MONOGRAPH

on

Sustainable Development, Sustainability & the Cost and Management Accountant

INDIA
CORPORATE
WEEK

December 14-21, 2010

Sustainable Business

ICWAI

The Institute of Cost and Works Accountants of India
(Set up under an Act of Parliament)

MONOGRAPH
on
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ICWAI

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सत्यमेव जयते

भारत सरकार
कारपोरेट कार्य मंत्रालय
नई दिल्ली
Government of India
Ministry of Corporate Affairs
New Delhi

December 10, 2010

MESSAGE

Ministry of Corporate Affairs, Government of India is celebrating second India Corporate Week" during December 14th - 21st, 2010. The theme of this year is "Sustainable Business". Various programme, seminars and workshops have been planned as a part of commemoration highlighting the progress Indian Business has made in the corporate journey.

As a unique initiative. The Institute of Cost and Works Accountants of India (ICWAI) is bringing out a monograph titled "A Primer on Sustainable Development, Sustainability & the Cost and Managmenet Accountants", a compilation on the idea based on the available material in a question answer format. I compliment the Institute and Mr. A N Raman, a Practicing Cost Accountant, Central Council Member, ICWAI and Vice President, South Asian Federation of Accountants for his contribution in publishing this monograph in a short time for release during "India Corporate Week 2010".

I express my best wishes to ICWAI for organising the programmes and publishing the monograph.

(R. Bandyopadhyay)

FOREWORD

Ministry of Corporate Affairs, Government of India has decided to celebrate third week of December every year as "India Corporate Week". During this year the events would be held during 14th -21st December, 2010 as second edition of India Corporate Week. The theme of this year is "Sustainable Business". ICWAI is participating in these celebrations by organising various programmes and publishing the monographs on relevant subjects.

This monograph on "A Primer on Sustainable Development, Sustainability & the Cost and Management Accountant" has been compiled by Mr. A N Raman, a Practicing Cost Accountant, Central Council Member of ICWAI and Vice President, South Asian Federation of Accountants in an easy to understand format in time for publication before the opening ceremony of this year celebrations of India Corporate Week. I express my thanks to Mr. Raman for his contribution towards this monograph for the benefit of the practitioners of the hugely important discipline of "Sustainability".

I expect the readers to draw inspiration from this monograph for preserving the resources of the mother earth.

With best regards,

New Delhi
8th December , 2010

Brijmohan Sharma
President

THE PREFACE

Dr. C.K. Prahlad emphatically said[1], "There's no alternative to sustainable development", and further added, "Smart companies now treat sustainability as innovation's new frontier". Peter Senge calls this "the necessary revolution"[2].

We have indeed come a long way from the days of Milton Friedman who said, "The social responsibility of business is to increase its profits"[3]. Totally contrarian views have been expressed by both Henry Mintzberg[4] – "Social responsibility represents our best hope, perhaps our only hope… Without responsible and ethical people in important places, the society we know and wish to improve will never survive", and Charles Handy[5] – "We should, …, measure success in terms of outcomes for others as well as for ourselves".

'Sustainable Development' has been defined by the World Commission on Environment & Development, 1987, as, **"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.**

As Lincoln's said, ***"You can not escape the responsibility of tomorrow by evading it today"***.

The Approach Paper to the 11th Five Year Plan "Towards Faster and More Inclusive Growth"[6], while expressing optimism about India's **growth prospects** also expressed concern at the insufficient spread of benefits of growth. Acknowledging the need for faster growth as a basic requirement, it emphasized that the growth process should be much more **'inclusive'** - that raises incomes of the poor for faster reduction in poverty, generates expansion in good quality employment, and ensures access to essential services such as health and education for all sections of the community.

Aggravating these inequities is the tremendous strain imposed on nature's life support systems. …….in less than half a century, the world has lost a fourth of its topsoil and a third of its forest cover. In the last 35 years alone, a third of global bio-diversity was forfeited. Scientific evidence today confirms that humanity's demand on the planet's living resources now exceeds its regenerative capacity by a wide margin. It now takes the Earth one year and four months to regenerate resources used in a single year. And if this continues apace, the equivalent of two Earths will be needed to support humanity's resource requirements by mid 2030s. **The current global economic model is therefore clearly unsustainable"**. – Excerpts from Speech by the Chairman of ITC Ltd.[7].

Leading global corporations, including some from India, are embracing sustainable business development as a strategic framework for integrating their business enterprises, creating innovative solutions to the complex needs and requirements of business requirements of the business environment, and thinking strategically about leading change[8].

While India is often characterized as an emerging economic super power, it **suffers from acute economic and social disparities**. However, growth and continuance of business in the longer term, while targeting high levels of economic growth, cannot be achieved at the cost of our already fragile environment and weak social fabric.

