BALANCING SUSTAINABILITY AND EFFECTIVENESS IN EMERGENCY RESPONSE: AN INITIAL EXPLORATION USING CONTENT ANALYSIS

ABSTRACT
Emergency services organisations are designed for quick response to sudden natural and manmade catastrophic events. In the light of heightened global awareness of the need for improved organisational sustainability, there is an increasing social requirement to ensure that all institutions can demonstrate an appropriate level of resource usage. In this paper, the Authors use a ‘weak’ definition of sustainability, in particular, the ‘eco-sustainability’ concept developed by Ball and Milne (2005) to examine a single case study of the State Emergency Services (SES) Australia, using Content Analysis research techniques.

Keywords: accountability, environmental sustainability, volunteers, not-for-profit

INTRODUCTION
A review of recent media coverage highlights the impression that organisations - including government, commercial and volunteer groups - are giving greater consideration to sustainable development. This development has been gaining momentum since the early 1990s (Gray, Bebbington, & Walters, 1993) and has led to criticism of the traditional financial reporting framework (Gutherie & Boedker, 2006), and its ability to provide a complete view of an organisation’s activities and responsibility to society (Elkington, 1997). In response, various alternative reporting frameworks have developed within the social and environmental literature that seek to integrate a firm’s social and environmental achievements into a unified performance reporting framework (e.g. Yongvanich & Guthrie, 2006). In trying to conceptualize ‘sustainability’ in financial reporting there is little consensus on a common framework or even the scope of sustainability reporting.

In the light of this regulators and industry associations have recognized the importance of industry setting when determining sustainability policy and reporting requirements. The Global Reporting Initiative in their 2002 Sustainability Guidelines state that “...the GRI recognizes the limits of a one-size-fits-all approach and the importance of capturing the unique set of issues faced by different industry sectors”
Unfortunately general comparison of the social and environmental performance of organisations becomes very limited without some alignment to the concerns and issues prevalent in a specific industry context. Furthermore, only a limited number of academic studies have attempted to address the reporting of social and environmental accountabilities at an industry level (Guthrie, Petty & Ricceri, 2007). According to Guthrie, Petty, Yongvanich, and Ricceri (2004), the generalized nature of most disclosure instruments is a limitation on the accuracy of the output of empirical studies, and introducing greater situational specificity into the coding process represents an avenue for potential improvement. This paper attempts to extend the current research on sustainability reporting to using an industry-based approach to examine both sustainability performance and the level of reporting of a large volunteer emergency services organisation: the State Emergency Services (SES), Australia. This case study is an empirical analysis of the sustainability issues that apply within emergency response organisations by using reporting frameworks already accepted in accounting literature.

**STUDY CONTEXT**

The State Emergency Services (SES) is an Australia-wide volunteer agency that is managed at a state level with the dual role of mitigation and response to floods, storms and tsunamis. The NSW SES response effort is covered by 17 Regional Offices and 229 Units (that are responsible for areas roughly equivalent to local government boundaries) and staffed by approximately 10,000 volunteers (SES, 2008) (Figure 1). The SES, as a Control Agency for the above emergencies, is responsible for both defining and executing policy in the management of these activities and for providing resources to encourage best practice. In that capacity the SES advises other key stakeholder agencies in emergency response such as the Police, Fire and Ambulance Services. The SES has led the development of a set of national guidelines on various aspects of flood management (Emergency Management Australia, 1999a; 1999b; 1999c), and continues to work to ensure that this information is communicated and used effectively at all levels of government in Australia. This paper will explore the interaction between sustainability and the service delivery outcome performance for the NSW SES using Legitimacy Theory to help explore this interaction.
LITERATURE REVIEW

Legitimacy Theory predicts that organisations continually seek to ensure that they operate within the bounds and norms of their respective societies and by adopting this perspective, an organisation would voluntarily report on any activities that management perceived as required by the community. This is over and above the normal legally required documents that form part of mandatory reporting activities (e.g., Annual Financial Reports, Public Policy Statements). This theory relies on the notion that there is a ‘social contract’ which is used to represent the multitude of expectations that society has on an organisation’s operations. As societal expectations change over time, an organisation needs respond to the environment in which it operates (Deegan, 2000). Given the increasing attention on the environmental impact of human activity (Milne, 1996), there has been increasing criticism of traditional organisational public reporting (Rahaman, Lawrence & Roper, 2004) and a subsequent development of alternative frameworks for sustainability reporting (Guthrie, Cuganesan & Ward, 2008). Unfortunately, there is yet to be consensus on comprehensive sustainability reporting framework(s).

