INTRODUCTION
The role of accounting as an information system has widened over the last few decades. From merely a record of financial transactions it has now become multidimensional in approach. Its environment has undergone vast changes in the last three decades and these changes are expected to continue at an accelerating rate in the coming days. Accounting is moving away from its traditional function of record keeping, towards the role, which emphasises its social significance. In view of the changes in economic, social, legal, political and other environments prevalent in the country, the conventional accounting system requires change. The conventional accounting system defined "as an art of recording, classifying and summarising in a significant manner and in terms of money, transactions and events, which are in part at least, of financial character and interpreting the results thereof" (AICPA, 1970, p. 9) is narrow in scope in view of the expectations of its users. This conventional accounting system, is primarily concerned with the measurement and reporting of only economic transactions of a business. But the modern accounting has much wide scope of operations. This is due to a number of compelling factors like the replacement of the concept of shareholder with
stakeholder, rising disenchantment of the public with further economic and technological growth because of environmental decay, the depletion of natural resources and questions of inequality, change in the role of business entities from merely economic entities to socio-economic entities. Business is now regarded as a social entity and not only an economic entity (Gunnes, 1974, Smith, 1974, Patten, 1992).

Business organisations should contribute towards the development and protection of natural and environmental resources. Activities directed towards alleviating or preventing environmental deterioration (pollution) i.e. air, water, noise pollution, conservation of scarce resources and the disposal of solid waste are included in the social performance of companies (National Association of Accounting quoted by Batra, 1997, p.280).

In the environment of modern economic development, corporate sector no longer functions in isolation. Corporate are accountable only for their profits, this concept of corporate accountability is no more valid. The corporate accountability must now include the responsibility for the proper utilisation and protection of natural and environmental resources by the corporate management. The foundation for this concept of broader accountability for corporate
management's action, lay in the notions of equity and fairness, which is born from the belief that "Corporations are managed in a way that damage people who are unable to protect themselves" (Benston, 1982, p.87). The company must behave and function as a responsible member of the society just like any other individual. Thus it cannot shun moral values nor it can ignore actual compulsions. A profit is still a necessary part of the total practice but it is not the primary purpose. The company must accept its obligations to be socially responsible and to work in the larger benefits of the society (Sacher Committee, 1978, quoted by Sikidar, 1994, p.271).

The performance of any business is dependent not only on its economic performance, but also on how efficiently it discharge its responsibilities towards the environment and social (human) dimensions. The performance of a business organisation is a function of the total impact of its activities on the various segments of society and financial profits are only a part of it (Badaani, Saksena, 1990, p.172).

This concept of corporate accountability with regard to its interaction with social and environmental issues has been developing for many years (Gunnes, 1974, Smith, 1974). This widening in the role of business entities
from merely economic entities to social entities has led to change in the corporate accounting and reporting objectives. Financial reporting and accounting is now regarded as a service activity, a descriptive, analytical discipline and an information system. It is the media through which entities communicate with the outside world. Increased awareness of social responsibilities of business and accountability of directors to shareholders and the wide public interest has led to the development of need for improvement in corporate reporting practices. Because of these factors, the corporate reporting practices have undergone tremendous changes both at the national and international levels during the last decade. The objective of financial statements is to report those activities of the enterprise that affect society and which can be determined and described or measured and which are important for the role of the enterprise in its social environment (Trueblood Committee, 1973, quoted by Sikidar, 1994, p.271).

One of the social responsibilities a corporate entity is expected to discharge towards society is the effective and efficient use of natural and environmental resources. Various environmental rules, regulations and laws have been enacted all over the world to make businesses discharge this responsibility in the right earnest. But
because of the poor implementation of these rules, much result could not be achieved. Accounting profession in its efforts for the protection of natural and environment resources is working on the development of new topic called environment accounting. From an environment accounting context, accountability "requires an account of the extent to which the objectives for which the resources were entrusted have been achieved" (Gray et. al, 1991, p.3.).

LIMITATIONS OF TRADITIONAL ACCOUNTING SYSTEM

Record of only monetary transactions

Under the conventional accounting system only those transactions are recorded which can be expressed in monetary terms, thereby ignoring the information which cannot be expressed in monetary terms, even if the information is very important. The traditional Accounting model, underpinned by a utilitarian philosophy, is seen as failing to take fully into account the social interaction between the corporate entity and society as required under the social contract. The major shortcoming of conventional accounting is that it is restricted to only monetary aspects. Gradually, wisdom is drawing that the effect of environmental resources should be incorporated in the business reporting functions of corporations (Gupta, Thakar and Surayya, 1998, p.80).
Exaggerated Optimistic Picture of Economic Performance

The picture of economic performance as disclosed by the corporate accounts and national income accounts is not true and fair but inflated. National Income Accounts prepared without adjusting for the depletion and degradation of natural and environmental resources provides an overly optimistic picture of economic performance, in that it omits the effects of environmental externalities on current well being (Ravi Sunder, M., 1997, p.654). Some countries may show negative rate of economic growth, if environmental information is incorporated in their national income accounts.

