

## **Environmental Accounting for South Pacific Island Nations: A Possible Mechanism for Encouraging Sustainable Development by the Corporate Sector**

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### ***Abstract***

*This paper highlights the potential contributions of the mechanism commonly referred to as environmental accounting in encouraging sustainable business practices by corporations. Environmental accounting is foreseen as a vital mechanism for assisting in reducing some of the environmental problems existing in the South Pacific. Emphasis is placed on providing sufficient details on a possible mechanism that could be used to encourage organizations to undertake business activities that are sustainable. This paper also includes a comprehensive bibliography on environmental accounting.*

### **Introduction**

Some of the critical global environmental problems prevalent today include the thinning of the ozone layer, global warming, deforestation, species extinction, waste disposal, habitat destruction, energy usage, acid rain, desertification, soil erosion, air pollution, water depletion, water pollution, usage of toxic chemicals, land pollution, nuclear waste, noise pollution and resource scarcity (see, Hardoy et al.,

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1992, Walker, 1994, Theodore and Theodore, 1996, Moore et al., 1996, Bebbington and Gray, 2001). The following statement by Thistlewaite and Davis is indicative of the solemnity with which environmental issues should be treated:

The ability to think and plan ahead sets humans apart from other mammals. Never has this ability been more severely tested than now, when the earth must sustain an increasing number of people, many of whom fail to acknowledge the fragility of the environment within which they live (1996: 1).

It is now increasingly recognised that the environment does not belong to people. On the contrary, people belong to the environment, given that their future existence depends on a clean and pure environment within which they can live. But why do humans continue to desecrate the very foundation upon which their existence depends? Why are environmental issues secondary to business pursuits of profit maximization? When will humans learn to live in harmony with the planet and regard the environment above all other issues? This paper will address some of these issues by focusing on the mechanism commonly referred to as *environmental accounting* (sometimes also called *green accounting*).

Environmentalists argue that environmental problems have reached such a stage that a crisis looms on the horizon. This, in turn has led to an increasing global emphasis on environmental protection as the humanistic approach towards minimizing our environmental problems.

Environmental disasters such as the Bhopal gas leak, Chernobyl nuclear explosion, Love Canal tragedy, Exxon Valdez oil spill, and the Ok Tedi incident have led to a public outcry on the need for controls to be imposed on the activities of major corporations in terms of their environmental impact. Despite this, the importance of environmental protection has emerged as a critical issue in the international community somewhat recently, and yet more recently in the South Pacific.

The growth-at-all-cost attitude of the industrialized nations has had a fatal impact on the lesser-developed nations, especially those in the South Pacific region. An analysis of the environmental issues affecting South Pacific Islands suggests that these countries suffer from the production of greenhouse gases by the industrialized nations, lead-

ing to unexpected climatic changes and sudden sea level rise. They are also subject to dumping of wastes into their waters by the industrialized nations and nuclear testing in their atolls.

Apart from inheriting specific environmental problems from the industrial nations, South Pacific Island nations have also faced substantial environmental dilemmas stemming from their lack of understanding of the importance of the environment, as well as their apparent willingness to sacrifice their environment as a result of economic pressures. Amongst these include problems such as deforestation, soil degradation, inadequate waste management, the uncontrolled release of exhaust fumes from vehicles, atmospheric pollution from industrial activity, noise and marine pollution (Hulm, 1989; Thistlewaite and Davis, 1996; Burt and Clerk, 1997; Nunn, 1999).

It has been suggested that humans themselves need to be responsible and plot strategies that could assist in preserving the integrity of resources for the future. These duties should not be solely left to environmentalists; a collective response is required from everyone in the international community, especially those who are involved in commercial activities that have an impact on the environment. It is this regard that the role of accountants in environmental matters has recently gained significant attention.

This paper advocates the utilization of a mechanism for encouraging sustainable business activities by the major corporations in the South Pacific<sup>2</sup>. It is believed that by including the key players in corporate activities (managers, accountants, others holding senior authority) in the environmental management process, a collective approach to environmental sensitivity within organizations could be achieved. This could possibly lead to dramatic reductions in the environmental impacts of industries. Before postulating the potential of environmental accounting especially for South Pacific Island nations, it is important that the social significance of accounting is recognized, and the notion of environmental accounting and its international developments are identified. These provide a basis for evaluating the practice of environmental accounting in the South Pacific.

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<sup>2</sup> 'Corporations' refer to both private sector and public sector companies. In the Pacific, there are a lot of public sector entities, while a number have been privatised. The notion of environmental accounting is applicable to all corporations, irrespective of their ownership.

### **Social Significance of Accounting**

Accounting has a role beyond merely that of a technocratic (often referred to as 'number-crunching' and 'bookkeeping') and procedural activity. The fundamental premise of this paper is that accounting cannot always be regarded as the objective, rational and value free phenomenon that it is commonly conceived to be (see for instance, Burchell et al., 1980). On the contrary, the accounting process has implications for the organization and society.