The Cost and management Accountants have a great role to play in design and implementation of sustainable business strategies This monograph is intended to answer some of the basic questions that normally rise in the minds as to how exactly the professional cost and management accountants can be a part of the sustainability movement. **This document should also be seen as a continuum of the other publication of ICWAI on Sustainability Makes Business Sense.**

Sustainability is a constantly expanding field which appeals to vast section of the populace, and represents a major growing body of knowledge. The interested reader is advised to look at this material as an introduction to an extremely interesting and contemporary field of study and pursue further for greater insights.

A.N. Raman &
Manivannan R.Rajan
Practicing Cost Accountants

"There's enough on this planet for everyone's needs, but not for everyone's greed". – Mahatma Gandhi.

1. What is Sustainable Development ?

Numerous definitions have been proposed for sustainable development.

Sustainable development is a process of change in which exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and embrace both current and future potential to meet human needs and aspirations.

— Brundtland Commission 1987

'Sustainable Development' has been defined by the *World Commission on Environment & Development, 1987*, as, "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

"Sustainable Development is a process of achieving human development in an inclusive, connected, equiparable, prudent and secure manner". – Gladwin and Kennelly 1995.

2. What is then Sustainability?

The expression sustainability in the paradigm of sustainable development is more enterprise contextual.

Sustainability in a business context is focussed on "how an organization can successfully survive without compromising the ecological, social and economic survival of its current and future environment". – Elisabet Garriga and Domenec Mele.

"A sustainable business enhances long-term shareholder value by addressing the needs of all its stakeholders and adding economic, environmental and social capital through its core business functions". – CII – ITC Centre of Excellence for Sustainable Development.

Sustainability means that we pay attention to the entire life cycles of our products and to the specific and changing needs of our customers. ——Business Council for Sustainable Development, 1992.

The last definition of sustainability by bringing in the framework of life cycle strikes a direct rapport with the role of cost and management accountant.

3. Is Sustainability a business opportunity ?

Understand sustainability like what we did for quality movement 30 years ago. There was lot of debate that quality will increase costs. But what really happened was when quality management processes were put in place costs came down. Sustainability will be the next quality challenge. It is going to drastically reduce costs and increase consumer acceptance. Sustainability should not be looked at from a regulation oriented compliance thinking but as an opportunity for breakthrough innovation.

— C.K.Prahlad Management Guru

The above emphasis of the Management Guru on the direct link between Sustainability and Cost Management brings the cost and management accounting profession to the centre stage of the domain.

4. India is not a major polluter . Why do we need sustainable business strategies ?

We need not start on sustainability frame work from a pollution view point. We will start from an end that we face shortage of resources. If we look at a washing machine that recognises when electricity was cut off and starts the washing cycle from there and not the beginning then it saves energy, it saves water and it is acceptable in India because it is sustainable development and it is good business. The beauty of this is , if you innovate in India we can take those innovations to the global markets. This is how we understand sustainability.

As we start including additional 4 billion people into the process of globalisation we are going to put a lot more pressure on sustainable growth. Therefore inclusive growth and sustainability are joined at the hips. In fact , what inclusive growth and sustainability force us to do is to recognise how to do more for more people with less.

— C.K.Prahlad Management Guru

The above setting from Mr C.K.Prahlad contains the seeds of making our sustainability model a global one leading to the design of products innovatively reducing the total life cycle cost.

5. What is the history of Sustainable development process ?

In 1919 ILO commences concerns after World War I to discuss about social responsibility on humanitarian considerations. Declaration of ILO principles in 1944 ranging from freedom of bonded labour to occupational safety and health, freedom of association etc.

Addition of environmental concern in 1960 due to relentless development efforts of the West rooted in greed and thoughtless degradation of resources. Formation of Club of Rome in 1968 to develop understanding on the finite nature of earth resources . Resulting in 1972 Report of the Club of Rome project on the Predicament of the Mankind

1972 conference of the United nations and the Stockholm declaration:

“ The natural resources of the earth , including air, water, land, flora and fauna and especially representative samples of natural ecosystems must be safeguarded for the benefit of present and future generations through careful planning or management a appropriate.

The discharge of toxic substances or of other substances and the release of heat , in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon eco systems.

— Stockholm Declaration 1972

1983 efforts of Perez de Cuellar and the constitution of the Brundtland commission. Commission expressing concern on the rate of destruction outstripping scientific abilities to resolve them and the need for global strategies for more sustainable development paths. Recommended a conference on Environment and Development leading to the earth Summit in Rio de Janiro in 1992.Rio summit brought into its fold both environmental and social concerns resulting in Agenda 21. The Rio Summit was also followed by a UN Conference resulting in the formation of KYOTO protocol and commitment of the leading nations to bring the green house emissions to 1990 level.

Again in 1999 Kofi Annan of UN made the world embrace Global Compact to bring in the business world and the private sector thus making it an agenda of the business and not only the Government. The World Summit on Sustainable development of Johannesberg in 2002 brought a commitment from all nations to involve the business community and all stakeholders to have a serious agenda on the following three aspects of sustainability :

- Social Responsibility
- Environmental Responsibility
- Economic Viability.

