

# Assessing Natural Environmental Disclosures of POMSoX Entities

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## 1. Introduction

This study examines the Natural Environment Disclosure (NED) of accounting practices of Port Moresby Stock Exchange (POMSoX) entities of Papua New Guinea (PNG), based on a Web crawler and automated content analysis. It is a timely study because it builds upon Brown, Tower and Taplin's (2004) empirical work on the environmental accounting practices of Pacific Island Countries' entities, where the level of NEDs is very low. As such this study provides useful insights into the environmental accounting practices of the developing world, particularly in light of the global spread of narrowly constructed International Financial Reporting Standards (Brown and Shardlow, 2004), an observable increase in Australian donor funding to PNG (AusAID, 2004), and the steadily increasing but still limited Internet access in developing countries (Keniston, 2004; Warschauer, 2002; Swaminathan, 2001).

This paper also emphasizes the idea of sharing developed country knowledge and Natural Environment Disclosure techniques, particularly in light of an earlier study on accounting practices on Pacific Island Countries (PIC) entities that found Western accounting systems held some sway over the presentation and disclosure of annual report filing, timeliness, core statements of accounting and financially related disclosures of PIC entities' paper reports (Brown and Tower, 2002). The examination of Natural Environment Disclosure is of interest to practitioners and academics of environmental accounting, national and foreign governments; accounting standards boards; donor administrations; environmental groups; and those with an interest in the affairs of PNG.

It is of particular interest to PNG outsiders as one of the first studies to investigate online NEDs by developing country entities. With 6%, Internet access in PNG is low (ITU, 2004). The situation is different when looking at PNG's main trading partners (ITU, 2004; DFAT, 2004): Australia (57%), United States (55%), United Kingdom (42%), New Zealand (53%) and Japan (48%). It is possible, therefore, that POMSoX entities try to make NEDs available electronically to key stakeholders from these countries.

## 2. Approach

Society's concerns about environmental issues are increasing (Deegan 2004). Environmental reporting acknowledges these concerns by disclosing the impact of an entity's activities on the environment, and about the entity's performance in minimizing this impact (Lorraine, Collison and Power 2004). Willums (1998) suggests that investors need environmental information to assess the risks of environmental degradation on future financial and investment operations. Epstein (1996) points out that financial analysts need to be aware of potential environmental liabilities to evaluate an entity's financial condition. This paper is an exploratory look at NEDs by POMSoX entities and addresses two main research questions:

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- What is the extent of online NEDs by POMSoX entities?
- Are there differences between online NEDs of POMSoX entities and the hardcopy NEDs made by entities in the Pacific Island Countries and from SPSX?

The difficulty with using relatively sophisticated Western environmental disclosure indices is their limited applicability in an emerging region where a sense of Western environmental consciousness may be less developed (Gamble, Hsu, Jackson and Tollerson, 1996). To accommodate a developing world paradigm Brown, Tower and Taplin (2004) developed a simplified NED index based on the following eight categories: *General Environmental Conditions*, *Environmental Policy*, *Environmental Audit*, *Environmental Product and Process Related*, *Environmentally Financial*, *Environmental Sustainability*, *Environmental Aesthetics* and *Environmental Other*.

#### *Disclosure Indices*

This study adopts a quantitative approach to assessing the NED level of POMSoX entities using the classification of Brown and Tower (2002), who examined three reporting models (traditional, Western-narrow and Western-broad) to delineate the basis of PIC accounting practices, which includes POMSoX entities for the years ending 1997-1999. This study generates empirical evidence of actual annual report disclosures by POMSoX entities through disclosure indices. Marston and Shrivs (1991) noted the frequent use of such indices as a proxy for entity disclosures.

#### *Web Content Analysis*

The corporate world, national and local governments, news media and advocacy organizations have embraced networked information technology. Monitoring Web sites, therefore, provides a unique empirical base to unveil the conditions that lead to the introduction, transfer and uptake of knowledge.