In organizations, accounting performs a vital role in business activities through an internal mechanism commonly referred to as management accounting. Further, through its external reporting process, accountability is extended to stakeholders in regard to the company's financial performance (which has been subject to an auditing function), enabling them to make economically useful decisions. Thus, accounting establishes an organizational culture and has a profound impact on business success and credibility. At a broader societal level, accounting is embedded within the wider social and political environment. Accounting data is used to represent or even recreate reality (Hines, 1988). For instance, accounting data appearing in financial reports such as the statement of financial performance and the statement of financial position, could suggest to investors that the company is doing reasonably well when in effect, the company could be close to liquidation. The number of corporate scandals exposed during the past decade or so, all had the commonality that even though financial reports showed that the companies involved were financially sound in previous years, they suffered from fundamental problems. This gives credence to Hines's argument that accounting can be used to recreate reality through data and account manipulation.

The concern of this paper is the social significance of accounting (particularly environmental accounting). An essential function in the accounting process involves discharge of accountability to stakeholders; embedded therein are responsibilities of the entity (Ijiri, 1983). These responsibilities, however, are not solely restricted to presenting a financial account of corporate performance; inevitably the broader social obligations of the organization are equally important (see Churchill, 1974, Ramanathan, 1976, Gray et al., 1987, 1996, Owen et al, 1997, Mathews, 1997, Gray and Bebbington, 2000, 2001, Gray, 2001). A company is

equally responsible for its social and environmental responsibilities whereby its stakeholders are much broader than shareholders. In effect, stakeholders encompass the entire society, which is affected by the business's activities, albeit non-financial in some cases. It is in this instance that the social significance of accounting, which involves acknowledging the social and political impact of accounting practices, gains prominence.

The functioning of the conventional accounting framework with a predominant focus on profit maximization, has relegated the recognition of the social significance of accounting to an issue of low priority within the organization (see for instance Tinker, 1985, Gray et al., 1987, 1996, Hines, 1991, Mathews, 1997, Gray, 2001, Bebbington et al., 1999, Schaltegger and Burritt, 2000, Gray and Bebbington, 2000, 2001). Accounting assumptions such as objectivity, neutrality, rationality and efficiency have led to issues of social significance being perceived as a threat to the status quo of present conventional practices (Gray et al., 1987). These assumptions lead to issues of social significance being regarded as subjective and non-measurable, and misconceived to lie beyond the function of accounting. This has resulted in neglect of significant social issues by conventional accounting practices (see Tinker, 1980, 1985, Tinker et al, 1991, Neimark, 1992, and Lehman, 1992, for specific examples).

An increasing number of authors now argue that social and environmental accountability, which has often been neglected by the accountancy profession, should become integral components of the accountants' role. The decision usefulness of accounting information extends beyond its economic focus. It is argued that social and political issues are vital for accounting practice, and that extensions and modifications to present conventional practices are inevitable if the accountancy profession is to comprehensively embrace its accountability function.

Studies on the Love Canal tragedy, Slater Walker Company, Ponzi Schemes and California Pyramid, National Student Marketing Corporation and the Public Utility Pricing scandals, Sierra Leone Development Corporation saga (Tinker, 1985), the General Motors analysis (Neimark and Tinker, 1986, Tinker and Neimark, 1987, Neimark, 1992), the National Coal Board dispute (Berry et al., 1985), the Value Added concept (Burchell et al., 1985), the role of accounting in the service of the holocaust (Funnel, 1998), land degradation in Australia (Mauders and Bur-

ritt, 1991), Australian corporate collapses such as Ansett, Onetel and HIH (see for instance, Craig, 2001a, 2001b, Clark et al, 2003) and more recently, the Enron scandal (see for instance, Benston and Hartgraves, 2002, Craig, 2002, Clark et al, 2003) and the WorldCom fiasco (Backover, 2002) are specific examples that highlight the adverse effects of the involvement of the accounting process in a number of issues of social significance. In the South Pacific context, the failure of the National Bank of Fiji (see for instance, Nath and Chand, 1998, Grynberg et al, 2002, Lodhia and Burrit, 2004) illustrates how financial statements of this bank concealed numerous instances of financial mismanagement, poor internal control, auditing failures and political favors to show profits for the company prior to its collapse. These examples encompass environmental degradation, corporate scandals, exploitation of underdeveloped countries and the use of accounting to serve the needs of a few self-interested parties.

By focusing solely on profit maximization in the examples listed, the accounting process was used to justify that all was well when on the contrary, the true situation had been camouflaged through manipulation of accounting data. In communicating financial reality through accounting information, the conventional accounting process was used to reconstruct social reality (Hines, 1988). Hence, the 'supposedly objective' phenomenon of accounting has served purposes beyond the conventional accounting norms of neutrality, rationality and efficiency, as exemplified in the cases illustrated in the preceding paragraph.

