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EDITORIAL

The *first feature article* in this final edition of the *Journal of the Asia Pacific Centre for Environmental Accountability* for 2010 examines the highly topical area of water accounting. Water vies for top billing with carbon emissions reduction when critical environmental issues are the focus. Raja Adzrin Raja Ahmad, Greg Tower, Julie Plummer and Norhani Aripin in their article *Transparency and clarity of water accounting reporting* address the lack of information about water provided by authorities in Australia. The recommendation is greater transparency. But is the macro approach, as represented, the way to go or does a bottom up approach hold the key to better transparency? The debate begins here.

Feature article number two is entitled *The increasing involvement of accountants in corporate sustainability management*. Written by expert European academics Dimitar Zvezdov, Stefan Schaltegger, and Martin Bennett, the article compares sustainability accounting in the United Kingdom and Germany over a two-year time horizon through 60 interviews with parties involved with sustainability in leading companies. So what is happening in Asia? We need a response from APCEA members.

The December issue provides information about recent happenings, in *Environment extra!* and concludes with *calls for papers*.

Finally, the current format of the *Journal* is under consideration and changes will be revealed in March 2011. If you wish to check the new style when it appears then we will be pleased to send you a copy in return for your completed subscription form. Please note that the subscription has been increased to \$50 per annum from 2011.

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Notes for contributors

Manuscript requirements

Articles should be submitted in a word document, Times New Roman, 12 point, single spaced, **single column**, and attached to an email.

References should be in the UniSA Harvard referencing style, available from the following link:

http://www.unisa.edu.au/cags/APCEA/instructions_for_authors.asp

As a guide to authors, articles should be no more than 6,000 words unless negotiated with the editors. The submission of shorter articles is particularly welcome. Each article should be preceded by an abstract of no more than 100 words.

To ensure anonymous review, authors should not identify themselves directly or indirectly in their manuscript. A separate cover page should show the title of the manuscript; the author(s)'s name(s); position(s); affiliation(s); and contact details.

The reviewing process

Feature articles are independently reviewed by members of the Editorial Board in accordance with the requirements for classification as a C1 journal article in Australia: 'For the purposes of the HERDC, an acceptable peer review process is one that involves an assessment or review of the research publication in its entirety before publication by independent, qualified

experts. Independent in this context means independent of the author’.

Each article published in the *Journal of the Asia Pacific Centre for Environmental Accountability* is blind reviewed by at least two members of the Editorial Board. The journal is listed on the ARC's ERA 2010 journal list which is considered acceptable as evidence of peer review for HERDC purposes.

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Editorial objectives

The objectives are: first, to explore the development of ideas about environmental and social accounting, reporting, accountability and assurance. Submission of research from all methodologies and methods of research are welcome, e.g. qualitative, quantitative and mixed methods. Second, to promote environmental, social and sustainability accounting, accountability, reporting assurance, and taxation research to members of APCEA, professional and academic accountancy and finance academics, professional bodies and governments.

Editorial criteria

Major criteria used to evaluate papers are:

- subject matter must be of importance to the accounting discipline;
- research question must fall within the journal's objectives;
- research is well designed and executed; and
- Presentation is well written and conforming to the journal's style.

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TRANSPARENCY AND CLARITY OF WATER ACCOUNTING REPORTING

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Abstract

The transparency and clarity of water accounting communication in thirsty, dry Australia is explored in this study. Analysis of Australian water authorities reveals that these government-owned entities are in a strong financial position with clear communication of core water infrastructure and related expenses. However, there is only limited information about water-related issues including quality, valuation, and storage capacity. There is a surprising dearth of information about the total available water inflows and outflows of the entire water cycle. The disclosure of transparent and comprehensive water accounting is advocated as it would assist water policy decision-making.

Key words: Communication, Water, Environment, Accountability

1. Introduction

Water is of immense importance to all aspects of life, society and our natural environment. The accelerated increase in global population over the last century coupled with intense economic development is causing unprecedented pressure on this precious commodity. The current world population of 6.7 billion is expected to increase to 9 billion by 2050 but even in a country like Australia with a small population of 21 million and limited population growth there is immense pressure on the water supply (PRB 2008).

Water is hardly scarce given the planet is mostly covered with water and Australia, the island continent, is surrounded by water. It is the composition of the water that is problematic as 97.5% is saltwater and only 2.5% the freshwater resource. Out of that, merely a fraction is usable freshwater for ecosystems and human consumption since nearly 70% of the world's freshwater resource is locked in glaciers and icebergs rendering it unavailable for human use (UNESCO 1999). Moreover, in Australia, much of the land-based water is saline, but ancient fresh groundwater resources such as the Yarragadee, are also largely unavailable as renewal is limited and large-scale extraction may cause ecological mayhem.

Scarcity and use of water is now a global concern. Physical water scarcity is a dire reality and poses a serious threat to economic development and human well-being. The acceptance of an undaunted desire for economic growth has arguably caused an exponential increase in water consumption resulting in another facet of crisis in water scarcity. The seemingly relentless conduct of human activity constantly to embrace development and advancement in our growing technocratic-

industrial societies is fuelling the demand for this indispensable resource (Devall & Sessions 1999). For example, one car tyre requires 2 m³ of water to manufacture, one tonne of steel consumes 260 m³ of water and even a T-shirt demands 25 m³ of the precious commodity to water plants for the 250g of cotton used (Holbrook 2009). Dietary changes, especially increased meat consumption in the developing world, are also creating greater water use. It takes over seven times as much water to produce a kilo of beef (15 m³) than a kilo of vegetables (2 m³) (Economist, 2009b). This global trend will have dramatic consequences, for instance, in the last twenty years the average person in the Peoples' Republic of China increased their meat consumption from 20 to 50 kg per annum – this translates into an increase of water use that matches the entire consumption of Europe (Economist, 2009a). This greater demand for water may be borne in the consuming country or in countries producing meat for animal production-ultimately somewhere this need must be met. Industrial and domestic demands are part of a larger complex mosaic that together places intense pressure on global water supplies.