The research method that has been most commonly used to measure voluntary disclosures is content analysis. Content analysis codifies information into various categories based on pre-selected criteria. The main problem associated with using content analysis is inter-coder reliability (Unerman, 2000). This study addresses this methodological issue by using a Web crawling agent which automatically mirrors and codes the Web sites of POMSoX entities. Such an automated approach provides scalability, speed and consistency. It alleviates methodological limitations of subjective impressions and anecdotal evidence (Scharl, 2000). Judged against human evaluation, automated methods handle dynamic Web data more efficiently and avoid inter- and intra-personal variances.

The research builds upon webLyzard ([www.webLzyard.com](http://www.webLzyard.com)), a stable and tested platform for media monitoring and large-scale Web assessment. As the dynamic character of Web content entails ongoing analysis, the webLyzard crawling agent mirrors Web sites in monthly or weekly intervals and has amassed over one terabyte of Web data since 1999. While processing markup tags and scripting elements, the agent collected the raw text including headings, menus and link descriptors. A case-insensitive pattern matching algorithm based on regular expressions (Scharl, 2004) identified text fragments related to a NED checklist. To approximate the relative importance of the concept COMPLIANCE, for example, the system queried for the following: *^penalt(y/ies)?\$, ^environmental laws?\$, ^regulatorybreach(es)?\$ and ^regulatory requirements?\$.*

## Republic of the Fiji Islands

Fiji is an independent Pacific Island Country, gaining independence in 1970. It has a population of nearly 900,000 made up of 50 percent Indigenous-Fijians, 45 percent Indo-Fijians and 5 percent across a number of minority groups (DFAT, 2004). Although Fiji is one of the most advanced PIC, it is a developing country with large sectors in subsistence agriculture, tourism, sugar and garments. It has experienced high emigration (particularly after the coups of 1987), political uncertainty and a constrained economy (DFAT 2004). In Fiji, only 6.7 percent of the adult population has regular access to online services (ITU, 2004). There has been a considerable move by international forces on Fiji to become more environmentally conscious (UNEP, 2004).

### 3. Results

The results for the present study have been compared against a NED study conducted on companies from the Pacific Island(PIC) countries in 1999 and Fiji companies (PoMSox) in 2002.

NED Categories	PomSOX 2004 Mean %	PIC 1999 Mean%	PoMSox vs PIC Diff%	SPSX 2002 Mean%	SPSX vs PIC Diff%	PoMSOX vs SPSX Diff%
<i>General Environmental Conditions (GEC)</i>	44	11	33	10	(1)	34
<i>Environmental Policy (EP)</i>	0	9	(9)	0	(9)	0
<i>Environmental Audit (EA)</i>	0	2	(2)	0	(2)	0
<i>Environmental Product and Process (PaPr)</i>	100	20	80	80	60	20
<i>Environmental Financial (FRD)</i>	0	2	(2)	0	(2)	0
<i>Sustainability (ES)</i>	0	7	(7)	0	(7)	0
<i>Environmental Aesthetics (Aest)</i>	0	4	(4)	0	(4)	0
<i>Environmental Other (EO)</i>	11	18	(7)	10	(8)	1

Tab. 1: PoMSOX Entities' Individual NED Practices

### 4. Discussion

The highest level of disclosure among PoMSOX entities achieved the *Environmental Product and Process* category with a mean of 100%, followed by *General Environmental Conditions* with 44%, *Environmental Other* with 11% and *General Environmental Conditions* with 10%. However, no POMSoX entity disclosed *Environmental Financially Related Data*, *Environmental Policy*, *Environmental Audit*, *Environmental Sustainability* or *Environmental Aesthetics*. POMSoX entities generally disclosed more information regarding NED as their PIC counterparts. The greatest difference between NED by POMSoX and PIC entities appeared in the category *Environmental Product and Process* (mean difference of 80%). On further examination, it turned out that the narrative about *Environmental Product and Process* was limited and did not explicitly indicate the companies' desire or efforts in producing environmentally friendly products and services. The companies had used their online reports as a forum to promote products and services without adequately addressing their impact on the environment. The results of the study demonstrate that a lot more work needs to be done to impel POMSoX entities to publish NEDs. Whilst natural

environmental issues are of critical concern in PNG, there seems to be insufficient external and internal impetus to help POMSoX entities increase their NED.