To understand the imperatives of accounting in these matters of social significance (more often to its detriment), one needs to scrutinize the underlying basis of mainstream accounting thought. Conventional accounting is based on the neoclassical economics school of thought (Tinker, 1985, Maunders and Burritt, 1991, Neimark, 1992, Gray et al, 1996, Matthews, 1997,1998), which emphasizes efficient resource utilization through market mechanism, concentrates on monetary measurement, and focuses on maximization of profitability. Milton Friedman, the modern day leading light of neoclassicalists, espoused this view most succinctly:

Few trends would so thoroughly undermine the very foundations of our free society as the acceptance by corporate officials of a social responsibility other than to make as

much money for their shareholders as they possibly can (1962: 133).

The statement clearly illustrates that social responsibilities are secondary to business pursuits of profit maximization.

Refreshingly, however, neoclassical assumptions such as efficiency and maximization have been criticized by a number of authors. Tinker et al. (1991, p.39) state:

a conventional understanding, based on marginalist precepts, is only a surface-level appreciation of the meaning of accounts, and that the marketplace is merely a facade where social protagonists meet to resolve their struggles over the distribution of wealth. Efficiency, productivity, and other global metrics are merely metaphysical artefacts promulgated by some adversaries to advance their claims (1991: 39).

Similarly, Lehman (1992) argues that the market mechanism does not solve distributional and social conflicts that are inherent in mainstream accounting because efficient markets rarely exist. This has been evident from the stock market crashes of yesteryears as well as the numerous corporate failures listed above. If markets were efficient, these events would not have transpired and 'offenders' would have been brought to justice. Moreover, it is believed that under neoclassical economics school of thought, individual preferences are aggregated to represent collective interests. Lastly, neoclassical economics has led to a capitalist focus on accounting, with social issues being largely ignored (see for instance, Tinker, 1980, 1985, Cooper and Sherer, 1984, Gray et al., 1987, 1996, Gray, 1992, 2001, Tinker et al., 1991, Lehman, 1992, Owen et al, 1997, Bebbington et al., 1999, Gray and Bebbington, 2001).

A contradiction usually arises while trying to balance the objectives of profit making and social responsibility. As indicated earlier, traditional accounting practice emphasizes profitability as the predominant motive for business activities. However, social issues such as environmental protection usually involve outlays by the organization with the intention of preserving environmental resources for future generations. The benefits of carrying out such an activity cannot always be realized in the current period implicitly because benefits of environmentally sensitive operations are not always quantified in monetary terms

(Schaltegger and Burritt, 2000). Thus, environmental sensitivity by organizations seems contradictory to the conventional accounting viewpoint of profit maximization under neoclassical economics. As stated by Chwastiak and Young, 'the dictates of profit maximization require that the social and environmental costs of corporate actions be masked in order to increase the acceptability of such acts' (2003: 534).

Criticisms have also been directed at generally accepted accounting principles (GAAP), which form the very core of conventional accounting systems (see Tinker, 1985, Maunders and Burritt, 1991). The extent to which choices are allowed in accounting provides scope for manipulation of such practices. For instance, depreciation rates, inventory valuation, estimation of bad debts, and the expensing versus capitalization of transactions are some examples that illustrate the extent to which subjective judgments are intertwined with the supposedly objective accounting function. This could lead to attempts at reconstructing social reality while communicating financial reality through indications in financial reports that all is well when in effect, the situation has been camouflaged by manipulation of accounting practices. It is believed that these generally accepted principles have provided considerable leeway to accountants and thereby have contributed to some of the misdemeanours that were identified earlier in this section.

The rigidity of GAAP and their inability to incorporate social and environmental issues into the conventional practice are subject to criticism as well (see for instance, Tinker et al, 1991, Owen et al, 1997, Gray and Bebbington, 2000, 2001). This is largely due to an emphasis on monetary measures; as Gray states, the 'basis of our accounting is book-keeping which is driven only by price transactions' (1990: 382).

The adverse consequences of monetary measurement is clearly summed up by the following statement:

Once you begin to measure wealth in cash, enough doesn't exist. Whatever the sum, it could always be larger. Accountancy is familiar with categories of "more" and of "less" but doesn't know that of enough. (Gorz, 1989: 112).

Fundamental accounting postulates such as objectivity, entity, matching, accounting period, consistency and prudence are also believed to be deterrents towards the incorporation of social and environ-



mental issues into conventional practice (see Maunders and Burritt, 1991, Nyquist, 2000). These restrict measurement to present day conditions and in monetary terms, and completely disregard future generations.