Following the Global Financial Crisis of 2008 and the melt down the G 20 nations discussed the same subject in the context of changed economic reality of the world and call for inclusive and sustainable growth. The emerging nations and developing nations need to grow through only exploitation of resources and the developed nations cannot put brakes on this fearing their competitive disadvantage.

6. What is a "Socially Responsible Investment" in the context of sustainability framework ?

"Socially responsible investment" (SRI) is a general term that refers to any investment behavior where an investor evaluates, in addition to evaluating financial aspects including profitability and financial soundness, how an investment target company is addressing environmental issues and social aspects of its operation and then reflects the findings in making an investment decision. Recently, however, it is not only a fraction of investors who play a part, as was the case in the past, but organizations operating as central figures in the financial sector, including institutional investors (e.g., pension funds) and major investment management companies, are also embarking on socially responsible investment. The current size of funds in socially responsible investment is estimated at over 2 trillion dollars in the United States, taking up 10-odd percent of the nation's total funds invested1, and 336 billion Euros in Europe2 as well.

The cost and management accountant has to play a major role in evaluating whether the environmental and social factors have been integrated with the investment and plan and accordingly consider the economic viability of the capital expenditure or projects.

7. What is LOHAS and its relationship to CMA competencies ?

There is now a widespread awareness that a company's efforts in the area of environmental protection and CSR are not simply a cost factor but rather contribute to a higher evaluation score given to the company. Some true-life examples have been observed in Japan as well, where a company with a good environmental conservation record enjoyed a higher corporate value while those slow to act were treated negatively. Some people are beginning to develop a sense of values as a lifestyle choice that does not just focus on financial and social success but gives a higher priority to the environment and health. This idea, so-called LOHAS (Lifestyle of Health and Sustainability), has come under the spotlight and it is said that people who share it are shifting to socially responsible investment in their investment management.

This life style of health and sustainability (LOHAS) can cause a big shift in consumer behavior gradually and encourage a buying pattern in support of sustainability. Even in the recent world congress of accountants at Malaysia the organizers totally dispensed with usage of plastic cups for dispensing water and gave each participant an attractive water flask for collection of water and consumption. This behavior shift has to be captured by cost and management accounting profession in supporting the design of products at target cost for the target consumer segment.

8. How will LOHAS impact on SRI?

Many Governments including Government of India have been working at the government level to promote CSR since 2000. The Ministry of Corporate Affairs have issued a Voluntary of Code of Conduct on Corporate Social Responsibility. While the EU movement has had a direct impact on the promotion of environmental and social information disclosure , it is also helping socially responsible investment practices expand in Europe as a result of the EU's encouragement, as part of the CSR promotion, to incorporate in the management of pension funds attention to environmental and social issues. It is due to those factors that socially responsible investment, which used to be limited to only a part of the investor base, is spreading to and among common institutional investors . What this implies is: the need for environmental and social information as information for investment decision-making is now more common than ever.

This is a major challenge and fits in seamlessly into the role and competencies of the cost and management accounting profession.

9. What are the United Nations Principles for Responsible Investment?

On April 27, 2006, the UN Secretary General Kofi Annan announced the "Principles for Responsible Investment" at the New York Stock Exchange. These Principles, which require institutional investors to incorporate in their investment management attention to environmental, social and corporate governance (ESG) issues, were, upon announcement, signed by 33 institutional investors that manage a total of 2 trillion dollars, with pension funds from various countries among them. With the number of signatory institutions growing rapidly later on, the aggregate amount of invested assets of the institutions that had signed the Principles as of May 1 reached 4 trillion dollars3. Since the Principles include a requirement of incorporating in the investment analysis and investment decision-making process attention to environmental and social issues, the need for information on environmental and social aspects of investment target companies will presumably become greater than ever before.

Principles for Responsible Investment (Summary)

Environmental, social, and corporate governance (ESG) issues can affect the performance of investment portfolios. Applying these Principles may better align investors with broader objectives of society. Therefore, where consistent with our fiduciary responsibilities, we commit to the following:

1. We will incorporate ESG issues into investment analysis and decision-making processes.
2. We will be active owners and incorporate ESG issues into our ownership policies and practices.
3. We will seek appropriate disclosure on ESG issues by the entities in which we invest.
4. We will promote acceptance and implementation of the Principles within the investment industry.
5. We will work together to enhance our effectiveness in implementing the Principles.
6. We will each report on our activities and progress towards implementing the Principles.

(Source) United Nations, The Principles for Responsible Investment, 2006, http://www.unpri.org/

ESG knowledge and its embedding into design of strategies and business models will be the new challenge for the cost and management accountants.