Water management involves balancing a complex set of economic interests, environmental concerns and societal issues (Rosegrant 1997). Each party concerned has a responsibility to ensure that each precious drop is being managed efficiently and allocated effectively in a manner that is environmentally sustainable. Sustainability, the desired goal of development and environmental management (Brown, Hanson, Liverman, & Merideth, 1987), is often defined as “meet[ing] the needs of the present without compromising the ability of future generations to meet their needs” (World Commission on Environment and Development 1987 p.43). With regard to sustainable water resource management, the objective is maintaining water resource availability for future

generations without jeopardising its quality in the long run (Mudd 2008). Gleick (1998) posits that sustainable use of water should be an integral part of long-term water planning as without it we seriously risk human and ecological survival.

The basis of water sustainability involves the maintenance of a desired flow of benefits to a particular group or place indefinitely (Gleick 1998). In other words, this involves the maintenance of benefits (which include the stock and flow of water) to the current users, without diminishing the benefits to future users. Australia is one of the most arid countries yet has one of the highest per capita uses of water in the world (Slattery 2008). Thus, water sustainability is an important issue for this inhabited continent island.

Various studies have been conducted worldwide in diverse disciplines to address water crisis issues encompassing water governance, water availability, ecological concerns, and water management (e.g. World Water Assessment Programme 2003, 2006, 2009). Although much emphasis has been placed on the issues surrounding this essential commodity, far less research has been conducted empirically to examine the reporting of water accounting. The best way to account for water is still an unresolved debate and how water should be reported demands immense attention (Godfrey 2008). Accordingly, accountants play a pivotal role in ensuring that water is being communicated transparently and accountably to ensure that stakeholders are able to make informed judgments. Most of the literature on water accounting is descriptive in nature. As such, empirical investigation of water accounting remains a neglected area, still in its infancy. Therefore, this paper seeks to reverse this trend and asks how full is our ‘cup of water’, to what degree do water authorities have the financial wherewithal to supply water, how well is this being publically

reported, and is the key information readily accessible to water management decision-makers? This study specifically examines the current state of water accounting by Australian water authorities. The analysis first examines the ‘financial’ strength of the Australian water authorities, then highlights the higher level of ‘water infrastructure’ details provided but also the paucity of information relating to the ‘water’ itself.

The following section reviews the relevant literature in relation to water issues globally and then with a specific focus on the Australian context. The final two sections summarise the presentation of the financial strength and level of water-related communication by the major Australian water authorities with related implications and conclusions.

2. Literature review

The literature below highlights many of the key issues with water management and water accounting by first reviewing some of the key global literature then focusing on Australian experience.

2.1. Global water accounting studies and insights

Freshwater is considered the lifeblood of human civilisation and a vitally important non-substitutable resource (Alivia, Jha, & Sanjeev, 2008). The World Water Assessment Programme (2009, p vii) stresses that “urgent action is needed if we are to avoid a global water crisis”. Further, “[m]anaging water is essential if the world is to achieve sustainable development. This challenge is even more pressing as the world confronts the triple threat of climate change, rising food and energy costs, and the global economic crisis. (World Water Assessment Programme, 2009, p. v).

Maunder and Burritt (1991) examine the ecological crisis and the role of accounting information. They argue that the monetary representations of accounting information cannot fully capture the ecological impacts created by an entity (such as the depletion of the ozone layer resulting from an entity’s activities). The provision of non-monetary measurement of ecological impact, such as compliance-with-standards information, is one way of tackling this issue. Hence, they suggest that environmental assets should be examined from both ecological and accounting viewpoints to provide comprehensive reporting and add value to the accounting information. Molden and Sakthivadivel (1999) predict that future irrigated agriculture will have to produce more food with less water because of the increasing competition for this scarce resource. As a large part of the world’s population is being threatened by water shortages, these authors suggest that water needs to be appropriately accounted for to understand better the present use of water and formulate actions for improvements in water management. They state that the prime objective of water accounting is to account for water use, depletion and productivity.

Molden and Sakthivadivel (1999) then make a significant contribution by presenting a classification system on how to account for the use and productivity of water resources. Their ‘Water Balance Approach’ (see Figure 1) outlines a broader way to perceive the water cycle where it is based on the concept of mass conservation, the sum of inflows equates the sum of outflows plus any changes in storage. This method presents a useful approach to the concept of water accounting at the basin level.