The profound consequences of ignoring elements that cannot be measured easily is illustrated through the McNamara fallacy:

The first step is to measure whatever can be easily measured. This is ok as far as it goes. The second step is to disregard that which can't be easily measured or give it an arbitrary quantitative value. This is artificial and misleading. The third step is to presume what can't be measured easily really isn't important. This is blindness. The fourth step is to say that what can't be measured really doesn't exist. This is suicide (Yankelovich, as quoted in Gray and Bebbington, 2001: 26).

More specifically, as Hines states, '[n]ature can be given prominence in accounting reports without reducing it to a number. Quantifying our environment must inevitably further alienate people from nature' (1991: 29) The above challenge exclusion of social and environmental issues by mainstream accounting thought on the basis of measurement difficulties in monetary terms and suggests that disregard for such issues by corporations can have detrimental effects for the future. Non-monetary measurements pertaining to the environment, albeit its subjectivity claims, are equally important as figures appearing in financial statements.

The assumptions of conventional accounting thought can be attributed towards the creation of the contemporary capitalist society. Individual differences, power asymmetry, self interest, increases in income and GDP at the expense of the quality of life, health and living standards, uneven wealth distribution, a lack of consideration for the environment in the pursuit of industrialization, and ethical problems (Gray et al., 1996) can be said to have abounded partly due to the capitalistic focus of accounting. According to the norms of capitalism, the success of an entity is judged by the profits it makes and social issues are seen as another cost that the organization has to incur.

Despite the negative effects of the present practice; as accounting is intertwined with social reality, it is essential for the profession to be responsive towards issues of social significance (see for instance, Gray

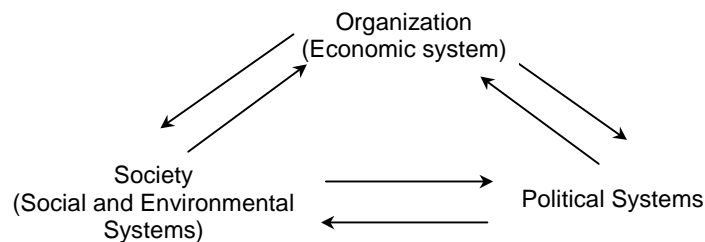
et al., 1987, 1996, Hines, 1991, Owen et al, 1997, Bebbington, 1997, Schaltegger and Burritt, 2000, Gray and Bebbington, 2001, Gray, 2001). Such engagement will allow the profession to redeem itself for some of the past failures, which it may have subconsciously prompted through an excessive reliance on generally accepted accounting principles and neoclassical school of thought. Hines states:

It is in the name of Net Profit, Budget Surplus and Gross National Product that the natural environment in which we all co-exist is being destroyed. Those who speak this language have more social power to influence thinking and actions than they perhaps realise, or utilize (1991: 29).

Such a motive is envisaged through displacement of the capitalistic focus of contemporary accounting thought with a holistic perspective, one which considers the wider social (including cultural and historical) and political factors that impinge upon accounting systems (Burchell et al., 1980, Tinker, 1980, Hopwood, 1983, 1987, Cooper and Sherer, 1984, Hines, 1989, Gray et al., 1996, Gray, 2001).

The General Systems Theory states that considering a component of a system in isolation is troublesome because every component is interrelated to form the entire system (Von Bertalanffy, 1973). Figure 1 shows the interrelationship.

**Figure 1: The General Systems View of Society**



Organizations are open systems, characterized by exchange with their environment and in that process, change as well. Applying this theory to the traditional accounting practice, one cannot isolate an economic system (organization and accounting) from the broader so-

cial (environmental) and political systems. This is because the economic system has implications for the broader systems, which in turn have consequences for the economic system. Thus, accounting has a dialectic role in society. It cannot operate in isolation; consideration should be given to the wider social praxis that is intertwined with the economic system.

The general systems theory provides support for the operation of accounting within a broader context, encompassing social responsiveness and ethical obligations (see Gray, 1992, Gray et al, 1996, Owen et al, 1997, Gray and Bebbington, 2001, Gray, 2001).

Consider the following arguments, which lend support to the view that there is a need for a 'new' accounting paradigm, one that is not dictated by capitalist motives of profit maximization at the expense of social and environmental issues, and one that considers the implication of the accounting profession on society:

[Accounting can] not be seen as a mere assembly of calculative routines, it functions as a cohesive and influential mechanism for economic and social management (Burchell et al, 1980: 6).

Accounting, in turn, also has to come to be more actively and explicitly recognized as an instrument for social management and change (Burchell et al., 1985: 381)

Accounting plays a key role in defining organizations, and increasingly, in mediating the relationship between the organization, the society and the environment (Gray, 1995: 1).

The 'new' accounting role can be achieved through extensions to internal conventional accounting systems and provision of extensive social and environmental information in corporate annual reports or other reporting media.