10. What is a Carbon Disclosure Project ?

Actions are increasingly being taken internationally to request companies to disclose information on their efforts towards greenhouse gas emission reduction and climate change risk. One such global-scale effort to request companies to disclose information on climate change risk is the Carbon Disclosure Project (CDP). Launched with financial assistance from the British government, it is an ongoing project supported by institutional investors from the UK as well as various other countries. More specifically, the CDP is designed to inform investors of risks and business opportunities associated with climate change and inform the corporate management that shareholders have a high degree of concern about how climate change issues might affect the corporate value; with this intention, questionnaires are sent to leading companies in the world to ask about their management policies regarding greenhouse gases and about their emissions etc., and the response and analysis results are later publicly released. As a practice prior to sending questionnaires to companies, signatures are obtained from institutional investors in the respective countries as an expression of support; during the Third Survey that was conducted in FY 2005 (called "CDP3" for short), the number of signatory institutional investors reached 155, with their aggregate invested assets amounting to 21 trillion dollars. As the Project has grown year after year, the number of signatory institutional investors has also increased from 35 companies with 4.5 trillion dollars in assets in 2003, to 95 companies with 10 trillion dollars in 2004 and 155 companies with 21 trillion dollars in 2005, in conjunction with a rapid rise in the rate of response from companies as well, from 47% in 2003, to 59% in 2004 and 71% in 2005.

11. Are the Global Investors active in seeking information on sustainable development ?

Apart from the CDP, a network of institutional investors was established in the United States with the intention of promoting better understanding of the financial risks and investment opportunities posed by climate change. The activities of the network, named the "Investor Network on Climate Risk" ("INCR"), were initiated in November 2003 by ten major institutional investors with the aim of deepening the understanding of investors themselves about risks and opportunities that companies will take on as a result of climate change and telling companies about their existence. The activities of the INCR are coordinated by a non-profit organization called Ceres8, which forms a network with investors and non-profit organizations, and also has company members. Ceres also forms stakeholder groups including international NGOs to discuss climate change issues as well as other environmental, social and governance issues with companies. The aggregate amount of invested assets of the INCR-participating institutional investors is rapidly increasing, marking 3 trillion dollars as of 2005.

INCR is engaged comprehensively in a range of actions intended to mitigate investment risk associated with climate change, including: raising awareness of companies which the participating institutional investor members invest in, about the risks and opportunities associated with global warming; educating companies about policies and measures as well as target-setting; promoting actions of investors themselves in making climate change-related investments; encouraging companies to disclose information on material risks associated with climate change, and encourage governments to enact or enforce policies which support this disclosure9. The policies for these activities were developed as 10-point action plans at the Institutional Investor Summit meetings held in 2003 and 2005.

On the subject of disclosure by companies of climate change information, the Network also calls for all-around enhancement of information disclosure from multiple information media, as opposed to just calling for simple information disclosure. In other words, in addition to promoting disclosure by companies regarding climate change in their voluntary reports on sustainability, which are commonly called sustainability reports, the INCR is working to: prompt companies to report on climate change risk, focusing on the state of climate change risk and their policies and efforts, as well as performance information, and, further; promote disclosure of climate change risk information and emission information in their annual reports. Adapting to such growing needs for information disclosure on the part of investors, companies are becoming increasingly aware of climate change risks and opportunities, markedly among those operating in industries which climate change has close relevance to, including oil and gas, electricity and automobile.

The Cost and Management Accountants as value Reporters have a major role in compiling and ensuring the reporting of such globally relevant stakeholder information. International standards of discourse and Environment Management Accounting Guidelines of IFAC can be of major tool value in performing these roles.

12. Are the accounting bodies globally and in India active in the sustainability domain?

With the need among investors for environmental and social information becoming greater, companies are also accelerating their actions on information disclosure. As is the case in Japan, a practice of preparing independent reports, such as environmental reports and sustainability reports, is making progress in the West as a development in the area of environmental and social information disclosure, in which international guidelines released by the Global Reporting Initiative (GRI) and award systems of institutions in various countries, including the Association of Chartered Certified Accountants (ACCA), have played a significant role.

Aside from this development, some have also begun to incorporate environmental and social information into institutionalized disclosure to investors, such as disclosure in annual reports. The EU has recently issued proactive recommendations and directives in this regard, in accordance with which institutionalization is now underway in the respective EU countries. In the United States, there have traditionally been more specific provisions associated with environmental issues. The discussion paper on the "Management Commentary (review of operations by the management)," which the International Accounting Standards Board (IASB) released in 2005, also contains a reference to environmental and social information.

Institute of Cost and Works Accountants of India (ICWAI) has issued two management accounting guidelines relating to adoption of environment strategies by corporate and tools and techniques of environment reporting.