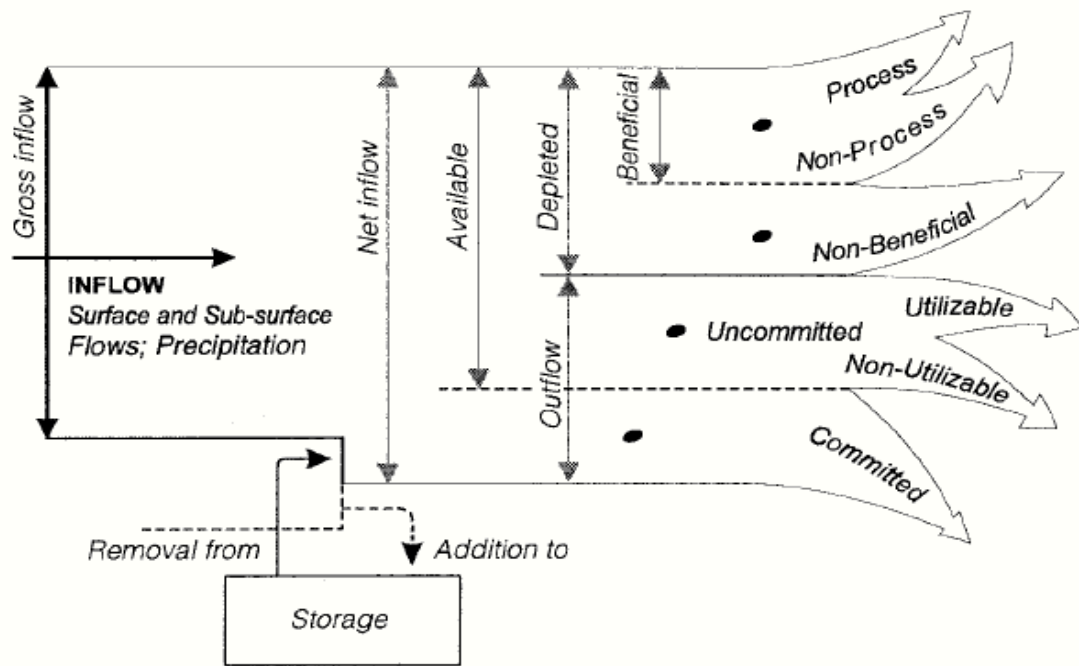


Figure 1: Water Balance Approach to Water Accounting

Source: Molden and Sakthivadivel (1999 p. 58)

Water accounting calls for different concepts and Molden and Sakthivadivel's (1999) water accounting classification of different types of water flow is a useful tool in the planning and evaluation of water resource systems. This requires different types of *inflows* (surface, sub-surface and precipitation), *outflows* (utilisable, non-utilisable) and *depleted water*¹ (beneficial and non-beneficial) with *storage* facilities serving as a buffer between different levels of supply and demand. Many similar models are available. The key is that they are trying to account for all the water in the system. The World Water Assessment Programme

¹ Water is depleted by four generic processes: (i) *evaporation*, where water is converted from its liquid form to its vapor form and transferred to the atmosphere, (ii) *flows to sinks*, where water flows into a sea, saline groundwater, or other location where it is not readily or economically recovered for reuse, (iii) *pollution*, where water quality gets degraded to an extent that it is unfit for certain uses, (iv) *incorporation into a product*, where water is incorporated into a product through an industrial or agricultural process such as bottling water, or incorporation of irrigation water into plant tissues (Molden, 1997; Molden and Sakthivadivel, 1999; Molden, Sakthivadivel and Samad, 2001).

(2009) advises that this water box is dependent on management decisions and, in turn, these are influenced by politicians, civil society, the business and economic sector, all of whom hopefully have access to good information about the resource they are influencing.

2.2. Water accounting in the Australian context

The global studies point to a myriad of problems with water management and accounting for water. This sub-section specifically examines water accounting in Australia. Young and McColl (2009) review the adverse consequences of water misspecification such as over-allocation and environmental problems. They use Australia's Murray Darling Basin as an example to expose the unfavourable economic and water management effects of the inconsistent specification of water allocation regimes and hydrological realities. Vardon et al. (2007) and Plummer and Tower (2009) review water accounting in Australia. The continent is selected for

their studies because this precious resource is scarce when compared with other landmasses, much of Australia has low average rainfall and is characterised by high and increasing levels of drought especially over the last ten years (Australian Bureau of Meteorology, 2009).

Ecological concerns and accounting for water are inextricably linked and so water accounting needs to be “a method of organising and presenting information relating to the physical volumes of water in the environment and economy as well as the economic aspects of water supply and use” (Vardon et al. 2007 p.650). In other words, water accounting focuses on the assessment and the provision of detailed information about water supply, use and water productivity. More comprehensive water accounts would provide further information on socio-economic aspects of water supply and use such as the costs of supply and tariffs charged and employment generated (Lange et al. 2007). This study examines the current status of Australian water authorities’ accounting.

There are a number of active international efforts in maintaining and reporting water accounts, the two most globally renowned are the Global Reporting Initiative (GRI) and the United Nations’ Statistics Division (UNSD) System of Environmental and Economic Accounting for Water Resources (SEEAW) framework.

Mudd (2008) argues that there still exist some areas of critical weaknesses for GRI reporting specifically in terms of the facilitation of proper water accounting. For instance some vital information, such as the extent of recycled water used, water inventories, water quality, and impacts on water resources, is not listed in the sustainable reports. Plummer and Tower (2009) note that across the world there are key water questions (including in Australia). How should water be accounted for? How should water be measured

(scientific², volume, monetary)? How can reliability and relevance of the data best be assured? Vardon et al. (2007) state that water accounting is relatively new in Australia. They suggest that water accounts, as formalised through the publication of a handbook on the SEEAW (United Nations Statistics Division, 2006), be used as a framework. Given the weaknesses of other global alternatives, the Australian Bureau of Meteorology could utilise the UN’s SEEAW framework; this would also seem a broad and comprehensive system for Australia’s water authorities who manage the country’s water infrastructure.

The United Nations Statistics Division (UNSD) created the SEEAW to provide an appropriate and systematic conceptual framework for organising and reporting the hydrological and economic information; an overview of this accounting system is presented in Table 1.

The United Nations suggests a set of supplementary tables which include flow accounts and assets accounts to capture the information on the interaction between water and the economy (see Table 1). SEEAW also includes a section on valuation of non-market flows as this is likely to be of substantial concern in the future. However, the United Nations admits there is little agreement on how to value water and that without consensus little progress has been achieved.