Lindblom (1994) proposes that if an organisation perceives its legitimacy is in question then it can adopt a number of strategies: seek to educate and inform its stakeholders about changes in performance and activities; or seek to change perceptions - but not change organisational behavior; or seek to manipulate perceptions by deflecting attention from the issue of concern; or change external expectations of its performance. These alternatives can be pursued through public disclosure of information, and many empirical studies of social and environmental reporting have used this explanation for voluntary disclosures (Guthrie et al., 2004). Although there is limited research on industry specific sustainability, there have been some attempts to identify industries that are more or less likely to disclose sustainability (Guthrie et al., 2008).

The SES, a volunteer service provider with a focus on rapid response to unforeseen environmental events and associated preventative activities, falls into this category. It has a strong participation of
volunteers who interact with the community as a social contract, and it is expected that there would be a relatively low level of public disclosure of sustainability. Habermas’ (1976) approach to Legitimacy Theory provides a critical perspective that highlights the moderating influence of societal acceptance of socio-political norms. In the case of the SES, these norms revolve around the political legitimacy of its roles in disaster management, and especially in relation to its role as the lead agency in the preparation for and management of floods, storms and tsunamis.

For Legitimacy Theory to drive sustainability reporting, organisations must continually appear to be operating in a manner consistent with societal values (Guthrie & Parker, 1989; 1990). This is inline with the increasing public call for organisations to report their impact on the physical environment (Milne, 1996; Guthrie et al., 2007) and is often achieved through publicly available social reporting. A related theory to Legitimacy Theory, commonly known as Stakeholder Theory, suggests that all stakeholders have a right to information about how organisational activities impacts them, even if they choose not to use the information - and even if they do not directly play a constructive role in the survival of the organisation (Deegan, 2000). Thus, organisations will elect to voluntarily disclose information about their intellectual, social, and environmental performance, over and above mandatory legal reporting requirements in order to address perceived stakeholder demands.

Legitimacy Theory as a measure of sustainability and other such social reporting is closely tied to the use of Content Analysis Methods (Guthrie et al., 2004). Organisations are more likely to report on their sustainability performance if they are specifically required to, as they cannot legitimize their status via the hard assets that are commonly recognized as symbolic of institutional success. This approach is consistent with the accounting literature on social and environmental reporting as well as intangibles such as intellectual capital (Guthrie et al, 2004), and as a consequence, studies based on Legitimacy Theory have tended to focus on increased sustainability reporting driven by management’s response to their perception of key stakeholder views (Burns & Scapens, 1996). This externally focused frame is considered useful as it can be ‘supported by evidence’ (Campbell et al., 2003). In addition, changes to reporting and related
management controls to address sustainability concerns could be relevant for all state government entities (DiMaggio & Powell, 1983) or due to specific forces operating within the SES producing unique outcomes (DiMaggio & Powell, 1991). There is a need to also examine the internally focused processes that are driving change. The use of a case study approach with only a loose link with current theory can help mitigate the risk of researcher bias to “…avoid thinking in advance about specific relationships between variables and theories” (Eisenhardt, 1989: 536). Thus, examination of a single case study may assist with understanding the key drivers for sustainability (Otley & Berry, 1994), this aspect will be discussed further in the Methodology of this paper.

In the supply chain and accounting literature there has been an increasing call for environmental reporting (KPMG, 2005; Schaltegger & Burritt, 2000). In addition, there is considerable debate in the academic literature on the conceptual and operational definition of sustainability. The concept of a ‘weak’ definition of sustainability is that it “…downplay(s) questions of equity and social justice, absolution levels of material resources and energy use …while playing up the gains to be made by more efficient use of resources and energy relative to the outputs being produced” (Ball & Milne, 2005: 317). Thus, the focus of this form of sustainability is resource efficiency or, in popular terminology ‘eco-efficiency’. Given the nature of the emergency services supply chain - with its emphasis on effectiveness and rapid response described previously - there is an organisational and management conflict between the emergency services delivered and the requirements for sustainability.