13. What developments are there in Europe relation to disclosure of environmental and social information?

UK has mounted action to develop Operating and Financial Review (OFR) reporting standards; the Accounting Standards Board (ASB) established the "Reporting Standard on the OFR" in 2005 to present principles for OFR preparation and its disclosure framework. Further still, the "implementation guidance" that accompanies the Reporting Standard on the OFR contains KPI disclosure case examples, among which carbon dioxide emissions and waste disposals etc. are mentioned in relation to environmental issues. In January 2006, the UK Department for Environment, Food and Rural Affairs (DEFRA) also released the "Environmental Key Performance Indicators," in which 22 KPI's relating to emissions to 23 Yoshinao Kozuma, Development of Environmental Accounting for External Reporting in the EU [title translated from the Japanese original] (Masao Kawano (editor and author), Creation and International Development of

EnvironmentalAccounting [title translated from the Japanese original]) (Moriyama Shoten, 2006) was used as a reference in writing this Section........air, water and land and to resource use are presented.

In France, the Commercial Code was partially amended by the 2001 Law on New Economic Regulations, as a result of which listed companies are now required to disclose in annual reports information on effects of their business activities on society and the environment. This amendment can be viewed as rather a reflection of the 2001 recommendation because it was implemented prior to the EU directive on "Modernisation and updating of accounting rules." The disclosure requirement is therefore provided for in a relatively detailed fashion. Specific items of disclosure are listed in a government decree, among which, in the area of environmental issues, are: (1) use of water, resources and energy, approach to achieving higher energy efficiency, status of renewable energy use, status of land use, emissions to the atmosphere, water and soil, noise, odor and wastes that have serious effects on the environment; (2) measures to mitigate effects on the ecological balance, natural environment and protected flora and fauna; (3) environmental assessment procedures; (4) steps for compliance with environmental laws and regulations; (5) expenses for environmental burden reduction; (6) environmental management structure; (7) provisions and compensations relating to environmental issues; (8) damages associated with the environment; and (9) information on items (1) to (6) above that concerns foreign subsidiaries.

In Germany, the Commercial Code was amended in 2004 to create a requirement of including non-financial performance indicators, such as information on clientele growth and on the environment and employees, in consolidated annual reports, as well as non-consolidated annual reports of companies with a large capital, to the extent necessary for an understanding of the company's business undertakings and position. This was done to follow the EU directive on "Modernisation and updating of accounting rules." These provisions are, however, simpler compared to the equivalents in the UK and France, with no specific items of required environmental information disclosure listed.

In the Netherlands, prior to an amendment to Part II, Chapter IX of the Civil Code that governs annual report requirements, the Financial Reporting Guidelines of the Financial Reporting Council was revised, in which the contents of disclosure under the Code are effectively prescribed, and the guidelines on CSR information to be disclosed in annual business reports was introduced as of 2003. The guidelines are divided into four parts, i.e., general, environmental, social and economic; items shown in the part of environmental issues contain environmental measures, consumption of resources including energy, water and materials, and impacts of business activities on the supply chain.

14. What developments are there in USA relation to disclosure of environmental and social information?

In the United States, it was during the 1970's when SEC regulations requiring the statement of environmental information, particularly information on environmental liabilities such as the pollution cleanup obligation, were introduced together with related guidance, after which ....information disclosure continued to be improved and enhanced from the 1980's throughout to the 1990's. This took place under the influence of large-scale soil contamination cases and strengthened environmental regulations, including the Super Fund Act. In other words: a situation already existed back then, where how an environmental issue is dealt with serves as an important piece of information in the investment decision-making process. As a recent development, the 2002 Sarbanes-Oxley Act had an effect of prompting thorough information disclosure by, for instance, requiring the SEC to check the contents of reports from companies on a more frequent basis, while it did not impose a disclosure requirement for any new environmental information. With the release of Interpretation 47, Accounting for Conditional Asset Retirement Obligations (FIN 47) by the Financial Accounting Standards Board (FASB) in March 2005, there is now a requirement that any asset for which a pollution cleanup or treatment obligation might arise in the future, such as due to soil contamination or asbestos, should be recognized as a conditional liability even if such an event is not probable. Thus, a whole system of requiring disclosure of environmental information to investors is in the process of being instituted and expanded in the United States, mainly in the form of SEC regulations; accordingly, efforts are made to enhance and improve disclosure practices through issuance of guidances by the AICPA, examination of and recommendations for the disclosure status by the Environmental Protection Agency (EPA), and reports to Congress by the Government Accountability Office (GAO)24.

15. What work has been done by IASB on the subject under discussion ?

The International Accounting Standards Board (IASB) released a discussion paper in October 2005 on “Management Commentary (review of operations by the management)” in financial reporting . “Management Commentary” is defined as information that accompanies financial statements as part of an entity’s financial reporting, which explains the main trends and factors underlying the development, performance and position of the entity’s business during the period covered by the financial statements, and also explains the main trends and factors that are likely to affect the entity’s future development, performance and position26. It is described in the discussion paper that "MD&A (Management's Discussion and Analysis)," an expression used in the United States and Canada, was initially contemplated as its title, but, considering that the term "OFR" is used in the UK and "Management Reporting" is used in Germany, "Management Commentary" was chosen to serve as a general term.