Overall, the aforementioned literature review indicates that ‘the earth’ is suffering from severe water supply and demand issues. Clearly, efficient management of water resource is urgently needed to ensure sustainable utilisation of the precious and non-substitutable commodity. As a consequence, detailed accounting with clear communication and better measurement for

²‘Scientific’ refers to the chemical composition and biological characteristics of water such as the level of nutrients and pesticides in water resources.

Table 1: System of Environmental and Economic Accounting for Water (SEEAW) (2005)

Category		Stated Purpose
<i>Flow Accounts (1) Physical supply and use; 2) emission accounts</i>		
1) Physical supply and use tables and 2) emission accounts (expressed in quantities)	This category of accounts brings together, in a common framework hydrological data on the volume of water used and discharged back to the environment by the economy as well as the amount of pollutants added to water. This includes physical supply and use tables as well as emission accounts.	Bringing the physical information of water in the accounting framework introduces checks and balances in the hydrological data and produces a consistent data system from individual sets of water statistics often collected independently by different line ministries responsible for designing targeted policies. The data also provides information by economic activity and households on the amount of pollutants which are added to or removed from water (by treatment processes) during use.
3) Hybrid and economic accounts (expressed in monetary terms)	Aligns physical information recorded in the physical supply and use tables with monetary supply. These accounts are referred to as “hybrid” flow accounts to reflect the combination of different types of measurement units in the same accounts. They contain information on the costs associated with water use and supply such as water abstraction, purification, distribution, and wastewater treatment. They also provide information on financing, that is, the amount users pay for the services of wastewater treatment, for example, and the extent these services are subsidised by the government and other units.	In these accounts, physical quantities can be compared with the matching economic flows (for example, linking volumes of water used with monetary information on the production process, such as value added, and deriving indicators of water efficiency). These accounts are particularly useful for cost-recovery policies and water-allocation policies and can also be compiled for activities aimed at the protection and management of water resources so as to obtain information on the national expenditure and financing by industries, households and the government.
<i>Asset Accounts (1) Produced Assets; 2) Quality of Water Resources</i>		
1) Asset accounts	This comprises accounts for water resource assets measured mostly in physical terms. Asset accounts measure the stocks at the beginning and end of the accounting period and record the changes in stocks that occur during the period. They describe all increases and decreases of the stock due to natural causes (e.g. precipitation, evapotranspiration, inflows and outflows) and human activities (e.g. abstraction and returns).	These accounts are particularly useful as they link water abstraction and return to the availability of water in the environment, thus allowing measurements of physical water pressure induced by the economy.
2) Quality accounts	This category of accounts describes the stock of water in terms of its quality (Chapter 7). Quality accounts describe the stocks of water resources in terms of quality: they show the stocks of certain qualities at the beginning and end of an accounting period.	It should be noted that the quality accounts are still experimental and there is yet to be agreement on a standard way of compiling them. Since it is generally difficult to link changes in quality to the causes that affect it, quality accounts describe only the total change in an accounting period, without further specifying the causes.
<i>Valuation of non-market flows</i>		
Valuation of water resources	This category of the SEEAW accounts comprises the valuation of water and water resources. The valuation of water resources is included in the SEEAW because of its policy relevance. Since there is yet to be agreement on how to value water the SEEAW only presents valuation techniques commonly used in economic analyses	Similar to the quality accounts, this category of accounts is still experimental and there is yet to be agreement on a standard way of compiling them. When natural resources are used in the production process, they are embodied in the final good or service produced. The price charged for the product contains an element of rent which implicitly reflects the value of the natural resource. Establishing this implicit element is at the heart of valuing the stock of the resource. In the case of water, however, which is often an open access resource, this implicit element is often zero. Increasingly water is being treated as an economic good, it is therefore expected that in the future the resource rent for water would be positive and thus value of the water stocks would be included in the balance sheets of a nation.

Source: United Nations Statistics Division (2006 pp. 8-9).

water is undoubtedly a prerequisite. The following text reviews recent developments in Australian water accounting.

2.3. Australian water accounting

The Australian Bureau of Meteorology has a clear mandate to create the 'National Water Account'. The aim is to assist in meeting the information needs of various stakeholders and improve the public understanding about water resources in Australia (Chalmers, Godfrey and Potter 2009a). The question is: how best to accomplish this goal? An independent advisory Water Accounting Standards Board (WASB) was recently created to oversee the development of the Water Accounting Conceptual Framework (WACF) and water accounting standards. The WACF provides the conceptual parameters for water accounting and assists in the development of Australian Water Accounting Standards (AWASs) as well as the preparation and presentation of General Purpose Water Accounting Reports (GPWAR).

In comparison with other international developments, GPWAR focuses on the monitoring and measurement of and reporting about water rather than providing statistics about water (Chalmers, Godfrey and Potter 2009b).

The 'Framework' document has eight separate statements ranging from definitions to qualitative characteristics, recognition, compliance and assurance³. Analysis of this WASB (2009) set of

³ The WACF comprises a Preface and eight Statements of Water Accounting Concepts (SWACs): WACF Introduction; SWAC 1: Definition of the Water Reporting Entity; SWAC 2: Objective of General Purpose Water Accounting Reports; SWAC 3: Qualitative Characteristics of General Purpose Water Accounting Reports; SWAC 4: Definition of Elements of General Purpose Water Accounting Reports; SWAC 5: Recognition of Elements of General Purpose Water Accounting Reports; SWAC 6: Quantification of Attributes of Elements of General Purpose Water Accounting Reports; SWAC 7: Compliance Disclosures in General Purpose Water Accounting Reports; and SWAC 8: Assurance of General Purpose Water Accounting Reports.

documents reveals that it largely mirrors the International Accounting Standards Board (2001) framework for 'normal' accounting. For instance, there is a large emphasis on recognition of core accounting-looking financial statements. AWASs set out the minimum reporting requirements.