Hopwood (1983) suggests that accounting is increasingly becoming what it was not, and that changes in mainstream accounting thought are inevitable. Similarly, Tinker posits:

Accounting bears a responsibility in the way it helps resolve the distribution of income, whether between corporate polluters and local communities, or between inside and outside shareholders (1985: 9).

This paper recognizes that accounting has a social significance, ac-

knowledges its existing limitations and contends that it should be studied in a broader context, encompassing social and environmental obligations. The focus in this study is primarily on environmental issues and thus, environmental accounting is the predominant concern.

### **Environmental Accounting**

Environmental accounting, defined as the accountant's contribution towards ensuring environmental consciousness in organizations, rose to prominence in the 1990s. It has its roots in the social accounting debate of the 1970s which focused on extending accountability to stakeholders by requiring disclosure of social information in corporate annual reports (see Gray et al, 1996; Mathews, 1997; Gray, 1990, 2001). The 'social significance role' of accounting could be fulfilled by reporting social and environmental issues in addition to the customary economic information that stakeholders would find useful in their decision making process. This led to the appearance of environmental, employee and other social information on a voluntary basis in annual reports.

Unfortunately, social accounting was criticized because of lack of mandatory standards to guide it and value judgments associated with determination of social responsibilities for a company (see for instance Owen et al, 1997, Mathews, 1997, 1998, Gray, 2001). It was in obscurity for a certain period of time before reaching a renewed interest in the 1990s, triggered by the urgency associated with reducing environmental problems that exist today.

Accountants can significantly contribute to environmental sensitivity in organizations because of their managerial, auditing and reporting skills. Increasingly, the emphasis has shifted from social accounting in general to a more specific environmental accounting school of thought. These days the term social and environmental accounting (SEA) is more commonly used in place of social accounting, an adage that places due emphasis on environmental issues and their importance.

Accountants perform a vital role in management accounting systems within their respective organizations where they are continually involved in providing information for planning, control and decision making (see for instance, Hongren et al, 2001). These skills are essen-

tial for environmental management accounting within an organization. It is here that the role of accountants comes to prominence. Accountants also hold positions of responsibility and authority within an organization; it is expected that they will be the leaders in encouraging sustainable business practices within their respective organizations.

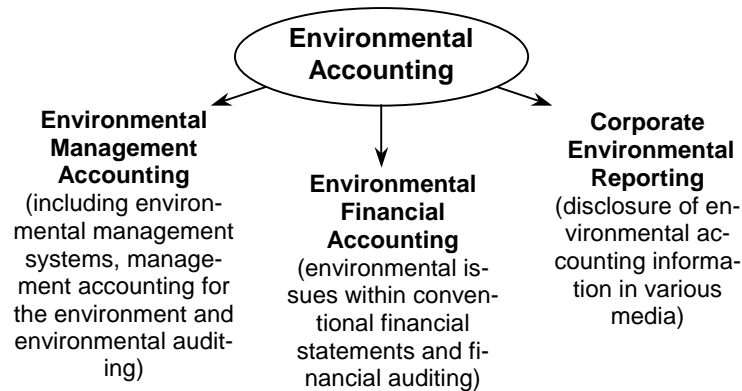
The practice of auditing within the accountancy profession enshrines an independent attestation of company performance (see for instance, Gay and Simnett, 2000). These distinct skills of accountants could be utilized in environmental audits (see Power, 1997 for example) or in seeking an independent evaluation of the environmental performance of a company (see Gray, 2000, Ball et al, 2000).

The reporting mechanisms employed by the accountancy profession is another remarkable trait of the profession that extends accountability to numerous stakeholders. As mentioned earlier, this form of accountability is presently skewed towards the financial performance of an entity. However, it is envisioned that social and environmental disclosures will complement financial disclosures in corporate annual reports in order to provide a broader accountability function to stakeholders.

Even though the criticisms of the accounting process discussed in the previous section and the suggestions by some authors that accountants are the agents of capitalists (see Tinker, 1985 for example) paint a pretty gloomy picture of the accounting discipline, it does have certain qualities that could assist in the development of environmentally sensitive accounting as illustrated in prior paragraphs (see also Schaltegger and Burritt, 2000: 83-4). The idea is to broaden the present accounting framework to incorporate social and environmental issues into its accountability role and to ameliorate some of its negative effects outlined earlier.

Corporations, in both the private and public sector, have the greatest impact on environment. Involving the process that could have encouraged such environmental insensitivity in the past, is believed to be the way forward. There is not a specific need to develop a framework for social and environmental accounting from scratch, it can be developed within the accounting process. Having established the necessity for environmental accounting, a need arises to specify what it should involve and what its key elements will be. Figure 2 shows the components of environmental accounting.