In operationalising eco-efficiency, Milne (1996) identified three dimensions within a continuum of sustainability outcomes that integrate economic, social and ecological goals. For the purpose of this study, the eco-efficiency focus mentioned above fits with institutional commitment of: medium to long-term economic performance; broad social responsibility; and an anthropocentric view of the environment. Since a complex stakeholder and adaptive supply chain network is required for emergency services to be effective there is a question as to whether sustainability is possible within one organisation within a supply chain unless the entire supply chain is sustainable in an aligned manner (Gray, 1992). However, given the
change in focus required to implement a sustainable supply chain - and the perception of high economic cost - why would an organisation with an agile supply chain implement an environmentally sustainable strategy?

The current sustainability literature offers some answers. One clue is the nature of the output of emergency services, with consumer satisfaction being perceived in terms of primarily rapid emergency response to unforeseen and largely uncontrollable events, with cost efficiency being a secondary concern. In addition the volunteer nature of the SES (specifically) with its workforce drawn from and supported by the local community may also have a moderating effect on perceived sustainability both in terms of the initial lower economic direct cost (compared to other emergency services organisations) and re-enforcing the nature of the activities that need effectiveness - in preference to - efficiency. Since a significant part of the emergency services value chain is delivered by private organisations and co-ordinated by a ‘front line’ agency, this may have a material impact.

**METHODOLOGY**

The focus of this paper is to explore the importance of sustainability to the SES, and understand the drivers for sustainable performance and their identification in reporting documents. Consistent with the framework developed by Llewellyn (2001), that highlights the links between empirical research and theory, this paper uses a single case study with document analysis. The approach is to avoid predictive statements, to allow themes to emerge from the data, and focus on *outcomes*, especially where financial or efficiency considerations are secondary (Kollman & Prakash, 2000). The data used for analysis for this paper included publically available SES documentation such as Annual Reports, strategy documents, planning documents, organisational newsletters, etc.

**Analysis of Narrative Content**

The extant literature on public disclosure by corporate and government institutions adopts a variety of approaches to the analysis of narrative content. These are summarized in Figure 2. The implicit underlying construct of interest is generally the ‘quality’ of disclosure. In addition, the major distinction is between
subjective analysts’ ratings and semi-objective approaches. Of the semi-objective approaches, many specify, *ex ante*, a list of items and analyze key institutional documents (including web-based sources) for these items, while ignoring sections of the text that do not relate to this list. This approach is adopted by the majority of disclosure index studies and, therefore, has been adopted in this paper. It is an objective, form-oriented Content Analytic method. Other approaches encompass all of the text (textual analyses) and these include thematic, meaning-oriented Content Analysis, readability studies and linguistic analysis (see Beattie, McInnes and Fearnley 2001 for a broader review relating to accounting narratives).

Lang and Lundholm (1993) assume that subjective analyst’s ratings measure ‘disclosure informativeness’ and acknowledge “…a disadvantage is that they are based on… perceptions of disclosure rather than direct measures of actual disclosure” Lang and Lundholm (1993: 247). This limitation can lead to an element of subjectivity in the identification of keywords and their assignment into common semantic units (Smith & Taffler, 2000: 638). Healy and Palepu 2001: 34) criticize these ratings (which lead to a ranking of the content of sub-categories) due to: the lack of clarity as to whether the analysts take the ratings seriously; the unclear basis on which firms are selected for inclusion; and the potential biases that analysts bring to the ratings. On the other hand, due to the difficulty of directly assessing the quality of disclosure in documents, disclosure index studies assume that the quantity of specified topics content is a reasonable equivalent to quality.

Often, a simple binary coding scheme is used, whereby the presence or absence of an item is recorded. Other coding schemes incorporate ordinal measures (frequently three levels), to allow for the ‘quality’ of the specific disclosure to be assessed (e.g., is the disclosure on a specific topic merely qualitative, or is it quantified?). As a result, researchers tend to assume quantity and quality are positively related. Marston and Shrives (1991) provide a summary of the use of disclosure indices in accounting research, particularly in company Annual Reports and Accounts. In a widely cited study, Botosan (1997) constructs her own index to measure the voluntary disclosure level in 122 companies in the machinery industry. The selection
of items included in the index was guided principally by recommendations provided in *The Jenkins Report* (AICPA, 1994), the SRI International Survey of *Investor information needs and the Annual Report* (1987) and the Canadian Institute of Chartered Accountant Study of Annual Reports (CICA, 1991). Jones and Shoemaker (1994) reviewed thirty-six studies concerning the content of accounting narratives, eighteen of which focused on the corporate Annual Report (either the entire narrative content or restricted focus to specific sections such as the Chairman’s Statement. They noted that the coding unit for most of these studies was firstly ‘themes’ (which may be longer or shorter than a sentence), with words being the next most common unit used. Consistent with Guthrie *et al.* (2008), this paper argues that extant approaches to the analysis of reporting narratives suffer from two fundamental limitations: one-dimensional constructs with little consideration given to the type of disclosure when disclosure is a complex, multi-faceted concept; and analysis tends to be restricted to selected sections of the narrative in the Annual Report or focus is on specific issues or index items using a pre-selected coding scheme.