Overall, water-reporting entities are required to report volumetric information under both a 'physical flow' basis and an 'accrual' basis. The former is reported in the Statement of Physical Water Flows and the latter is reported in the Statement of Water Assets and Water Liabilities (analogous to the Balance Sheet) and the Statement of Changes in Water Assets and Water Liabilities (analogous to the Profit and Loss Statement).

In the Statement of Water Assets and Water Liabilities, the assets record the volume of water held in reservoirs and the water stored in underground aquifers while the liabilities document the allocation of the available water to different user groups (Lowe 2008). Meanwhile, 'equity' represents the volume of water that is not allocated for any specific use (Lowe 2008). The Statement of Changes in Water Assets and Water Liabilities is a summary of all inflows and outflows during the reporting period. Inflows include precipitation on the catchment while outflows consist of water consumption, evaporation, seepage, and underground task.

The WASB framework states that the primary unit of account is water rather than money and explicitly calls for provision of both physical flow and accrual accounting reports. WASB (2009) innovations stop there with no direct reporting focus on the price, valuation or quality of water. Over time, the recognition and reliable measurement of water would be subject to costing of items in monetary value.

As suggested by Godfrey, Chalmers and Lynch (2010), the development of Australian water accounting potentially has some impacts on policy making in the national and international arenas. They also argue that the combined skills of water and financial accounting experts could provide better water accounting standards. Lowe (2008) advocates that financial accountants may play an important role in managing Australia's water resources by applying several approaches such as depreciation, provisions and contingencies in water accounting.

To provide insights on the issue of water communication, a large sample of Australian water authorities are examined to determine how they communicate their measurements of current consumption and likely future supply, and to what degree they provide comparable and useful information in their annual reports. Policy implications are then explored.

3. Data findings

In Australia, water management is conducted by fully government-owned entities; these water authorities have the statutory responsibility to communicate their core activities in their annual reports. Annual reports are the standard means by which business information is disseminated to external stakeholders including governmental, environmental and community interests (Tower 1993). The Australian data in this study examines 21 large water authorities' 30 June 2008 full year annual reports; this sample represents over 80% of the relevant entities and water catchment areas in the country.

In Australia there are historically two types of water authorities, those that span their entire state jurisdiction and those that only are responsible for sub-regions within a state. In several jurisdictions (Western Australia, South Australia, Northern Territory and Australian Capital Territory) these authorities have sole control. Whilst

in other states, water management is spread across multiple entities in different river basins. The sample has all monopoly water authorities in the first category and two water firms in New South Wales (including the largest one servicing Sydney), nine in Victoria (with the Melbourne-linked one included) and three in Tasmania (including the capital city Hobart). Overall, the sample⁴ spans the entire continent.

Analysis of these reports reveals that none of the sample firms used the United Nations Statistical Division's *System of Environmental and Economic Accounting for Water (SEEAW) (2005)* Table 1 framework in any comprehensive fashion. Comparing the SEEAW (2005) comprehensive water framework to the actual Australian water firms' annual reports shows that: 1) there is a mixed level of communication of each water authority's 'financial strength' 2) additional information is presented related to the direct cost of the 'infrastructure' of water, and 3) the quality or value of 'water' itself is rarely stated.

These mixed elements of coverage are further explored with Table 2 providing more insights on the financial strength component and core water infrastructure reporting and Table 3 examining the level of communication of the wider water issues. Analysis highlights the dichotomy between the higher level of communication

⁴ The Australian Government, National Water Commission notes there are 24 major urban water utilities (those with at least 50,000 connections) and 13 rural water utilities (total of 37 water providers) <http://www.nwc.gov.au/www/html/772-water-providers.asp> (assessed on 5 April 2009). Data for all these 37 water providers are searched. However, only 21 are publically available and hence included in the final sample. The other water providers are not included because of two data omissions: (1) the annual reports are not available during the data collection stage or (2) the annual report for the water suppliers are aggregated with other non-water related information (in other words, there is no specific water information for the water service provider). Overall, the Australian sample comprises a broad and representative 21 water firms.

Table 2: Descriptive Statistics for Australian Water Authorities

Variable	N	Mean	Median	Standard Deviation	Minimum	Maximum
Total Revenue (A\$)	21	366,991,243	189,475,000	495,954,922	9,579,194	1,702,796,000
Profit (A\$)	21	61,597,747	17,848,000	120,330,376	-4,576,000	527,000,000
Profit / Total Asset (%)	21	1.7	1.6	1.4	-0.6	4.5
Total Liability / Total Asset (%)	21	34.0	29.6	17.6	4.4	68.4
Water Infrastructure / PPE (%)	21	77.0	86.2	19.9	22.7	98.5
Water Infrastructure / Total Asset (%)	21	71.5	79.1	20.0	18.7	90.5
Depreciation of Water Infrastructure/Total Expenses (%)	21	18.3	15.2	15.4	2.8	79.2
Total Cash Flow (A\$'000)	21	28,036,629	5,869,000	52,713,288	-29,196,000	204,664,000
Number of Employees	17	650	238	913	26	3,200

of historical cost-style measures of core water infrastructure and ‘costs’ of obtaining/storing the water versus the far less disclosed issues of value, quality and price of this water. This ‘missing’ latter data component is arguably very important for water policy decision-makers and consumers.

