



Role of environmental accounting towards sustainable development

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1. Changing Role of Business Organisation to Society

There are different views about role of the organisations to society over the years. Actually, when the entities were established 150 years ago primary goal of the entities was to provide public benefits to society while secondary goal was to increase the profitability of the organisations (Estes, 1996). Then, it was changed as firm main objective was to increase owners' value through profit maximization (Friedman, 1970). Even though it is true, there are some drawbacks in the view due to over focusing on profit, fail to consider society welfares such as carelessness of employees' safety in the factory, degradation of the environment through pollution, etc. This scenario is simply explained by Handy (1995, p. 136) that "we have to eat to live, but if we live to eat we become distorted in more senses than one". Therefore, new view emerged as aim of organisation is to increase wealth in the society and consider not only shareholders but also pay attention to all stakeholders (Freeman, 1984). Further, Wood (1991) argues that "business and society are interwoven rather than distinct entities; therefore, society has certain expectations for appropriate business behaviour and outcomes" (Wood, 1991, p.695).

World Business Council for Sustainable Development (WBCSD) (1999) indicated that responsibility of corporations extends from financial responsibility to social responsibilities and environmental responsibility. O'Donovan (2000)

also pointed out that protection of environment is paramount important issues which are faced by government and corporation today. As business activities impact on society and environment, Bebbington and Larrinage (2014) reviewed extensively sustainable development related literature and observed that it is necessary to innovate new thinking and understand how knowledge is created and translated into policy and practice for achieving sustainable development. Bebbington and Larrinage (2014, p. 410) noted that sustainable science¹ is a solution for sustainable development and suggested two approaches, namely, full cost accounting, and sustainable consumption and production due to financial accounting ignores externalities of an entity to society and environment. Organisations have taken many steps including environmental accounting to safeguard the environment (Gray, 2010; Xiaomei, 2004; Gray, Kouhy and Lavers, 1995a). Unless organisations account environmental activities, it is difficult to improve environmental performance through managing environmental costs as environmental costs are included in overhead account (Burritt 2004; Deegan, 2003). Hence it is necessary to understand basic aspects of environmental accounting which are presented below.

2. Environmental Accounting

Environmental Accounting is “covering all areas of accounting that may be affected by the business response to environmental issues” (Gray and Bebbington, 2001, p.7). According to Gray and Bebbington, environmental accounting includes:

- “Accounting for contingent environmental liabilities/ risks.
- Accounting for asset re-valuations and capital projections as they relate to the environment.
- Cost analysis in key areas such as energy, waste and environmental protection.
- Investment appraisal to include environmental factors.
- Development of new accounting and information systems to cover all areas of environmental performance.

¹ “Sustainability science is a distinctive approach that has developed as a result of a belief that there are problems that are sufficiently different in nature that we need to experiment with new ways of knowing, including new forms of research engagement” Bebbington and Larrinage (2014, p. 410).

- Assessing the costs and benefits of environmental improvement programs.
- Developing accounting techniques which express assets and liabilities and costs in ecological (non-financial) terms” (Gray and Bebbington, 2001, p.7).

Various definitions are available for environmental accounting in the literature. Some of the definitions are frequently used which are given in the Table 1.

Table 1. Different Definitions of Environmental Accounting

Source	Definition
Gauthier <i>et al.</i> (1997, p. 1)	Environmental accounting is that aspect of accountancy which, while in dissociable from financial and management accounting, deals more specifically with environmental concerns; that is, the aspect of the information system that enables data collection and analysis, performance follow-up, decision-making and accountability for the management of environmental costs and risks.
Graff <i>et al.</i> (1998, p. 3)	Environmental accounting is a broad-based term that refers to the incorporation of environmental costs and information into a variety of accounting practices.
Schaltegger and Burritt (2000, p. 30)	Environmental accounting deals with: <ul style="list-style-type: none"> • Activities, methods and systems • Recording, analysis and reporting • Environmentally induced financial impacts and ecological impacts of a defined economic system
Deegan (2003, p. 10)	Environmental accounting is a broader term that relates to the provision of environmental-performance related information to stakeholders both within, and outside, the organisation. While environmental accounting can be ‘corporate-focused’, it should also be appreciated that environmental accounting can also be undertaken at a national or regional level.
Japan. Ministry of the Environment (2005, p. 3)	Environmental accounting aims at achieving sustainable development, maintaining a favourable relationship with the community, and pursuing effective and efficient environmental conservation activities. These accounting procedures allow a company to identify the cost of environmental conservation during the normal course of business, identify benefit gained from such

	activities and provide the best possible means of quantitative measurement (in monetary value or physical units) and support the communication of its results. Thus, environmental accounting can be used as an environmental information system to support both internal and external functions of companies.
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(Source: Cited in Chang, 2007, p. 29)

Although there are some differences in above definitions of Environmental Accounting most of definitions focus on *calculation and recording of environmental performance of organisations in terms of monetary and non-monetary and provide the clear information to internal and external stakeholders for decision making.*

Environmental Accounting consists of two branches, *first*, Environmental Financial Accounting (EFA), which focuses on reporting the cost of environmental liabilities and other significant environmental costs, and provide related environmental financial information to external stakeholders; *second*, Environmental Management Accounting (EMA), which as part of Management Accounting, addresses mainly to the information about monetary and physical aspects of material and energy flow, and provides information for internal decision makers of the corporation (Chang, 2007; Xiaomei, 2004). “The basic information needed by EFA relies on the proper recognition and summary of environmental cost, which is also the core component of EMA” (Xiaomei, 2004, p.49).