Violation of Matching Concept

By not accounting for the environmental externalities in accounts, the concept of matching the expenses and incomes is violated under the conventional system of accounting. The ability to picture relationship between input and output is degraded (Ravi Sunder, M, 1997, p.654).

Worst Polluter appears more successful

Worst polluters appear more successful under conventional accounting system. Environmental friendly processes are costly and also it is costly to make products environmental friendly, worst polluters by not using these environmental friendly machines and also by not producing
LIMITATIONS OF TRADITIONAL ACCOUNTING SYSTEM

- No Control over capital and revenue environmental expenditure
- Record of Monetary Transactions only
- Natural and Environmental Resources are considered as free
- Exaggerated Optimistic picture of Economic performance
- Records everything except which makes our life worthwhile
- Violation of matching concept
- No provision to meet challenges
- Worst polluter appears most successful
- Value added statements disclose inflated value
environmental friendly products are able to retain their costs at the minimum level and in turn produce high profits. Other things being equal, the worst polluter appears to be the most successful, in the present system of accounting and consequently is able to raise additional resources from the investing public (Verma, 1994, p.361).

**Value Added Statements Disclose Inflated Value**

Value added statement prepared by using the Value Added Accounting (VAA) concept, without considering the impact of depletion and degradation in natural and environmental resources, gives inflated value-added. Therefore, it does not give the true and fair value added by the economic enterprise. Similarly, the rate of growth of a nation as depicted by its National Income Accounts (prepared without adjustment therein of depletion and degradation of natural and environmental resources) may be inflated.

**No Provision to Meet Challenges**

Because of threat of significant legal and financial liabilities, increasing pressure of regulations on the company, intense public scrutiny and media pressure, corporates may have to clean up the environmental sites which they have polluted/are polluting. So, adequate provision must be made in financial accounts to meet the challenges of environmental pollution. If we do not charge
adequate depreciation on man-made assets, we inflate profits and it results in the distribution of capital as dividend. Similar is the case with natural capital. At present we are not showing depreciation of natural and environmental assets as expense in our annual accounts. This results in inflated profits and distribution of natural capital as dividend.

Records Everything Except that which makes Our Life Worthwhile

The gross national product does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry, the strength of our marriages, the intelligence of our public debate or the integrity of our officials. It measures neither our guts nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country. It measures everything except that which makes our life worthwhile (Robert F. Kennedy, 1968, quoted in Gupta, 1997, p.3).

Natural and Environmental Resources are considered free

Traditional Accounting system by not recording the cost of natural and environmental resources gives an indication, as these resources are free. But this is not the case. These resources are very precious. So there is a need for adjustment in traditional accounting system.
No Control Over Capital & Revenue Environmental Expenditure

These days corporates have to incur substantial environmental expenses. But the traditional accounting system lacks a way of their proper recording. So the detailed information about capital and revenue environmental expenses which the organisation incurs is not available to the management. Hence, the management can do nothing to control them. Most of environmental costs are hidden or embedded in overhead accounts.

Accountant and Management Accounting

Accountants are also held responsible for the destruction of environmental and natural resources. The accounting profession in the past has been reprimanded in the environmental press for not being equipped to provide good environmental or other internal cost information (Roberts, 1993, p.5). Some commentators have gone as far as holding accounting partially responsible for some of the environmental disruptive activities that business organisations have undertaken because of its inability to fully disclose the impact commercial operations have on the physical environment (Beams and Fertig, 1971, p.38).

With the change in the role of corporate entities, the importance of accountant as the business number cruncher has also changed. His role is being redefined as that on analyst, participating in and contributing to:
- Strategy formation to ensure sustained competitive advantage, achieved by providing customer and shareholder value.
- Allocation decisions to ensure the availability of environmental resources, finance, technology, people, knowledge, processes and products to achieve the determined strategies and
- the management of change in a world of uncertainty, complexity and speed (Barbera, 1994, p. 23).