3.1 Australian Water Authorities’ higher level of ‘financial’ communication

Table 2 presents the financial characteristics of the Australian water firms. Table 2 helps answer the question about the communication of core financial viability of the Australian water firms. Many of these figures show that they are in a strong financial position. Australian water firms are large with the median firm having over A\$189 million in assets and A\$17 million dollars in profits. The largest two, Sydney Water (serving the biggest city in Australia) and Water Corporation (representing all of Western Australia) each has revenues of over A\$1.6 billion whereas Cradle Coast (in Tasmania) has less than A\$10 million in revenues. Sydney Water and Water Corporation (Western Australia) again have the largest asset base (over A\$ 11 billion) with Cradle Coast having A\$117 million.

Prospects of ongoing financial stability are only partially transparent⁵ for these Australian water authorities. Debt levels are generally low (around 30%). Yet, the median cash flow for each firm is under A\$6 million and the median return on assets is only 1.6%. All but two water firms are profitable, however as they are all fully government-owned, it is unclear how crucially important this profit figure is. The annual report analysis reveals very little reporting of related party transactions between the water authorities and their governmental owners. The lack of disclosure implies that there are no

⁵ Further analysis of financial ratios is conducted (detailed figures are not shown, for brevity). Use of Aripin, Tower and Taylor’s (2009) comprehensive list of the 32 most common financial ratios in Australia as the benchmark tool reveals a low 7.2% average level of financial ratio disclosures by Australian water firms. There is a great deal of non-communication especially for liquidity and cash flow ratios. The Australian water authorities place more emphasis on gearing and return on assets, followed by return on equity, current ratio and debt to equity ratios. Yet, there is still a low level of communication with only 12.9% of the ratios for capital structure and 10.6% for profitability ratios disseminated. Lower yet is the communication of less than five percent of the ratios for liquidity (4.8%) and cash flow (1.1%). 22 of the 32 most common ratios are not disclosed by *any* of the Australian water authorities. Overall, the transparency and reporting of the Australian water authorities’ financial capabilities could be fundamentally improved. Enhanced release of such data to the public could include more specifics on past, current and future related party transactions as well as disclosure of many additional specific financial ratio figures.

government grants for operating costs or the building of major infrastructure such as the new water de-salination plants in Perth and Sydney. However, given the government 100% ownership structure the potential for large subsidies to the water firms always exists, conversely there is also the possibility for mandated dividends flowing back out to their governmental owners.

It can be argued that these figures are incomplete as they show only a part of their water resource base. The Australian water authorities are solely utilising a narrow accountants' version of how to account for water. They are only quantifying and communicating very specific cost-related infrastructure, assets and liabilities. They are failing to be transparent about the United Nations' SEEAW-style reporting recommendations that call for additional information about the overall inflows, outflows and storage of water. Australian water authorities' conservative accounting reporting is potentially masking many bigger issues.

Overall, based on the figures in Table 2, the Australian water firms do seem to have the financial strength to accomplish their 'water service' objectives. Yet, this strength is incompletely presented through the narrow net asset presentation and partially implied through the potential resource flows from their 100% governmental owners. Future transfers, interactions or interference cannot be ruled out.

The second and third issues to be addressed are the extent of the Australian water authorities reporting of water infrastructure-style accounts as well as an assessment of the broader communication of water issues.

3.2 Australian Water Authorities' mixed level of 'water' communication

All the Australian water firms in the sample provided a high degree of detail on core

accounting-style 'Asset Accounts' for 'produced assets' (this links to the UN SEEAW Table 1 structure in Category 2). For instance there is detail on total assets, total liabilities, water infrastructure assets and even the related depreciation of water infrastructure assets. Table 2 highlights that these firms are clearly focussed on water management and delivery with almost 80% of their total assets being water related. Depreciation of water assets represents 15.2% of their total expenses. There are extensive financial accounting footnotes relating to core accounting standards issues such as details on asset, liability, equity, revenue and expense classes. There is also a breakdown of cash inflows and outflows, risk and interest rate risk factors and governance data. These financial reports are audited and receive supporting unqualified clean audit opinions. Core financial reporting, in accordance with 'narrow' current financial requirements are being met.

To assist decision-making 'broader' comprehensive reporting of water data is essential. Vardon et al. (2007) and Plummer and Tower (2009) state that of the five UN SEEAW categories, 'physical supply and use' is most commonly disclosed with far less communication of other key attributes of water. It is important to note that the United Nations and the accounting profession seem to be using the term 'water assets' in two very different ways. The accounting profession is narrowly defining this terms as 'costs' that can be linked to the acquisition, processing, storage and delivery of water. They are not valuing (reporting) the actual water, instead merely the costs that relate to it. Whereas, the United Nations SEEAW document refers to the term 'water' in a far broader economic and social dimension. The UN framework calls for water accounting to report comprehensive and far-reaching details on inflows, outflows and storage of the entire water cycle under the purview of any particular water authority.

Overall, an examination of the Australian water firms shows that there is extensive detail in the annual report on core accounts. The revenues, costs and related balance sheet accounts are all provided in accordance to international accounting standard guidelines.

However, it is argued that an Australian water authority's annual report should contain a breadth and depth of information that far exceeds such narrow financial statements. This is vitally important for consumers, policy makers and the public interest. For instance, in the Australian water firms' reports there are some disclosure of 'Flow Accounts' (see Table 1, Category 1) especially for 'physical supply', however there is very little information on 'emission accounts'. Moreover, there is a dearth of detail for the 'quality of water resources' component of the UNSD SEEAW document and a paucity of information for the final UNSD SEEAW framework category of 'valuation of non-market flows'. Overall, the Australian water firms are strongest at communicating the narrow financial aspects of their operations but far more tentative at information transparency about the broader water management issues.