**Figure 2: Components of Environmental Accounting**



*Environmental Management Accounting* (EMA) refers to internal operations of environmental accounting within an organization. Some authors believe that such systems are drivers of environmental accounting mechanisms (see for instance, Schaltegger and Burritt, 2000, Burritt et al, 2002, Schaltegger et al, 2003).

The fundamental premise behind environmental management accounting is that organizations should internalize environmental costs. Currently, these costs are externalized, which is to say that the society bears the impact of an organization's adverse activities on the environment, largely due to the fact that it is a 'public good'. Internal environmental accounting mechanisms, such as life cycle costing or even full cost accounting, attempt to trace costs of the organization's activities on the environment. It is believed that once organizations are made accountable for these costs, they would be compelled to minimize the potentially harmful effects of such activities.

Environmental management systems are expected to be developed in conjunction with accounting information systems so that environmental issues are addressed by conventional accounting practices. Environmental auditing is also an integral part of this process. It could in-

volve an audit of environmental management systems (as done under ISO14001) or a physical audit of the environmental impacts of the corporation.

Burritt et al (2002) further subdivide EMA into *monetary environmental management accounting* (MEMA) and *physical environmental management accounting* (PEMA). The former involves accounting for the environment in terms of financial measures such as estimation of environmental costs and liabilities, preparation of environmental budgets, investment appraisal and so on, while the latter focuses on the physical measurement of environmental issues which is likely to lie within the domain of environmental experts. EMA is a multidisciplinary approach requiring involvement of accountants through MEMA and environmental experts through PEMA, both of which overlap and require a consultative approach between the two parties.

*Environmental Financial Accounting* (EFA) is the financial response towards the environmental agenda in terms of incorporation of environmental issues into financial accounts and statements. This could involve accounting for current and potential environmental costs coupled with estimation of environmental liabilities, provisions and contingencies. The impact of these should also be recognised during the statutory audit.

*Corporate Environmental Reporting* (CER) refers to the disclosure of environmental accounting information in both quantitative (EFA information) and qualitative terms in various media such as annual reports, stand alone environmental reports, the world wide web, advertisements and brochures. It is an approach that ensures that organizations are accountable for their activities and the resultant impact on the environment. CER is concerned with signalling to stakeholders how the company's activities relate to the environment through:

- its consumption of energy and raw materials,
- its business activities and operations,
- its waste products, and by-products (Fayers, 1998: 75).

CER extends accountability to stakeholders through reporting of broader issues (environmental disclosure) in the corporate reporting media that once primarily served to disclose only financial information to stakeholders. It reassures them that the organization is environmentally sensitive and is seeking to improve its environmental performance.

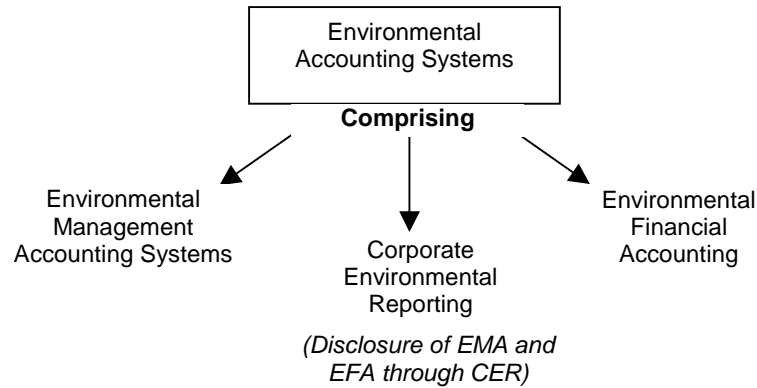
The annual report has in the past been used as a communication tool for disseminating information to stakeholders in relation to a company's financial position. It has also been regarded as a medium of communication for portraying environmental accounting information (see Tilt, 2001, Gray and Bebbington, 2001, for example). However, other communication media such as stand-alone environmental reports are available (see for instance ACCA, 2001a, Gray and Bebbington, 2001, Tilt, 2001, for example). Advertisements and brochures may also be useful in disclosing environmental accounting information (Zeghal and Ahmed, 1990, Bebbington and Gray, 2000, Tilt, 2001) while news media could be used by parties in addition to the organization to disseminate information on a company's environmental performance or to report on major environmental incidents (see Brown and Deegan, 1998, Deegan et al, 2002). Recent developments have seen an emergence of environmental reporting on the WWW (see UNEP, 1999, 2001, Lodhia, 2002, 2004a).

As highlighted earlier, disclosure of environmental accounting information may not necessarily be in monetary terms (reporting of EFA information). Information pertaining to the company's environmental impact and the resulting actions to reduce these impacts, results of environmental audits, and reports on major environmental incidents could also be useful information for stakeholders. Disclosure of physical measurement of environmental impacts (Schaltegger and Burritt, 2000) such as Toxic Release Inventory (US) or National Pollutant Inventory (Australia) are possible ecological data that could be reported utilizing the various media.