What is suggested as matters to be stated in a Management Commentary covers a broad rangeof topics, including business details, objectives and strategies, main resources and risks, results and their reviews, and benchmarks for and indicators of performance measurements. In presenting the list of topics, the paper states that such information is useful for investors in that it affects the evaluation of a company because "how an entity interacts with its customers, employees, the community in which it operates and the environment, can have a significant impact on its short- and long-term financial well-being."

The Expert Group Report on Cost Accounting and Cost Audit constituted by the Government of India, Ministry of Corporate affairs in fact recognizes the relevance of many of these issues relating to environment and social responsibility and have opined to include these in the newly recommended structure of the cost audit report .

16. What is the background for such a scaling up of information requirement on environment and social factors globally in today's context?

As a fundamental background of the need for environmental information associated with corporate activities, one can cite the increasing seriousness and urgency of environmental issues in general, as well as an ensuing, increasingly shared recognition that various environmental issues need to be improved on. Recently, global environmental issues have been discussed as the most critical issue that mankind must promptly act on and solve. Especially since Limits to Growth, a pioneering report published by the Club of Rome, a wide spectrum of global environmental issues, such as ozone depletion, diminishing tropical forests and global warming, have been put on the discussion table, as guided by scientific knowledge. The international community has been reacting to this by various efforts under a common principle aimed at "sustainable development" or "sustainable society," for example: UN agreements such as the "Rio Declaration on Environment and Development" and "Agenda 21"; international treaties such as the Convention for the Protection of the Ozone Layer and the Framework Convention on Climate Change; international accords for the actual implementation of the above-cited agreements, such as the Montreal Protocol and the Kyoto Protocol; and institutionalization and international cooperation for environmental regulations in the respective countries.

This, in turn, adds more weight to the effects that companies are subjected to from environmental issues. In other words, a company's past, present and future actions on environmental issues now have increasingly significant effects on its business performance. Companies may be required to additionally cover whole new costs that it has thus far not covered, such as costs from compliance with new regulations and new tax burdens, where a variety of environmental regulations (e.g., against toxic substance use and contaminant emission) are set in place and a new environmental economic system (e.g., environmental taxation and emissions trading) is introduced. Also considering the rising number of cases that entail an enormous burden on a company as a result of lawsuit, damages and contamination cleanup etc., such as the recent asbestos and soil contamination cases, this trend will likely continue for years to come. Moreover, a company's profits or losses are now influenced greatly by the level of its energy efficiency and resource efficiency record, given the growing scarcity of energy and other resources caused by rapid economic development in large emerging economies, most prominently, China and India.

Those companies which outpace others in actions on environmental issues can, by so doing, not only avoid or reduce such a burden, but can also gain profit-making opportunities through a new framework like emissions trading or turn it to their advantage in differentiating their products from others and creating a positive brand image. On the other hand, those with low environmental efficiency might be faced with increased costs and reduced profit-making opportunities and suffer from diminished competitiveness as a result. The impact that such difference in a company's position and capability in environmental actions has on its business performance is expected to loom even larger, supposing that a new system of economy, in which any environmental burden arising in connection with corporate activities is internalized as a cost burden on companies, continues being developed in the future.

Hence, how a company acts on environmental issues can have considerable effects on its competitiveness, future business performance and long-term future cash flows. Risks and uncertainties in its operation can be affected as well. This is why such information will come as important for investors. As, however, it is difficult to discern that aspect of the company's operation from traditional financial information alone, non-financial information like environmental information is needed for a correct evaluation of the company. A growing recognition of this sort, i.e., that environmental information is one of the important pieces of information by which to evaluate a company in the investment decision-making process, is in all likelihood one reason why investors, particularly in the West, request disclosure of environmental information or efforts are made to have environmental and social information disclosed in annual reports. The above background is the perfect setting for the role of cost and management accountants in driving sustainable organizational success and has prompted the international federation of Accountants in bringing out a consultation paper on the same.

17. What stages can be envisaged in implementing a corporate environment cum social strategy?

There are many approaches to implementing a corporate environmental strategy. Corporate experience suggests that several elements are critical to designing an effective strategy. These include:

- ensuring top management commitment and support;
- developing a corporate environmental policy statement;
- creating an environmental management system;
- preparing an environmental action program;
- establishing an environmental audit program;
- developing a strategy for external environmental reporting;
- designing products/processes that take environmental impact into account;
- integrating environmental impact information into management decisions;
- integrating environmental impacts into performance evaluation systems;
- generating revenue through recycling and waste management;
- introducing and marketing "eco-efficient" products and services; and

- integrating the principles of sustainable development

These elements can be grouped into three stages that firms use to design a corporate environmental strategy. While companies progress from one stage to the next, the boundaries between these stages are often unclear. Further, many companies find it advantageous or necessary to include certain aspects of each stage in early environmental integration. Customizing both the design and implementation of a corporate environmental strategy is desirable. Companies often straddle the boundaries between these stages.

Stage 1: Managing Regulatory Compliance.