There was a remarkable similarity between the level of NED by PoMSOX entities and SPSX entities. Apart from *General Environmental Conditions* and *Environmental Product and Process*, there was no or little difference between PoMSOX and SPSX entities. We conclude therefore that in answer to the second research question, there is little difference between PoMSOX and SPSX scores of NED.

PNG Accounting Statements are based on International Accounting Standards/International Financial Reporting Standards (IAS/IFRS), but none of these international standards touch upon natural environmental issues. Apart from the impending destruction of the planet by business, there are no apparent short-term financial incentives for IASB members and funders to produce environmental standards. Thus the effects of the IASB standard setting process are two-fold. First, by adopting IFRS, an entity, either from the developed or developing country region, is able to defend and legitimize its non-NED policy by pointing to the lack of international standards by the apparently more informed IASB. This reflects Cooper and Sherer's (1984) view of legitimacy theory at the societal level (rather than at the organizational level) where accounting, acting as a subset of the ruling hegemonic power, serves to support the ruling powers' activities. Second, by enjoining all entities in accepting IFRS and, as a consequence, not reporting NED, the tight circle of funders of the IASB (elite stock exchanges, Big Four accounting firms, and multinational corporations) are able to use their membership to bolster and maintain the status quo of the natural environment by not producing IFRS on the natural environment. This is the danger of allowing a well-resourced, narrowly focused international body to generate and disseminate global reporting standards; it is not just the sins of commission but the sins of omission that may create problems. By adopting international accounting standards that are in denial of environmental issues, developing country entities are given a license of denial. We are not stating causality here. We are suggesting that if the IASB presented IFRS standards on the natural environment, it may guide developing country listed entities on how to make natural environment disclosures

NED results are very low and consistent with what Brown and Tower (2002) term as Traditional Reporting Model. *Environmental Financially Related Data* requires a commitment by an entity not only to acknowledge an environmental issue but to translate that issue into a piece of financial information. PoMSOX entities, it appears, are unwilling or possibly unable to perform this function. High costs, the lack of environmental auditing expertise, the lack of environmental guidance from IFRS and PNG Accounting and Auditing Standards may account for the low *Environmental Audit* score. *Environmental Aesthetics* disclosure may be very low because of a lack of an aesthetic appreciation of the environment by its reporters. Perhaps the natural environment, in a Melanesian context, is appreciated in a tacit way rather than in an overt fashion and thus avoided in written reports. *Environmental Product and Process* had the highest score of 100%. This is quite remarkable given Brown et al's (2004) low scores in PIC. One might conjecture either environmental consciousness has increased over time, or the PoMSOX itself may have made some explicit or implicit push for their entities to become more accountable to win over Western foreign investors. The results not only show the paucity of consideration of NED by the preparers of PoMSOX annual reports, but also reflect the scant regard international financial reporting statements, international accounting firms, domestic and overseas governments give to natural environment issues.

Despite the efforts of multilateral aid organizations and the depth of natural environmental legislation in PNG, the results of the study demonstrate that a lot more work needs to be done to impel both PoMSOX and SPSX entities to disclose natural environment disclosures. Whilst the trappings of the relatively new exchanges in Papua New Guinea and in Fiji may account for the greater NED than that made by its PIC counterparts, there seems to be insufficient impetus to help both PoMSOX and SPSX entities increase

their NED. Future research should consider how environmental pronouncements by the International Accounting Standards Board (IASB), or the recent influx of Australian administrative experts into PNG affairs might help PoMSOX entities achieve this goal.

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