One area, which has received limited attention from accounting academicians, is that of environment related management accounting i.e. accounting information for management support. The accountants must now consider that the environment is a non-renewable precious resource, more important than any other resource available to the firm and ensure that this resource is used in the most optimum way.

**Concept of Environmental Accounting**

Environmental Accounting also known as sustainability accounting and full cost accounting, is a technique of providing information about the impact of organisational activities, products and services on the natural and environmental resources through some adjustment in financial accounts. This concept of environmental accounting is developing on the basis of concepts of agency theory and social contract.
Environmental accounting embraces in it three different terms (EPA, 1995, p.28):

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

- Environmental accounting in the context of financial accounting usually refers to the preparation of financial reports for external audiences using generally accepted accounting principles.

- Environmental accounting as an aspect of management accounting serves business managers in making capital investment decisions, costing determinations, process/product design decisions, performance evaluations, and a lot of other forward looking business decisions.

Environmental Accounting is the accounting that includes environmental goods and services. It is one branch of environmental economics with two main distinguishing features. First, it generally involves assigning monetary values to environmental goods and services, which are valuable but not traded in markets; a process known as shadow pricing. Such estimates are often highly uncertain, quantified in terms with no fixed conversion to money, or
only partly or poorly quantified. Second, it deals with the reporting of environmental information in financial accounts (Ravi Sunder, M., 1997, p. 655).

Environmental Accounting as the accounting for the cost of present, past and future environmental activities (any activity which could or will affect the physical or natural environment) is gaining important place in accounting literature day by day. The major difficulty in environmental accounting is the measurement of the money value of environment polluted and natural resources consumed in monetary term.

Environmental Accounting can be defined as a process of economically recognising the exhaustion of natural or free goods and services, in the process of making economic goods and services, analysing reciprocally and balancing the benefits rendered by the environment to a corporate citizen and the costs and benefits tendered to the environment by a corporate citizen (Gupta, Thakar, Surayya, 1998, p. 83).

Environmental Accounting involves the integration of scientific and technical environmental information with financial information about items such as expenditures, liabilities, asset valuation and future profitability (ICAEW, 1992, p. 2).
Environmental Financial Accounting can broadly be defined as the process of communicating the social and environmental effects of organisation's economic actions to particular interest groups in society and society at a large (Gray et. al, 1987, p.ix).

Environmental Accounting is the method of improving decision making in recognition of the increasing environmental challenges and opportunities facing the business today. It does this by identifying hidden or misallocated internal and external environmental costs and allocating them to particular products or process. Environmental Accounting provides firms with truer costs of their products and processes and thereby leading to better decision and sustained profitability (Eco Strategy, 1997, p.1).

Environmental Reporting

"Environmental Reporting means incorporation of environmental issues into the annual reports of corporate entities. It denotes voluntary and involuntary disclosures by corporate entities of the impacts of its activities on environment" (Parmanik, 2002, p.4).
Need for Environmental Accounting and Reporting

Various rules, regulations and laws have been enacted all over the world for the protection of natural and environmental resources. But the results are not very encouraging. The accounting profession in its efforts for the preservation of natural and environmental resources is working for the development of environmental accounting. It is thought that environmental accounting will go a long way in the preservation of natural and environmental resources in a most effective way. The main objectives of environmental accounting are:

To Reflect the True Rate of Economic Growth

To express the true rate of growth of the economy at the national level as well as true value added by corporate entities at corporate level is one of the main objectives of environmental accounting and reporting. This will help the policy makers in designing appropriate national and corporate policy.

To prevent Wasteful use of Natural and Environmental Resources

Disclosure of environmental information under environmental accounting will help in identifying wasteful use of natural and environmental resources. This disclosure will help in preventing the wasteful use of natural and environmental resources.
To Express Awareness

Environmental accounting will express how conscious the nation and its citizens are about the importance of natural and environmental resources.

To Ensure Justice

The worst polluters are benefited under the conventional accounting system. Environmental accounting will help in providing justice to the society if the polluters are punished. Environmental accounting will help in identifying the worst polluters and these worst polluters can be compelled to pay for the remediation (clean up) of the environment polluted by them.

To Gain Competitive Advantage

It will help the corporates in choosing environmental friendly products and machinery and enable the corporate entity in gaining competitive advantage with customers by demonstrating that the organisation is environmental friendly like body shop in U.K. (Venu, S., 1997, p.650).

To Ensure Better Environmental, Financial Performance and Significant Benefits to Human Health

Accounting for environmental costs will help in significantly reducing or eliminating many environmental costs while at the same time ensuring better environmental
performance, significant benefits to human health as well as business's commercial success.