It is suggested that organizations have environmental accounting systems composing of environmental management accounting systems (MEMA and PEMA) and environmental financial accounting. Furthermore, organizations need to disclose the outcomes of such systems; this is achieved through CER via various reporting media. Figure 3 illustrates such a process.



**Fig. 3: Environmental Accounting Process within Organisations**



Having discussed the concept of environmental accounting, a key issue that needs to be addressed is: why should companies undertake such a mechanism?

In the environmental accounting literature, stakeholder theory (Freeman, 1984, Clarkson, 1995) and legitimacy theory (Dowling and Pfeffer, 1975, Lindblom, 1994) have been used extensively to explain environmental accounting practices of companies (see Roberts, 1992, Patten, 1992, Gray et al, 1995, Deegan and Gordon, 1996, Neu et al, 1998, Christopher et al, 1998, O'Donovan, 1999, 2002a, 2002b, Deegan et al, 2002).

Stakeholder theory contends that organizations have responsibilities to all stakeholders and not just shareholders. It emphasises that in order to survive, organizations need to manage all their stakeholders. This can be related to environmental issues. Legitimacy theory develops the arguments of stakeholder theory further by stating that in order to manage their stakeholders and appear legitimate to society, companies will undertake environmental accounting by engaging in environmental management accounting and environmental financial accounting, and disclosing the results of their environmental performance in appropriate media such as annual reports, environmental reports or the World Wide Web.

### **International Developments in Environmental Accounting**

Research into environmental accounting has been in existence for over a decade now (see the summary in Lodhia, 2004b). Over the years, such research has grown from strength to strength and has been globally accepted as a vital sphere of academic advancement. Developments in the practice are also increasing with numerous recommendations and guidelines being postulated to facilitate the transition of the environmental agenda into business. In essence, environmental accounting is more widely accepted now than in the early days of its inception (see Gray, 2001 or Gray and Bebbington, 2001 for example).

Some of the more influential recommendations on environmental accounting include the Global Reporting Initiative (GRI) and the European Commission's (EC) recommendation on recognition, measurement and disclosure of environmental issues in the annual accounts and annual reports of companies in the European Union. The GRI is an international multi-stakeholder effort by the Coalition for Environmentally Responsible Economies (CERES) and the United Nations Environmental Program (UNEP) towards developing globally applicable guidelines for reporting on the economic, social and environmental performance of corporations, governments and non-governmental organizations, commonly referred to as Triple Bottom Line Reporting (GRI, 2002). On the other hand, the EC recommendation (see Burritt and Lodhia, 2002) is an initial attempt towards incorporating environmental issues into financial reports and accounts and while it is presently restricted to countries in the European Union, it may be adapted on an international basis.

Denmark was the first country to introduce mandatory environmental reporting (Rikhardsson, 1999) followed by other European Nations – Holland, Norway, Sweden (see for instance, KPMG, 1999), Spain (Larrinaga-Gonzalez et al, 2001) and France (APCEA, 2002). Environmental reporting is also mandatory in Korea (Gray and Bebbington, 2001), Australia (Frost, 2001) and New Zealand (ACCA, 2001). In addition to these, there have been numerous initiatives for environmental accounting in various countries such as the mandatory toxic release inventory in the US (its Australian equivalent is national pollutant inventory), the voluntary greenhouse challenge and public environmental reporting in Australia (Burritt, 2002) as well as a pro-

fessional requirement for the study of environmental management and reporting for accountants in the Philippines (Reyes, 2001).

In just over a decade, the practice of environmental accounting has reached colossal heights internationally in relation to mandatory and voluntary guidelines. However, very little is known about the situation in the South Pacific.

### **South Pacific Studies on Environmental Accounting**

The only literature on environmental accounting in the South Pacific is on Fiji. In Fiji, developments in environmental accounting are at a premature stage, as evident from the work of Lodhia (1998, 1999, 2000, 2003). These studies have reiterated the finding of Nandan (1992) which states that accountants in Fiji are reluctant to extend their role beyond that of a technocrat and thereby, are hesitant to react to social issues. Lodhia (1999) reveals that the use of environmental accounting by the sole public company in Fiji that does disclose environmental information in its corporate annual report (Fiji Sugar Corporation) seems to be public relations exercise-driven rather than an attempt to extend accountability to numerous stakeholders. Lodhia's (2000) study suggests that public companies in Fiji have a minimal level of disclosure of social and environmental information in their corporate annual reports. Reporting on the result of interviews with Fiji accountants – which is an expansion of his earlier study in 1998 that looked at only two practitioners - Lodhia (2003) highlights the lack of involvement of corporate accountants in the environmental strategies of their respective organizations and the non-preparedness of chartered accountants to provide environmentally related services to their clients.