In order to assess the reporting of sustainability by the NSW SES, a disclosure instrument, with relevant content coding, was developed. The content coding was constructed using a disclosure template developed as part of the GRI Sustainability Reporting Guidelines (GRI, 2002). Each item of information has three *type attributes*: historical/forward-looking; financial/non-financial; and quantitative/non-quantitative. This framework was supplemented with items specifically relevant to emergency response services organisations in order to capture the industry emphasis. These ‘industry-specific’ items are partly identified from publicly available reports sourced from various government bodies. The processes used to obtain the industry-specific information from each of the three major sources are briefly discussed below.

**Content Analysis**

Content Analysis is a method of codifying the text of writing into various groups or categories based on selected criteria. It assumes that frequency indicates the importance of the subject matter (Krippendorff, 1980), and for Content Analysis to be effective, certain technical requirements should be met (Guthrie & Mathews, 1985). First the categories of classification must be clearly and operationally defined. Second,
objectivity is the key – it must be clear that an item either belongs - or does not belong - to a particular category. Third, the information needs to be able to be quantified. Finally, a reliable code schema is necessary for consistency.

This approach requires the selection of a unit of analysis which is “…the specific segment of content that is characterized by placing it into a given category” Holsti (1996: 116). Most Content Analyses of environmental and social reporting use sentences as the basis for coding decisions as this approach is likely to provide more complete, reliable and meaningful data for further analysis (Milne & Adler, 1999). Another higher unit of analysis is the paragraph which is a more appropriate approach than using only a word count in drawing inferences from narrative statements as complex information is commonly captured within longer narrative elements. Usually the amount of disclosure is measured by counting the frequency at both the category (e.g., Environment category in Table 1) and element levels (e.g., such as Environmental Compliance category in Table 1). An organisation’s overall index is therefore calculated according to the total amount of information disclosed.

Content Analysis is also an instrument used to measure comparative positions and trends in the composition of documents, and has been used extensively to assess reporting patterns and disclosures (Guthrie et al., 2004). It focuses on the content of key documents in order to gain understanding of the issues or draw conclusions. The framework for this study consisted of conducting a review of the significant and important sustainability issues and challenges facing the SES. This involved the examination of Annual Reports and other publicly available information such as environmental and social reports, websites, government reports and media releases from various industry associations, councils and government bodies (Table 1).

<INSERT TABLE 1 HERE>

In addition, content was analysed using generally accepted knowledge management and used in an accounting context to categorise the form or type of disclosure (Guthrie & Parker, 1990). The following broad knowledge categories were used: Declarative - content that can be transmitted without loss of
meaning or integrity and is not expressed in quantitative terms; **Non-monetary** - content that is expressed in quantitative terms but not in the form of monetary value, which also needs to be non-declarative in that there is a risk that meaning is changed through interpretation (e.g., non-monetary performance measures); and **Monetary** - content that is non-declarative and is expressed in terms of monetary value.

**RESULTS**

The following tables summarize the results of the Content Analysis framework that identified both physical and web-based artefacts. The selected information is from a five year period commencing from 2004 and includes all available documents up to the end of 2008 (Table 2). The web artefacts were sourced from the SES website over a two month period to December 2008.

**Disclosure by ‘Types of Disclosure’**

Table 3 outlines frequency of ‘types of disclosure’ with declarative disclosure as the dominant form, followed by non-monetary forms. Given the number of artefacts, there is a relatively large number of coding selections. This is an indication of the importance of sustainability to the SES given the relative small sample size of available published documents during the period of study. The absence of monetary disclosures is unsurprising, given the nature of the SES, as an emergency response entity focussed on service delivery effectiveness within current legislative and budgetary constraints.