The final question now turns to the level of communication of the various aspects of broader water management by these Australian authorities. To access this, a new 21 item disclosure matrix is evolved to report what key water-related activities are (or are not) reported. As shown in Table 3, there is some breadth in reporting of water matters by Australian water firms, however many very important items are seldom communicated.

The average level of communication of these 21 key water disclosure items is 37.4%. All sampled Australian firms report their core water infrastructure assets and related depreciation expenses. More than half report their water allocation revenues.

However, even this data is usually only presented in volume and monetary forms with very few Table 1 UN SEEAW style 'quality' or 'valuation' indicators provided. Australian firms typically only measure transport, processing and infrastructure cost, the actual value of the water is not clearly valued or communicated.

Table 3: Disclosure of Water Issues by Australian Water Firms

Information	Percentage
Water infrastructure and wastewater infrastructure (\$)	100.0
Depreciation of water infrastructure (\$)	100.0
Number of employees	81.0
Number of customers	71.4
Segment information (1=Yes, 0=No)	66.7
Annual consumption (ML)	66.7
Water allocations revenue (\$)	61.9
Sewerage disposal charges (\$) - Revenue	42.9
Trade waste charges (\$) - Revenue	28.6
Sale of bulk water (\$)	23.8
Available water (ML)	23.8
Storage: Total capacity (ML)	19.1
Sewerage service charges (\$) - Revenue	19.1
Irrigation water charges (\$) - Revenue	19.1
Bulk water and sewerage charges (\$) - Expenses	19.1
Drainage charges (\$) - Revenue	9.5
Volume charges (\$) - Revenue	9.5
Storage: Minimum and maximum (ML)	9.5
Industrial water charges (\$) - Revenue	4.8
Urban water charges (\$) - Revenue	4.8
Irrigation and drainage charges (\$) - Expenses	4.8

Note: ML = megalitre (one megalitre is equal to one million litres).

Sample size is 21 representative Australian firms.

Source: Self-constructed index.

Using the UN SEEAW framework as the benchmark template reveals disparity in reporting for the broader concepts of accounting for water. Whilst the annual consumption (outflows) is reported by 66.7% of the Australian water authorities, arguably two of the most important data

points for water management decision-making are communicated by less than one quarter of the Australian water authorities. These are the amount of total available water inflows (23.8%) and total storage capacity (19.1%). Overall, there seems 'good' reporting of historical cost-based transport and infrastructure costs but very little more comprehensive dialogue related to broader water use for policy decision-making as advocated in the UN SEEAW framework (Table 1).

ANOVA and multiple regression analysis (details available from the authors by request) reveals no clear predictors of differing levels of the Table 3 'water disclosure index' broader water issues. Size, profit and even percentage of water assets per firm are not determinants of 'water disclosures' (p-values of 0.376, 0.295, 0.572, respectively). Thus there is overall uniformity of what is communicated (such as water/wastewater infrastructure and depreciation, employees/customers, segment data, annual consumption (ML) and water allocations revenue) and also for what is not communicated (such as important information on available water (ML), storage capacity (ML) and specific data on a series of revenue and charges for key aspects of water management including sewage, irrigation, industrial and urban usage).

The above analysis reveals a patchwork of communication by Australian water firms. Core water infrastructure is well accounted for, yet the 'financial strength' of these firms could be clarified with additional disclosure of financial ratios. A broader comprehensive water accounting framework is not being utilised. These findings mirror the World Water Assessment Programme (2009, p. 17) concern that "managing water is made more difficult by the lack of knowledge and information required for decision-making and long-term planning. Few countries know how much

water is being used and for what purposes, the quantity and quality of water that is available and that can be withdrawn without serious environmental consequences and how much is being invested in water management and infrastructure".

4. Concluding remarks

The International Water Management Institute (2008) argues that water is a fundamental issue because it has become the prime challenge of survival in today's world and it has a significant impact on health, food security, poverty and the environment. Gleick (1998) investigates fresh water resource management arguing inadequate access, inappropriate management, and rapid population growth is causing a growing global water crisis and that new approaches to long-term water planning and management are required to guarantee access to freshwater resource for future generations. Plummer and Tower (2009, p.21) noting the volatile political nature of water policy with the related accounting communication of this precious resource opines that:

Water, is a limited resource, thus water allocation becomes a zero-sum game. Some stakeholders will win with a more 'efficient and equitable' reallocation, yet others will lose and potentially lose badly with related devastating economic consequences. Moreover, not all stakeholders are equally adept or financially able to garner their political lobbying power. How is policy to be made for a product with static perhaps even decreasing supply but ever growing demand? Governments in the past have in a sense bankrupted future generations by over-allocating water rights. Global warming, climate change and the resultant deep drop in water catchment areas are finally making governments face the harsh and unpalatable reality of this unsustainable policy.

The findings reveal a reasonably strong financial position by Australian water firms. They have large relatively unencumbered asset bases to accomplish their tasks, are government-owned and often encompass their entire jurisdiction in a monopoly scenario. Their communication of historical cost base information is at an international standard, especially for water infrastructure and related depreciation expense. Conversely, many elements of the more expansive United Nations System of Environmental and Economic Accounting for Water (SEEAW) framework have yet to be adopted. There is very little information on under/over water allocations and almost complete silence on pricing, valuation and quality issues.

Plummer and Tower (2009) note that in Australia, the federal government recently passed the *Water Act 2007* delegating the core responsibility for compiling and maintaining water accounts for Australia and also to issue national water information standards to the Bureau of Meteorology (see Appendix 1 for detail about their responsibilities). The Australian Bureau of Meteorology is now far better funded and has employed hundreds of extra people to “enhance the quality and utility of Australia's water information by producing the National

Water Account, supported by a truly national water monitoring and data collection network. The program includes development and maintenance of an integrated, national water information system freely accessible to the public” (Australian Bureau of Meteorology 2009, p.1).