INFORM, a non-profit organisation, studied 29 companies in the organic chemical industry in 1985 and again in 1992. It was found that the chemical plants with some type of environmental costs accounting system had three times as many P2 (pollution prevention) projects as compared to the plants with no cost accounting system. The study also showed that the average annual savings per P2 project in production facilities, where data were available, were just over $351000, which equaled an average savings of $3.49 for every dollar spent. This study also found that there was not only substantial savings and returns on investment documented for P2 project, but an average of 1.6 million pounds of waste were reduced for each project (EPA, 1995, p.3).

To Ensure more accurate pricing of products and Services

The huge environmental cost both of revenue and capital nature is incurred by the industry these days for the protection and development of natural and environmental resources. The conventional accounting lacks a proper system of recording these costs. Most of the environmental costs are hidden or embedded in overhead accounts thereby leading to inaccurate pricing of products and services. Accounting
for environmental costs will help in more accurate pricing of products and services.

**Internal Drivers: Employee Awareness**

Much of the debate on environmental reporting has focused on public reporting. However, these reports are also read by an internal audience and serve the informed debate within the company. This can set the agenda and highlight the areas for improvement. The environmental issues can drive performance through traditional business methods. The recognition and management of any environmental risks or liabilities, resource efficiency, and good environmental management may well lead to bottom-line improvements. The production of an environmental report is one of the most effective methods of galvanising any environmental improvement. The 1997 survey of Environmental Reporting from KPMG stated that the production of an environmental report can:

- Produce a stronger thrust to improve environmental performance due to the public commitment.
- Help identify areas where management systems need to be strengthened, as a result of internal audit, which is part of the reporting process.
- Increase employee awareness of the policies and goals of the company.
Risk Management

The effective management of risk in all its forms is also deriving companies to account and report for environment pollution and control of pollution. It is helping the companies to identify potential environmental risks. The environmental reporting can be used to attempt to limit risk to reputation and public relations.

External Drivers: Civil Society/Non-Government Organisations

Environmental reporting originated as a response to increased public concern over corporate environmental performance. NGOs such as single-issue groups, trade unions, sections of the media and consumer groups cast themselves in the role of articulating public concern on environmental matters. For NGOs environmental reporting is fundamentally an issue of corporate accountability. They argue that a company's accountability extends beyond its shareholders to its stakeholders. Stakeholders have been defined by the United Nations as 'all those people, or groups, affected by or who can affect the activities of an organisation'. The rise of civil society has increased the pressure on corporate communication strategies to evolve beyond existing forms such as annual reports and accounts for shareholders, to reports that address broader concerns such as the environmental impact of the company. Some companies are
NEED OF ENVIRONMENTAL ACCOUNTING AND REPORTING

- Helps to express true rate of growth and true value added
- Helps in gaining competitive advantage with customers
- Increases awareness about importance of natural and environmental resources
- Discloses wasteful use of natural and environmental resources
- Discloses consciousness of a nation about the importance of natural resources
- Polluter can be compelled to clean the environment
- Accurate costing and pricing of products and services
directly engaged in dialogue with environmental NGOs as part of their environmental management strategy.

In particular, the risk to reputation of a concerted campaign by a large NGO has acted as a catalyst for many companies to disclose information on their environmental policies and impacts in an attempt to protect and enhance their reputation. Some companies use their environmental reports as a positive marketing strategy to open up new markets and attract quality recruits.

Environmental stewardship is now part of the wider debate around corporate social responsibility (CSR). The CSR is concerned with labour standards and company's wider relationships with local communities as well as environmental stewardship. The external pressure on business as a whole, and multinational enterprises in particular, has been in place for over a century but has grown significantly in the past decade. Major drivers include the backlash against globalisation and limits to the jurisdiction of individual states and society.

Financial Sector

Fund managers are starting to use environmental reports as one of the elements in their financial analysis of companies. Financial markets have hitherto generally only
recognised negative environmental performance. Analysts have traditionally only been concerned about potential environmental liabilities where they are material to the business financial performance, and the subsequent regulatory cost of poor performance. It is the emergence of ethical investment funds, which has made environmental performance of more interest to the analyst. It is still only a small sector of the financial market, as a whole. But there has been a tremendous growth in ethical investment in the past two years.