Organisations acknowledge the financial implications of environmental matters; they realize the possible risks, such as litigation and cleanup costs, associated with current practices; they develop and publish a corporate environmental policy statement; and they develop partial systems to plan for and deal with environmental problems.

Stage 2: Achieving Competitive Advantage.

Organisations move from a commitment to comply with legal requirements to a realization that they can gain a competitive advantage by using resources more efficiently. While minimizing costs is the hallmark of Stage 1 organisations, Stage 2 companies focus on cost avoidance in life-cycle cost management and design for environment .

Stage 3: Completing Environmental Integration.

Organisations have fully integrated environmental components into corporate life. Environmental issues, large and small, are part of everyone's day-to-day decision making. Stage 3 companies create profits from antipollution efforts, "closed-loop" production, operational efficiency, and "eco-efficient" products and services. They recognise that long-term economic growth must be environmentally sustainable.

18. What challenges are there for Cost and Management Accounting in designing and implementing a Sustainable business strategy?

Organisations must recognize that environmental issues will pervade all functions. For example, procurement will need to find raw materials that come from sustainable sources of supply and that are produced with lower environmental impact. It must find ways to reduce packaging and use more recycled materials. Research and development will need to identify processes that use resources more efficiently by finding new uses for waste products. Marketing needs to learn about the growing consumer preference for environmentally friendly goods and about how marketing, distribution, and selling methods can reduce environmental impact. Production will need to work with engineers and maintenance people to devise processes that are more efficient and less costly in energy and resource use. Legal staff need to find good ways to keep abreast of legislation and learn how best to disseminate this information.

Management accounting will need to improve the quality and quantity of information it provides managers so that they can make better decisions on product costing, and pricing, product and process design, and capital investments. Financial reporting and auditing will need to improve the quality and quantity of external disclosures related to environmental liabilities so that external users of the information can better evaluate the company's current and future prospects. None of this potential activity will happen without vision, strategic direction, and example from the top of the organisation. In order to achieve coherence and integration, the environmental action plan must outline priorities, time scales, and allocation of appropriate resources.

The other key challenge facing organisations is to stop seeing environmental issues only in an operational context. Instead, they must raise their programs to a strategic level so that effective environmental management creates a competitive advantage.Senior management and management accountants need to work proactively with government regulators in developing cost-benefit analyses of proposed regulations, in providing cost impacts for implementing new regulations, and in helping to evaluate alternative courses of action.

The key challenge for management accountants is to change their focus. They should no longer concentrate on determining the minimum amount of environmental liability that the firm must accrue. Management accountants must focus on the likely impact of existing production and practices on both the environment and the organisation. They will also need to consider the likely impact of regulations, technology, and competition on the organisation.To meet these growing corporate needs, they will need to master new analysis methods and measurements related to resource usage, pollution, and waste.

Well-defined environmental policies and objectives support a firm’s environmental strategy by providing guiding principles for employee activities. Management accountants can play an integral role in developing environmental strategy, using these strategies to assist in policy and objective development as well as defining environmental measurement, analysis, and control.

The management accountant’s environmental roles vary with the type of job and enterprise. Ideally, management accountants should work closely with other multidisciplinary groups in areas pertinent to their individual enterprise's business lines. For example, the management accountant may:

- cost areas that directly relate to environmental objectives, such as waste treatment, resource recovery, disposal, or site maintenance;
- help resolve conflicts between environmental management and traditional financial management systems, such as those that occur in capital investment appraisal and capital budgeting;
- contribute to life-cycle assessment;
- assess potential liabilities of past practices;
- assess the need for new or modified management information and financial systems;
- consider the financial costs and risks associated with an investment that will likely cause or increase pollution; and
- make environment-related costs more visible.

19. What can be a structured approach with different maturity levels of evaluating sustainable development costs including environment and social costs?

Companies use a variety of tools and techniques in order to integrate environmental and social impacts into management decisions through a costing analysis.

Effective corporate environmental management is impossible without an adequate system to identify and measure environmental costs. Some of the tools and techniques that can help companies define the activities, processes and products that cause environmental costs are:

Allocation of environmental costs;

Many companies are investigating and implementing systems that better accumulate and measure their past, present and future environmental costs related to product costing. Companies generally distinguish among three categories of environmental costs. These are costs incurred to respond to:

- past pollution not related to ongoing operations;
- current pollution related to ongoing operations; and
- future environmental costs related to ongoing operations.

Life-cycle assessment (LCA);

By integrating environmental considerations into their products and processes now, companies are strategically positioning themselves for the next century, when aggressive environmental management will be an imperative for business survival. These organisations focus not only on complying with government regulations but on reducing their corporate environmental impacts. Sophisticated companies are applying various methods and techniques that encourage a comprehensive evaluation of all "upstream" and "downstream" effects of their activities or products.

