.R. 386(E), dated 22.4.93. Even the deadline for the submission of this report came from this amendment.

A specimen of form is provided in this Appendix:

FORM V

(Rule 14)

Environmental Statement for the Financial Year Ending on 31st March .....

PART A

(i) Name and address of the owner/ occupier of the industry operation or process.

(ii) Industry category Primary……(STC Code) Secondary…… (STC Code).

(iii) Production capacity…… Units

(iv) Year of establishment

(v) Date of the last environmental statement submitted

PART B
Water and Raw Material Consumption

(i) Water consumption m^3/ d

Process :

Cooling :

Domestic :

Name of products	Process water consumption per unit of product output	
	During the previous financial year	During the current financial year
	(1)	(2)
(1) (2) (3)		

(ii) Raw material consumption

*Name of raw materials	Name of products	Consumption of raw material per unit of output	
		During the previous financial year	During the current financial year

*Industry may use codes if disclosing details of raw materials would violate contractual obligations, otherwise all industries have to name the raw material used.

PART C
Pollution Discharged to Environment/ Unit of Output
(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass/ day)	Concentration of pollutants in discharges(mass/ volume)	Percentage of variation from prescribed standards with reasons
(a) Water (b) Air			

PART D

Hazardous Wastes

(as specified under Hazardous Wastes Management and Handling Rules, 1989)

Hazardous Wastes	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
(a) From process (b) From pollution control facilities		

PART E

Solid Wastes

	Total Quantity	
	During the previous financial year	During the current financial year
(a) From process		
(b) From pollution control facility		
(c) (1) Quantity recycled or re-utilized within the unit		
(2) Sold		
(3) Disposed		

PART F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

PART G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

PART H

Additional measures/ investment proposal for environmental protection abatement of pollution, prevention of pollution.

PART I

Any other particulars for improving the quality of the environment.

Appendix V
Sample Environmental Audit Report

ENVIRONMENTAL COMPLIANCE AUDIT REPORT

It is to be noted that length and detail of environmental audit report may vary according to nature and type of organization audited and also on the basis of scope and object of audit. However, usually it is expected that the report should include following contents:

Executive summary

Table of contents

1. *Background*: e.g., nature and type of auditee organization, main business, facility description, EMS, etc.
2. *Audit objective*: e.g. to review compliance status of the organization, to check reporting of non-compliance or to verify the mechanisms for rectifying non-compliance.
3. *Audit scope*: whether it is initial audit, audit of only one site, facility or process or audit of whole organization, etc.
4. *Audit criteria*: National law, Supra-national law, International agreements, Applicable standards, Industry guidelines, or corporate policy.
5. *Audit team*
6. *Audit schedule*
7. *Audit methodology*: e.g.,
   - Document review
   - Checklist
   - Interviews, etc.
8. *Audit findings*:
   - Compliance status: compliance with environmental laws, specific regulation, certification requirement or company's own environmental policy.
   - Violation information: e.g. failure to have required clearance, permit or approval, failure to have required plan or failure to report to authorities.
   - Mention the relevant law or regulation to which the violation relates like, air, water or hazardous waste Acts.

- Significant consequences of non-compliance. e.g., penalty
- Areas where non-compliance was found and corrected during audit period and areas where it is yet to be corrected.

9. *Audit conclusions and recommendations*
   - If audit findings indicate commendable level of compliance and no non-compliance was identified, still some opportunities for improvement can be identified and listed.
   - If non-compliance was found, recommendations can be made for developing some mechanism so that in future, it is not repeated. Indicate the time until the correction is to be completed and person responsible for making corrections.
10. *Annexes*
    - Environment policy and action plan of organization
    - List of applicable laws and regulations
    - Checklists

Signature of auditor with date and place

SAMPLE ENVIRONMENTAL INFORMATION AUDIT REPORT

Environmental Audit Report 2011 of ABC Ltd.

Dated

31st December 2011

1. Executive Summary
   - 1.1 Type of audit
   - 1.2 Description of audit environment
   - 1.3 Summary of findings
2. Introduction
   - 2.1 Objective of verification: To verify the reliability and consistency of environmental data selected by ABC Ltd. for inclusion in the company's Environmental Report, 2011, issued under the responsibility of the management. The aim of verification is to consider the accuracy of environmental performance data provided in the report and to provide a verification opinion based on objective evidence.

2.2 Scope of work: The scope of work covered activities at all four sites of ABC Ltd for which environmental data is generated, each one of which was visited as part of the verification coverage.

2.3 Reference documents:

- Environmental policy statement of the company
- Environmental Action plan of the company for the year 2011
- Environmental performance data of each site
- Others

3. Verification methodology: The verification has been conducted using standard audit procedures and guidance for external verification of non-financial reporting, based on current best practice. Adequate compliance and substantive procedures were used in verification.

4. Audit findings:

   On the basis of verification of data, we are of the opinion that:

   - The environmental data reported at headquarter as well as sites level is measured, collected and recognized based on established and effective internal control system and processes.
   - All errors in reported data identified during the verification process have been duly corrected
   - Environmental impact data related to economic activities of the organization was clear and unambiguous.
   - Reporting of data as per regulatory requirements was appropriate.

5. Audit Conclusions: Nothing came to our attention to suggest that data was not reliable or it contained significant errors.

6. Recommendations*

7. Annexes

   7.1 Audit checklists

   7.2 Supporting documents

   7.3 Auditor's qualifications

Signature of the auditor

Place and date

* These are mainly required in Environmental performance audits, where purpose is to reduce environmental impacts of the concern and improve environmental performance of the company.

For some more guidance on environmental audit reports, refer to:

1. Department of Environment, Ministry of Natural Resources and Environment, Malaysia, Environmental Audit Guidance Manual, 2011.

   Source:http://www.doe.gov.my/portal/wp-content/uploads/Environmental_Audit_Manual_Draft_91.8-final-edited-19Oct112.pdf

2. Environment Agency, Abu Dhabi, Technical Guidance Document for Environmental Audit Report, 2011.

   Source: http://www.ead.ae/_data/global/tgd_auditreport.pdf

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