**Disclosure by ‘Category’ and ‘Element’**

Table 4 outlines the frequency of disclosures in the NSW SES documents, grouped into ‘Category’ and ‘Elements’ and highlights the focus on disclosure in policy form rather than in stakeholder reporting. For the SES, as a state government entity, both annual reporting and policy documents are statutory requirements. Thus, it has equal opportunity to disclosure in either form. In addition the SES has further statutory obligation to communicate flood mitigation policy and related outcomes to a range of stakeholders. Table 5 outlines the frequency of disclosures, summarised by Category and Elements listed in Table 1, and summarises this data in percentage terms, emphasising the importance of environmental and
social performance to the legitimacy of SES’ sustainable emergency response operations.

<INSERT TABLES 4 & 5 HERE>

**DISCUSSION**

Australian public sector organisations are required by laws, regulations and government policy to produce Annual Reports that are tabled in parliament or council and are available to the public. The information required in these reports is significantly greater than for private corporations (NSW Government, 2009). On the other hand, there is no government regulation or key stakeholder demand specifically requiring the incorporation of sustainability reporting with SES statutory reporting obligations. However, it should be noted that aspects associated with sustainability are required to be reported as part of public sector financial accountability standards, for instance, water usage, electricity consumption, employee information (Farneti & Guthrie, 2007). While the SES is a NSW state government entity that operates within this discretionary reporting environment, it is not necessarily proven that the sustainability reporting observed was of a voluntary nature. The SES does, however, have a statutory accountability for state flood risk management and mitigation and as such, it is required to ensure that flood mitigation policies are sustainable. This obligation is a potential driver for sustainability disclosure, especially within SES flood policy and management reporting.

It is noticeable in the sustainability literature that annual reporting and the processes adopted within government enterprises, as well as private firms, that have lead to increased sustainability reporting has much to do with the self-interest of the reporting entities. In the context of Lindblom’s (1994) classification of legitimation strategies, this is more closely linked with entities seeking to educate stakeholders about the organisation’s intentions to improve their performance. This motive appears to be relevant to SES implementation of sustainability reporting with approximately 80 percent of the incidents of sustainability referencing being in published policy documents, significantly less mentioned in statutory Annual Reports, and very little reference in the web-based material. This reporting profile is consistent with an entity that is focussed on fulfilling its statutory responsibilities with limited attempts to extend
beyond this role as far as sustainability is concerned. This is not intended as a criticism of SES, given that it is entirely consistent with its stated objectives and operational focus on ‘effectiveness over efficiency’. The SES has not planned regular community information programs concerning sustainability practices, instead it engages in community development in an ad-hoc fashion to respond to calamities that occur. Again, this is consistent with the extent literature for not-for-profit entities generally. The approach followed by the SES was to influence key stakeholder (i.e. community and volunteers’) actions on sustainability in ad hoc and verbal fashion rather than in written form, which is a second type of legitimation strategy described by Lindblom (1994).

In terms of the research methodology, Content Analysis has intrinsic limitations insofar that it seeks to capture meaning from narrative in a coded ‘numerical’ form. The debates are likely to continue over the reliability of coding instruments and the validity of the various content measurement approaches. A perfect Content Analysis instrument would be able to capture the totality of meaning from a narrative and convey this in a coded numerical form but in practice, all interrogation methods must accept varying degrees of imperfection. Semiotic and ‘form oriented’ approaches are limited by their inability to capture meaning whilst ‘pure’ index-based and ‘meaning oriented’ studies are constrained by their inability to describe volume. In seeking to combine the benefits of these two generic approaches, the method described in this paper has sought to capture meaning that would be inaccessible if only one of the generic approaches was used.

CONCLUSION AND FUTURE RESEARCH

Unfortunately, this research has mixed results, with limited alignment with the expectations of Legitimacy Theory. This area of research is complex as emergency response organisations focus on efficiency, yet there is growing public demand for explicit disclosure on sustainability issues. As a result, there is a need for further empirical research that will explore the drivers and moderating factors that affect organizational disclosure. This then could be validated by interviews with senior management and further explored with key stakeholders and associated community groups.
REFERENCES


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Kollman K & Prakash A (2001) Green by Choice? Cross-National Variations in Firms' Responses to EMS-
Based Environmental Regimes *World Politics* 53(3): 399-430.