Recently, there has been much discussion of the suggested advantages of voluntary disclosure of financial environmental information (Belkaoui and Karpik 1989, Gray, 1990). It has been suggested that this type of information would result in improved market efficiency. From a legal perspective, the full disclosure of environmental information could be regarded as a part of the corporate management’s social obligations, and therefore as a defence by management against prosecution for negligence (Gibson and O'Donovan, 1994, p.2). Lastly, this type of information is compatible with other information that is available to, and used by, external parties for their full analysis of the business organisation.
Necessary to Legitimise Existence

Legitimacy theory suggests that if the legitimacy of an industry sector is threatened, then organisation within that industrial sector will respond by reporting more positive information on its activities. This legitimacy theory is based on the belief that the disclosure of information legitimises the actions of the corporations (Preston and Post, 1975, Honger 1982, Guthrie & Parker, 1989; Patten, 1992). Corporate entities operate in a society and there is an implied social contract between the corporates and the society that the corporates will perform socially desirable actions.

Any organisation— and business is no exception— operates in a society via a social contract, expressed or implied, whereby its survival and growth are based on:
- the delivery of some socially desirable ends to society in general and
- The distribution of economic, social or political benefits to groups from which it derive its power (Shocker and Sethi, 1974, p.64).

With the change in the role of corporate entities from merely economic entities to socio-economic entities, the sphere of corporate legitimacy has also widened, until relatively recently legitimacy was considered only in terms
of economic performance. As long as firm is successful (profitable), it was rewarded with legitimisation (Patten, 1992, p.47). Now a firm is required to legitimate its action not only in terms of economic performance but also in terms of social performance. Now a day, corporate perform a number of socially desirable goals and report about these to the society through their reporting system. Therefore, to legitimise its existence, a firm has to report to the society about the various socially desirable goals it performed. Disclosure of this information is a means to communicate to society that the firm is a good corporate citizen.

Social (and therefore environmental) reporting can serve three major purposes (Gutherie and Parker, 1990, pp.159-175).

1. Providing a comprehensive view of the organisation and its resources.
2. Providing a constraint upon socially irresponsible corporate behaviour.
3. Providing positive motivation for the corporation to act in a socially responsible manner.

The basic role of environmental and social financial accounting is 'the process of communicating the social and environmental effects of organisations economic actions
to particular interest groups in society and society at large (Gray et.al, 1987, p.ix). Accounting generates the required information and reporting communicates the same to the stakeholders.

**Developments Abroad**

At international level, a lot of efforts have been made for the development of environmental accounting. Although no statutory international accounting standard on environmental accounting has been issued yet, guidelines on environmental accounting have been issued by various accounting associations and committees in U.K., Europe and America etc.

Federation des Experts comptables Europeans (FEE) in its document "Review of International Accounting Standards for Environmental Issues" published in May 1999 reviewed IAS 36 on impairment of assets, IAS 37 on provisions, contingent liabilities and contingent assets and to some extent IAS 38 on intangible assets to analyse the impact of environmental issues under following six heads:

- Disclosure of environmental costs and liabilities
- Criteria for capitalising environmental expenditure.
- Recognising provisions for environmental costs.
- Disclosure of environmental risks and uncertainties
- Impairment of assets, including damage to our property
- Fines and penalties, pollution permits and emission right
This document necessitated the need for change in IAS 1, which deals with the disclosure of accounting policies and IAS 5, which stipulates the items to be shown in financial statements. It is stated that these standards should require the separate disclosure of environmental costs and liabilities, where these are material to the enterprise. Information is considered as material, if it could influence the economic decisions of legitimate users of the financial statements. Where environmental costs are separately disclosed, the accounting policies should state what these costs represent and the accounting treatment adopted. Reference may also be needed to the way in which environmental liabilities and impaired assets have been treated. Where environmental costs are disclosed, the way in which these costs are identified should also be explained to ensure that comparisons between enterprise don't result in misleading conclusions. Separate disclosure of fines and penalties and environmental taxes is required where these are significant.

Criteria for capitalising Environmental Expenditure

IAS 16 which deals with recognition and measurement of property, plant and equipment including additions to existing assets, permits expenditure on assets to be capitalised only when it is probable that enterprise will
acquire increased economic benefits. Further paragraph 27 of IAS 16 explain that, if the carrying amount of the item already takes account of a loss in economic benefits, subsequent expenditure to restore the future economic benefits expected from the asset is capitalised. It needs to be classified that, even though its increase in future economic benefits is produced, subject to an impairment test, such expenditure would qualify for recognition of an asset. Depending on the circumstances, expenditure to mitigate environmental damage and to avoid future costs, which may be required to be incurred, where new laws would require an enterprise to incur such costs may be regarded as giving rise to a form of future benefits.