Developments in environmental accounting in South Pacific Island nations lags behind the global practices identified in the preceding section. In spite of this, environmental accounting has the potential to encourage corporations in the South Pacific to engage in sustainable business practices.

### **Potential for Environmental Accounting by South Pacific Nations**

The potential for environmental accounting by South Pacific corporations is tremendous. As stated earlier in this paper, environmental

issues are significant for South Pacific Island nations. Any mechanism assisting in the reduction of the environmental impact of corporations is welcomed.

The involvement of local accountants, managers and other senior personnel in environmental issues would ensure a collaborative approach towards environmental management in both private and public sector organizations. Environmentalists could concentrate on measuring the company's environmental impact and formulating environmental strategies to counter environmental problems. Managers and accountants could use their positions of authority to convert these strategies into reality through their influence on organizational policies. They could also supplement the managerial and auditing skills required for environmental management. Environmental consciousness in organizations would become high and consideration of the environment when undertaking business activity would be paramount. This could lead to a possible reduction in negative environmental impacts of commercial activities.

Accountants could also utilize their financial accounting skills to assist in assessing current and potential environmental costs, as well as estimating environmental provisions or contingent liabilities. This would ensure that corporations are wary of the financial consequences of environmental degradation and prompt them to undertake action to reduce their environmental impact.

The reporting of environmental performance by organizations in their corporate annual reports would allow stakeholders to evaluate the company's environmental sensitivity. Environmental management systems are desirable but whether they seek to improve the quality of life for everyone is questionable. A reporting mechanism for these systems assists in identifying whether these strategies are in line with conserving resources for the future. Environmental reporting allows stakeholders to assess not only the financial position of the entity in the corporate annual reports but also its social and environmental position. This would compel companies to reduce their environmental impact, thereby protecting their corporate reputation and economic well-being.

Accounting practitioners in the South Pacific should be encouraged to develop an integrated set of environmental management and reporting information about their organization. A professional require-

ment for the study of environmental accounting (similar to Philippines) could also be imposed by accountancy institutes. Expertise from other accountancy institutes, especially those in Australia (such as Australian Society of Certified Practicing Accountants and Institute of Chartered Accountants in Australia who are all involved in environmental accounting developments in their country), and New Zealand, may assist to developing an environmental accounting practice for the South Pacific.

Accountants in Fiji are reluctant to react to the environmental agenda in the absence of mandatory enforcement mechanisms such as environmental legislation and accounting standards (Lodhia, 2003). However, with the passing of the Sustainable Development Bill for Fiji in the foreseeable future, the necessary legislative authority for the protection of the environment would be in place soon (Lodhia, 2001). This could prompt accountants to be the leaders in environmental consciousness in organizations. It is hoped that other South Pacific Nations will have strict environmental legislation enforced in the foreseeable future. Similarly, a need arises for specific mandatory requirements and voluntary guidelines for environmental accounting in the South Pacific region.

South Pacific accountants could improve their knowledge in environmental matters through the education process. Courses in environmental science could be picked up by them. Potential accountants could undertake courses in both accounting and environmental science disciplines in order to be specialized in environmental matters. The University of the South Pacific could assist in this regard by reflecting on sustainable development in both science and commerce courses.

Proposals for localised uniformity of accounting practices in developing and underdeveloped nations (see for instance, Samuels and Oliga, 1982, Perera, 1989) could be undertaken by South Pacific nations in regard to environmental accounting. These nations exhibit similar environmental problems and accounting practices and thus, some level of standardization in environmental accounting practices is essential. They do not always need to be reliant on the developed world but could work towards resolving environmental issues through cooperation and sharing of expertise within themselves.

## **Conclusion**

This paper has indicated that environmental problems for South Pacific Island nations are quite severe and has suggested environmental accounting as a possible mechanism for encouraging environmental sensitivity by organizations in the South Pacific. It has been highlighted that accounting has a broader role in society than just being a number crunching and reporting tool. The 'social significance' of accounting is important. One such significance emerges from adopting environmental accounting. This paper has articulated the possible role(s) of accountants in environmental management. It has also discussed the potential of environmental reporting, with emphasis on the potential utilization of such approaches for corporations in the South Pacific. A lack of enforcement mechanisms such as stringent environmental legislation and guidelines, coupled with a lack of knowledge in environmental matters by accountants, is believed to have caused impediments to the progress of environmental accounting in the South Pacific.

This paper has practical and policy implications, indicating both the current status of environmental accounting in the South Pacific region as well as stipulating its potential for future development. It calls for an improvement in both mandatory and voluntary environmental accounting requirements as well as the educational process of accountants in South Pacific in order to equip them with the necessary skills for environmental accounting. Standardization of environmental accounting within the South Pacific and stricter environmental legislation are also needed.

The environment, it ought to be reasserted, does not belong to us; rather we belong to the environment. If we contaminate our own bed, we will suffocate in it.

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