Figure 1: Typical Australian Emergency Services Structure e.g., NSW State Emergency Services
(Iannella & Henricksen, 2007)

Figure 2: Summary of the approaches to the analysis of narratives in Annual Reports
(Beattie et al., 2001)
<table>
<thead>
<tr>
<th>Category</th>
<th>Element</th>
<th>Sub-Element</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environment Performance</strong></td>
<td>Environmental policy &amp; management strategies</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Environmental compliance</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Environmental awards</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Environmental programs</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Materials</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Energy</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Biodiversity</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Emissions</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Effluents</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Waste</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Packaging management</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Supply chain management of environmental issues</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Social Performance</strong></td>
<td>Human Rights</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Animal Welfare</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Element</th>
<th>Sub-Element</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Service Delivery Responsibility</strong></td>
<td>Service delivery / product safety</td>
<td>Delivery safety and quality controls on food safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supply chain management and value chain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Livestock, crop, exotic diseases and pest control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customer health and well-being</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Variety of services with consumer choice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cultural considerations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organics – <em>use of naturally occurring raw materials in transformational production processes</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accurate labeling and deployment of service</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use of fertilizers, chemicals and pesticides</td>
</tr>
<tr>
<td><strong>Labour Practices</strong></td>
<td>Compliance with Australian &amp; NSW State Industrial Relations legislation and standard industry practice.</td>
<td></td>
</tr>
<tr>
<td><strong>Responsible marketing</strong></td>
<td>Responsible promotion of products, engagement in consumer education, awareness raising of potential negative impacts of services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Signatory to codes &amp; guidelines on responsible promotion/delivery of services</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Content coding scheme for NSW SES documents adapted from Global Reporting Initiative, 2002 and Guthrie et al., 2008)
Figure 3: Incident coordination in Australia based on AIIMS/Multi-Agency Incident Management Guide EMA, 1998 (Iannella & Henricksen, 2007).

<table>
<thead>
<tr>
<th>Document Type</th>
<th>Physical Artefacts</th>
<th>Web Artefacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Reports</td>
<td>5 Years (2004-2008 inclusive)</td>
<td>Nil</td>
</tr>
<tr>
<td>Public Policy</td>
<td>3 State Plans (current flood, storm and tsunami); 4 Guidelines (e.g., land use, building codes, land sub-division); 1 Corporate Strategy brochure</td>
<td>Nil</td>
</tr>
<tr>
<td>Newsletters and Public Relations</td>
<td>1 <em>History of SES</em> (book)</td>
<td>2 Newsletters (SES website 2008)</td>
</tr>
</tbody>
</table>

**Total Documents** 11 Artefacts

Table 2: Summary of NSW SES reporting documents analysed from the period 2004-2008 (five years)

<table>
<thead>
<tr>
<th>Form of Disclosure</th>
<th>Frequency</th>
<th>Disclosure %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declarative Disclosures</td>
<td>354</td>
<td>79 %</td>
</tr>
<tr>
<td>Non-monetary Disclosures</td>
<td>80</td>
<td>21 %</td>
</tr>
<tr>
<td>Monetary Disclosures</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Disclosures</strong></td>
<td><strong>434</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Table 3: Frequencies by ‘Type of Disclosure’ from NSW SES documents
<table>
<thead>
<tr>
<th>Form of Disclosure</th>
<th>Annual Reports</th>
<th>Public Policy Documents</th>
<th>Websites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Performance</td>
<td>2</td>
<td>151</td>
<td>2</td>
</tr>
<tr>
<td>Social Performance</td>
<td>1</td>
<td>126</td>
<td>1</td>
</tr>
<tr>
<td>Service Delivery Responsibility</td>
<td>60</td>
<td>77</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total Category Disclosures</strong></td>
<td><strong>63</strong></td>
<td><strong>354</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Table 4: Frequency distribution of disclosure categories and elements in NSW SES documents

<table>
<thead>
<tr>
<th>Form of Disclosure</th>
<th>Annual Reports</th>
<th>Public Policy Documents</th>
<th>Websites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Performance</td>
<td>&lt; 1%</td>
<td>35 %</td>
<td>1%</td>
</tr>
<tr>
<td>Social Performance</td>
<td>&lt; 1%</td>
<td>29 %</td>
<td>2%</td>
</tr>
<tr>
<td>Service Delivery Responsibility</td>
<td>14 %</td>
<td>16 %</td>
<td>2 %</td>
</tr>
<tr>
<td><strong>Total Category Disclosures</strong></td>
<td><strong>15 %</strong></td>
<td><strong>80 %</strong></td>
<td><strong>5 %</strong></td>
</tr>
</tbody>
</table>

Table 5: Percentage distribution of disclosure categories and elements in NSW SES documents
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