Recognition and Measurement of Provisions for Environmental Costs

IAS 37 which deals with provisioning for liabilities should provide more specific guidance to ensure that environmental liabilities that are contingent on an uncertain future event are recognised if it is probable that they will arise and that, where it is not possible to estimate the amount of a liability, its nature and existence are disclosed.
IAS 37 requires that a provision should be recognised when an enterprise has a present obligation or constructive obligation as a result of a past event which can be reliably estimated and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation. Clean up costs and penalties for unlawful environmental damage are mentioned in paragraph 19 of the standard as examples of obligation that would lead to such an outflow of resources, regardless of the future actions of the enterprise.

Where problems of uncertainty, as regards the timing of clean up or technology available, prevent the amount of the obligation being measured with sufficient reliability, the IAS 37 requires a contingent liability to be disclosed.

Given that many environmental liabilities arise over a long term and are therefore difficult to determine because of uncertainties about future legislation, the extent and timing of clean-up that will be required and the technology available, a provision may not be recognised under the strict criteria as in IAS 37 even though it is probable that the expenditure will be necessary. In such cases, it is important that the existence of contingent liabilities should at least be disclosed.
Appendix C of IAS 37 provides some examples to illustrate how the standard applies in various circumstances such as cleaning up contaminated land or the adoption of preventive environmental measures such as the fitting of smoke filters. Admittedly the need to fit smoke filters is a cost of doing business in the future and, to that extent, should be matched against future revenue. However, in the case of smoke filters that are not fitted by the effective date of the relevant legislation, it seems counter intuitive that this is treated as the absence of an obligating event, and the provision is only recognised for an obligation to pay fines or penalties. In any case, an enterprise would normally wish to adopt a more positive step of recognising a provision for fitting smoke filters, particularly if it intends to take such a measure within the foreseeable future.

Narrative Disclosures

International Accounting Standards Committee (IASC) framework for the preparation and presentation of financial statements while summarising the objectives of financial statements refers to the notes and supplementary schedules which may be in narrative form and "may include disclosures about the risks and uncertainties affecting the enterprise and any resources and obligations not recognised in the balance sheet." Depending upon the nature of the
business, the framework should mention matters that may be relevant including environmental protection costs and potential environmental liabilities, to the extent that material risks and uncertainties exist.

**Environmental Impairment - Damage to own property**

Impairment means comparing the carrying amount and recoverable amount of an asset and stating the assets in the books at their recoverable value. IAS 36, on the impairment of assets, deals with this issue. Paragraph 9 of IAS 36, enumerates a number of indications of possible impairment. These include significant changes with an adverse effect on the enterprise that have taken place during the period or will take place in the near future in the technological, market, economic or legal environment in which the enterprise operates. Although the list is described as being "not exhausted" environmental factors both internal and external to the enterprise, such as contaminated land, should be mentioned as a possible indicator of impairment. IAS 36 does not specifically address the problems involved in measuring the related impact of such environmental factors on asset values. Guidance Notes in this area need to be developed.

IAS 36 attaches little importance to the relevance of management intent in determining the appropriate accounting treatment. A bias against such factors is
difficult to justify in the case of environmental impairment where an enterprise's plan for repair or abandonment is a key consideration. A broad decision to become more environmentally friendly with the regular publication of an enterprise's policy, targets and achievements is likely to lower the threshold at which an asset would be considered to be impaired.

Measurement of an environmentally impaired asset may be effected by:

- Delayed disposal of the asset, due to the need to deal with contamination, resulting in clean up costs and increased interest charges.

- Uncertainties due to the possibility of improvement in related technology or changes in legislation and risks arising from the stigma effect including mitigation risk to adjacent sites, deterring potential purchasers and resulting in a more restricted market.

- Other issues, such as concepts of materiality in the case of fines and penalties and whether pollution permits and emission rights might qualify as intangible assets.

Two other topics that may need particular attention in relation to environmental issues are the treatment of:
- Fines and penalties and
- Pollution permits and emission rights.

Separate disclosure would be appropriate where fines or penalties are significant. An item of a relatively small amount that may not be material in itself may be significant in its impact on a company's reputation and public image. As the IASC framework notes, the nature of information mentioned above is sufficient to determine its relevance. Environmental fines or penalties may need particular emphasis in this respect. A low level of environmental expenditure may be material if the context would lead the user to expect the item to be of substantially greater amount.