By looking beyond the corporation's facility and outside the boundaries of traditional environmental strategies, the LCA process helps companies to identify and assess environmental impacts that they may not presently capture. This process evaluates the environmental effect of a product or activity holistically, by analyzing its entire life cycle. This includes identifying and quantifying energy and materials used and wastes released to the environment, assessing the environmental impact, and evaluating opportunities for improvement. LCA addresses environmental impacts in ecological health, human health and resource depletion.

Hierarchical cost analysis;

Hierarchical analysis suggested in each of the tiers is as follows:

1. Tier 0, Usual Costs
   - Identify pollution prevention alternatives.
   - Estimate usual costs of current and alternative practices.
2. Tier 1, Hidden Costs
   - Establish facility_s regulatory status.
   - Estimate hidden capital expenditures.
   - Estimate hidden expenses.
3. Tier 2, Liability Costs
   - Identify regulatory programs under which penalties and/or fines could be incurred.
   - Estimate expected annual penalties and fines associated with each program and requirement.
4. Identify waste-management issues with which liabilities can be associated.
   - Estimate total expected liabilities.
   - Estimate expected years of liability incurrence.
   - Estimate the firm’s share of total future liabilities.
5. Tier 3, Less Tangible Costs
   - Identify qualitatively less tangible costs and benefits of pollution prevention.
   - Quantify less tangible costs and benefits of pollution prevention.

After completing all steps within all tiers, organizations conduct a financial analysis of all current and proposed alternative practices. They compile and analyse the calculated costs to yield estimates of three financial indicators that underpin a ranking of practices. The three recommended financial indicators are total annualised savings (TAS), NPV and IRR.

Hierarchical cost analysis helps firms consider the full range of environmental costs and thereby encourages improved quantitative analysis. As some of the equations involve long algorithms, organisations might have difficulty using these equations without any software. Many software tools exist that can help users identify and/or quantify some of their environmental costs.11

Activity-based costing

Using ABC to identify cost-bearing activities effectively and to allocate costs to individual products can help rationalize managerial decisions. Armed with information on how environmental costs affect current product costs, organizations can make better strategic decisions about continuing or abandoning products. Knowing the full costs of current production and processes also allows managers to focus on opportunities to minimise compliance costs, reduce operating costs, and fully mesh the organisation's environmental and financial goals.

Quantification and monetization of externalities and full environmental cost accounting.

Despite much progress, corporate costing systems fail to produce a true picture of environmental costs. For instance, no company has fully implemented a system to integrate all present and future external and internal environmental costs into its product costing system. For external costs, it is difficult to measure the cost to society of such factors as the degradation of quality of life caused by air pollution. At full maturity, organizations expand their systems to include a broader inventory of environmental costs. One such system is full environmental cost accounting. Although definitions vary, the vision is consistent. Full environmental cost accounting includes the current and likely future costs, including externalities related to the environmental impacts of a company's products, services and activities. It takes into consideration the future costs imposed by a product and allocates them to the product itself.

Full environmental cost accounting is not a precise science. It can be constrained by data limitations. Such limitations primarily affect the quantification of hidden regulatory costs, contingent liability costs and less tangible costs. Monetary estimates of externalities are also generally uncertain. Organizations must determine whether the benefits of collecting environmental data outweigh the costs of doing so.

20. What challenges Cost and Management Accountants will face in adopting these modern tools and techniques ?

Managers need information to make decisions on product costing, product pricing, capital investments and performance evaluations for the corporation, its business units and its employees. In order to make better decisions and minimize environmental impacts and their related costs, managers need to co-ordinate employees from accounting, finance, legal, engineering, operations and EH&S departments in gathering information and providing inputs. The management accountant can play a critical role by applying the appropriate tools and techniques, yielding better information for better decisions.

In helping organizations implement more effective tools and techniques of environmental accounting, management accountants will face challenges in the following areas:

- Long-term planning and forecasting systems are needed that incorporate environmental improvement targets and their financial implications. Management accountants must assess the need for new and/or modified information and financial systems.

- New costing and capital appraisal systems may need to be developed. Whether these systems are based on standard or unconventional accounting information systems, they must give decision-makers adequate information about environmental costs and risks.

- Implementing new cost accounting systems is an organization-wide effort and requires the support of senior management as well as a formal implementation plan. An implementation plan should anticipate requirements such as employee training, assignment of responsibility for providing input into the system, and the likely effects of the new information on current operations.

- Conversion of any cost accounting system must be shown to be cost-effective, as with any other investment.

- Environmental costs are often lumped into overhead accounts. These costs must be removed and applied to appropriate accounts in order to help the company better understand its environmental costs and their causes.

- Management accountants need to find ways to account for quantifiable and tangible environmental factors in investment decisions. Otherwise, some proposals that are economically and environmentally sound in the long term may be rejected; alternatively, omission of significant environmental costs might cause the company to accept environmentally unsound proposals.

- Companies must adopt long-term accounting goals for producing environmental accounts that reflect the full cost of production -even when monetary values cannot be assigned.

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