“EMA can be defined as the identification, collection, estimation, analysis, internal reporting, use of material and energy flow information, environmental cost information, and other cost information for both conventional and environmental decision making within an organization” (Reyes, n. a).

Thornton (2013) posited that that “capital markets exert pressure on firms to internalise externalities to some extent”. Thornton (2013) enhanced environmental accounting how an organisation internalize externalities within traditional financial accounting framework by incorporating few debits and credits. A number of researchers provide critical commentary on the paper as there will be no actual resource flow to or from to company with regard to true externalities (Cho and Patten, 2013; Deegan, 2013; Gray, 2013; Spence, Chabrak

and Pucci, 2013). Deegan (2013, p. 457) noted that “‘modify’ financial reporting processes to incorporate a recognition of social and environmental impacts are somewhat illogical”. Therefore, initially it would be better to calculate actual resource flow to or from the organization. Accordingly, organizations have to measure the usage of resources such as consumption of water, electricity, paper. It is monitored by fixing separate meters/ mechanism for each section or branch or department. It helps to reduce the unnecessary usage as well as strictly control wastage.

3. Environmental Costs

Environmental costs include all costs incurred pertaining to environmental damage and protection, both internal and external i.e., corporate and social (Figure 1).

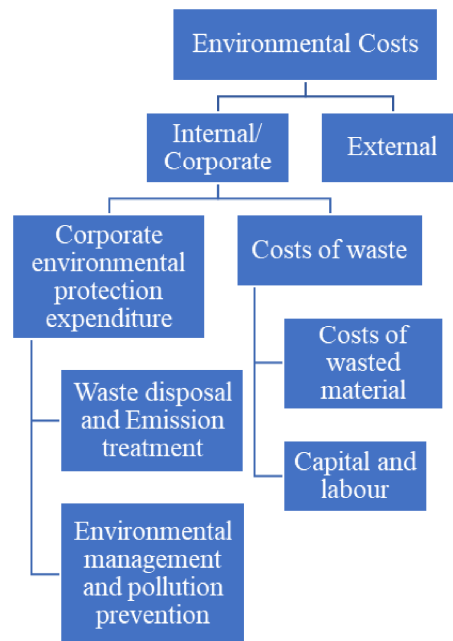


Figure 1: Environmental costs (Source: Adapted from Xiaomei, 2004, p.51)

Environmental costs are like an iceberg, with only a small part of the cost visible (Bierma, Waterstaraat, and Ostrosky, 1998). Hidden costs can be brought out by applying EA.

4. Necessity of Environmental Accounting

Reyes (n. a) noted that there are following limitation of traditional financial accounting.

- hiding of costs in overhead accounts.
- insufficient tracking of wasted materials and energy.
- inaccurate allocation of overhead cost back to product, processes, activities.
- All costs are not tangible in the accounting records at all.

In this context, CGMA (Chartered Global Management Accountant) (2022) posits that environmental accounting focuses to;

- Identify and estimate the costs of environment-related activities
- Identify and monitor the use and cost of resources such as water, electricity and fuel, so costs can be reduced
- Make sure environmental considerations form part of capital investment decisions
- Assess the likelihood and impact of environmental risks
- Include environment-related indicators as part of routine performance monitoring
- Benchmarking activities against environmental best practice.

Therefore, implementing environmental accounting is very essential to organization as well as society. Those benefits are discussed next.

5. Benefits of Environmental Accounting

- The ability to more precisely identify, estimate, allocate, and manage/reduce costs environmental related costs.
- The ability to more accurately track and manage the use and flows of energy and materials, including pollution/waste volumes and types.
- More accurate and comprehensive information for the measurement of performance, thus improving company image with stakeholders such as customers, local communities, employees, government and financial providers.

- Improving sales or reducing sales erosion: consumer awareness of products and services' environmental impact is increasingly influencing their preferences and buying behaviours.
- Reducing the cost of failure: investing in processes that reduce the likelihood and cost impact of failure, such as the need to process waste or clean up environmental impacts.
- Implementation of EMA by industry should strengthen the effectiveness of existing government regulations/ policies by revealing to companies the true environmental costs and benefits resulting from government regulations.

6. Conclusions

Organization can quantify the usage of resources such as consumption of water, electricity, paper, by practicing environmental accounting. It is monitored by fixing separate meters/ mechanism for each section or branch or department. It helps to reduce the usage as well as strictly control wastage. Subsequently, it saves money and enhance revenue. Ultimately, the application of environmental accounting improves the image of the organization in the society and becomes role model to others towards sustainable development.

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*Where trade unions are most firmly organized, there are
the rights of the people most respected.*

- Samuel Gompers