IAS 38 on intangible assets puts a 20 year ceiling on the amortisation of goodwill and other intangible assets. Unfortunately, it did not clarify whether assets like pollution permits and emission rights, that are sometimes used in environmental area, would qualify for recognition as intangible assets. Such assets would appear to meet the criteria for recognition, in that they are likely to result in future economic benefits to the enterprise, which would otherwise be unable to operate and have a cost that can be measured reliably. Paragraph 108 of IAS lists classes of assets for disclosure purpose, such as brand names,
publishing titles, license and franchises. Intangible assets relating to environment would presumably be treated as separate class. IAS 39 does not apply to financial assets but pollution permits and emission rights would not appear to be excluded on these grounds. It would be helpful to clarify this point.

In America, Financial Accounting Standards Board (FASB) has issued several authoritative guidance documents on environmental accounting. Besides this, Environment Protection Agency (EPA) is carrying on the project on environmental accounting for the last more than 10 years. The following authoritative guidance documents on environmental accounting have been issued in America:

I. Statement No. 5 states that under "Accounting for Contingencies" a liability should be recognised in the financial statements if a loss is probable and the amount is estimable. If it is not estimable which is often the case, it must be disclosed in the footnotes (FASB, 1997, p.105).

II. FASB Statement 14 "Reasonable Estimation of the amount of a Loss" states that a liability must be recorded when a range of estimates can be determined (Ibdi., p.106).
III. Emerging Issues Task Force (EITF) 90-8 required that all environmental contamination costs be expensed as incurred unless costs extend the life or increase capacity of the property, costs mitigate or prevent future environmental contamination (that would otherwise occur), or costs are incurred to prepare a property for sale (Ibid., p.110).

IV. EITF 93-5 concluded that an environmental liability must be evaluated independently from any potential claim for recovery. This recovery claim can reduce the liability only if it is probable. Securities Exchange Commission (SEC) standards state that it is appropriate to net the asset and liability if the assets recovery is recognised as probable (Ibid., p.108).

Inter-governmental working group on International Standards on Accounting and Reporting (ISAR) of UNCTAD issued some guidelines on disclosure of environmental information in June 1994 (UNCTAD, 1994, pp.31-32). ISAR conclusions have divided environmental reporting into two parts:

1. Environmental disclosure by Board of Directors in their report/discussion in Directors' report.
2. Accounting treatment and reporting.
In the first part, disclosure regarding environmental pollution policy adopted and pursued by reporting entity as well as material proceedings under the environmental laws either by way of management note or by inclusion in Directors' Report is required. Similarly, financial effect of environmental protection measures on capital expenditures and earnings should be more appropriately covered in notes forming part of financial statements. Capitalisation of environmental protection expenditures, accumulation of such capitalised expenditure unto the end of accounting period and policy of amortisation thereof are exclusively financial matters and therefore, should be covered by way of note to the financial statements. ISAR conclusions simply recommend disclosure of accounting policies for (i) recording liabilities and provisions (ii) setting up catastrophe resources and (iii) disclosure of contingent liabilities.

Institute of Chartered Accountants in England and Wales (1992) also recommended a framework for environmental reporting which requires disclosure of corporate environmental policy in detail, quantitative disclosure of the corporation's environmental impacts, contingent liabilities funds and penalties levied under environment protection laws, rehabilitation costs of hazardous waste disposal sites, costs incurred on disposal of wastes, future costs
utilisation of equipment used to reduce pollution, recycled by-products and reduced energy and raw material consumption (UNCTAD, 1994, p.9).

Accounting Advisory Forum (AAF, 1995) issued an advisory document to European Commission regarding "Environmental issues in Financial Reporting" in December 1995. This document was issued with a view to stimulate discussions among standard-setters, prepares, users and auditors of accounts in member states on the subject of environmental issues in financial reporting.

Besides giving guidance on which items of costs are to be shown as environmental costs and the treatment of revenue and capital environmental expenditures, this document gives detailed guidelines regarding disclosure of environmental information. Disclosure of environmental information in this document is classified into four categories i.e. general disclosure, disclosure in the balance sheet, disclosure in the notes to the accounts and disclosure in the annual reports.

**General Disclosure**

1. Environmental issues related to finances should only be disclosed in the accounts and annual reports to the extent that they are material to the financial performance or financial position of the undertaking.
2. If member states have introduced accounting exemptions for small and medium sized companies. These exemptions would also be relevant for disclosure in relation to environmental issues (Ibid, p.10).

**Disclosure in the Balance Sheet**

Environmental provisions should be shown in the balance sheet under the caption "other provisions".

**Notes to Accounts**

- The valuation methods applied on environmental issues.
- Extraordinary environmental items.
- Disclosure and details of "Other provisions" in line with disclosure in the balance sheet stated above.
- Contingent liabilities, including narrative information in sufficient detail, so that the nature of contingency can be understood (Ibid, p.10).
- The amount of environmental expenditure charged to profit and loss account, analysed in a manner appropriate to the nature and size of business and/or the types of environmental issues relevant to the enterprise, as well as the amount of environmental expenditures capitalised.
- The amount of environmentally related costs including costs incurred as a result of fines and penalties for non-compliance with environmental regulations and compensation to third parties as a result of loss or injury
caused by past environmental pollution, if not already separately disclosed as extraordinary items.

- If other quantitative or qualitative environmental information is provided in a separate environmental report, a reference to this report should be given (Ibid, pp.10-11)

Disclosure in Annual Report

The following information could usually be given in the annual reports:

- When environmental issues are relevant to the financial position of the undertaking, a description of the respective issues and the undertaking's response thereto.
- The policy that has been adopted by the enterprise in respect of environmental protection measures.
- The improvements that have been made in key areas of environmental protection.
- An indication of government incentive related to environmental protection measures such as grants and tax concessions.
- The extent to which environmental protection measures, resulting from change in the future legal requirements that have already been enacted or substantially enacted into law, are in the process of implementation.
If other quantitative or qualitative information is provided in a separate environmental report, a reference to this report should be given (Ibid, pp.11-12).

Global Reporting Initiative (GRI, 1999) issued an exposure draft in March 1999 on Sustainability Reporting Guidelines. In this exposure draft GRI divided environmental information in the following nine parts:
- CEO statement.
- Key Indicators
- Profile and Financial Performance
- Policies of Organisation and Management System
- Stakeholder relationships
- Management performance
- Operational Performance
- Product Performance
- Sustainability overview.

Developments in India

Although no guidelines or Accounting Standards have been issued regarding accounting for environmental issues in India, yet following developments have taken place during the last few years regarding environmental reporting issues.
Bureau of Public Enterprises (BPE) vide its letter number BPE-1 (19)/ADV/F/69 made it obligatory for the central public enterprises to disclose the expenditure incurred by them on social overheads in the annual reports (Chander, 1992, p.34).

Similarly an amendment was made in the Companies Act, in 1988, through which the disclosure of information relating to "energy conservation" was made mandatory in the annual reports.

In 1991, Government of India announced that every company shall in the Report of its Board of Directors' disclose briefly the particulars of compliance with environmental laws, steps taken or proposed to be taken towards adoption of clean technologies for prevention of pollution, waste minimization, waste recycling and utilisation, pollution control measures, investment on waste reduction, water and other resource conservation (Kumar, 2002, p.77). The Companies Bill 1977 section 173 proposed that every company should disclose through its Board of Directors' Report the measures taken for the protection of environment.

In April 1993, a notification under the Environment (Protection) Rules, 1986, was issued requiring industries to submit an environment statement for the financial year ending on or before 30th September every year.
in a prescribed format to the concerned State Pollution Control Boards (Rajaraman, 1997, p.647).

NEED OF THE STUDY

A review of the empirical studies conducted in the field of environmental accounting and reporting reveals that no comprehensive study has been undertaken to examine the status of environmental reporting in the annual reports of the Indian companies. Besides this, no attempt has been made to know the perceptions of Chartered Accountants regarding environmental reporting. The perceptions of Chartered Accountants, being both the preparers as well as the auditors of accounts, are very vital. Therefore, this study has been undertaken with the following specific objectives:

1. To study the status of corporate environmental reporting practices by the corporate sector in India. The status of environmental disclosure was examined both in terms of quantity as well as quality of disclosure.

2. To study the factors determining the level of disclosure of environmental information in the annual reports of Indian Companies.

3. To study the perceptions of Chartered Accountants regarding various issues involved in environmental accounting and reporting.
4. To study the relative importance of various items of environmental accounting and reporting.

ORGANISATION OF THE STUDY

This study has been divided into nine chapters including the present introductory chapter. In chapter two Scene of Environmental Accounting An Overview has been discussed. In chapter three, the empirical studies in the field of environmental reporting have been critically reviewed. Chapter four explains the data base and research methodology used in this study. In chapter five the status of environmental reporting in the annual reports of Indian companies has been discussed. In chapter six, the various determinants effecting the status of environmental reporting has been discussed. Chapter seven describes the perceptions of Chartered Accountants regarding the various issues relating to environmental accounting and reporting. Chapter eight describes the perceptions of Chartered Accountants regarding the contents of environmental accounting and reporting. In chapter nine Resume. In this chapter the summary, findings and conclusions of the study is presented.