The findings in this study reveal that additional communication is needed from Australian water authorities especially in the areas of the amount of available water, storage capacity and more insights on quality and valuation of water. There is almost a complete absence of information of Molden and Sakthivadivel (1999) style reporting of inflows (surface, sub-surface and precipitation), outflows (utilisable, non-utilisable) and related depletion (both beneficial and non-beneficial) of water (see Figure 1). The Australian Bureau of Meteorology has a clear mandate to create ‘National Water Accounts’ based on the recent *Water Act 2007* to provide the best possible set of national, state and entity-related data. Their independent consultative WASB (2009) ‘framework’ document may well result in greater uniformity and depth of reporting, however quality and valuation data are still ignored. Overall a higher level of water accounting communication is advocated.

Appendix 1: Australian Bureau of Metrology Expanded 'Water Accounting' Role

<p>Hydrological Services Program</p> <p>The Hydrological Services Program is undergoing a major transformation as a result of the Bureau of Meteorology's expanded water information role. The Australian Government's \$12.9b 'Water for the Future' program announced in April 2008, aims to secure the long term water supply of all Australians. This investment includes \$450 million for the 'Improving Water Information Program' administered by the Bureau and backed by the Commonwealth Water Act 2007. Hence functions within the Hydrological Services Program have expanded to include a set of new statutory water information responsibilities:</p> <ul style="list-style-type: none"> • Issuing national water information standards • Collecting and publishing water information • Conducting regular national water resources assessments • Publishing an annual National Water Account • Providing regular water availability forecasts • Giving advice on matters relating to water information • Enhancing understanding of Australia's water resources <p>The previous components of the Hydrological Services Program, the hydrometeorological advisory service, flood warning services, and water resources assessment, will be incorporated into our broadened water information role.</p> <p>All components of the Hydrological Services program depend heavily on the basic national meteorological observation networks, and the flood forecasting and warning service also operates a special purpose network of rainfall and river level stations in cooperation with State and Local Government agencies. Soon the amount of data will significantly increase as the Bureau establishes systems to receive water data from various agencies and other sources. Successful delivery of the services under this program will continue to be heavily dependent on the cooperation with State and Territory water and emergency service authorities, Local Government agencies and many other stakeholders.</p> <p>Integrating this new water information role into our established functions and arrangements is well underway. The significant increase in the availability of water information will soon be reflected in changes to these Hydrological Services Program web pages.</p>	<p>The Bureau of Meteorology and water information</p> <p>Through the <i>Water Act 2007</i>, the Australian Government has given the Bureau of Meteorology responsibility for compiling and delivering comprehensive water information across Australia. The Bureau is working with water managers across Australia to deliver high quality, national water information to government, industry and the community.</p> <p>Transforming Australia's water resources information</p> <p>To secure the long term water supply of all Australians, the Australian Government announced <i>Water for the Future</i> in May 2008, a \$12.9 billion water investment program. This included \$450 million for the <i>Improving Water Information Program</i> administered by the Bureau of Meteorology and backed by the Commonwealth <i>Water Act 2007</i> and key stakeholders.</p> <p>The Bureau will enhance the quality and utility of Australia's water information by producing the National Water Account, supported by a truly national water monitoring and data collection network. The program includes development and maintenance of an integrated, national water information system freely accessible to the public.</p> <p>Delivering water information to users</p> <p>Since 2007, the Bureau has employed an additional 120 people around Australia to deliver these services, many of whom are based in Melbourne and Canberra. Its investment in data storage, web serving and computational capabilities will enable analysis and interpretation of national water information and the provision of forecasting services across a variety of time and space scales.</p> <p>The Bureau is investing \$80 million to help water data collecting agencies upgrade and expand their streamflow, groundwater monitoring and water storage measurement networks. Investment priorities include improving data quality and currency, technology to simplify data transmission to the Bureau and filling critical gaps in monitoring networks.</p> <p>A national collaboration</p> <p>The development of a national system for water information storage, analysis and reporting requires an unprecedented level of collaboration between stakeholders. The Bureau is working closely with water data owners to coordinate and implement these arrangements. The Bureau has established formal advisory, reference and expert panels to ensure a broad suite of industry and government experience is involved in the development and expansion of the national water information capacity.</p>
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THE INCREASING INVOLVEMENT OF ACCOUNTANTS IN CORPORATE SUSTAINABILITY MANAGEMENT

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Abstract

This paper reports on a research project which examined the current practice of sustainability accounting in leading sustainability companies in the UK and Germany in 2009 and 2010. The topic of investigation was the role of the accounting function in generating and using sustainability-related information. A series of sixty interviews helped to identify the extent and nature of the involvement of accountants and the accounting function in corporate sustainability management and how sustainability accounting has developed over time. The findings suggest that there is a significant involvement which has tended to increase over time.

1. The motivation behind the involvement of accounting

1.1. Growing economic importance of corporate sustainability management

With the apparent impact of their business activities, companies have been held largely responsible for either causing

adverse impacts on the natural environment and society or at least for failing to address them adequately (Gladwin, Kennelly & Krause 1995). The concept of sustainable development has frequently been translated in companies into ‘corporate sustainability’, covering their environmental and social as well as their financial performance on the organisation and on the society at large (Schaltegger & Burritt 2005). Several factors have driven this: on the one hand poor social and environmental performance have jeopardised some companies’ financial performance. On the other hand numerous companies have been able to gain competitive advantage by recognising the importance of environmental performance and adapting their business activities accordingly (e.g. Klassen & McLaughlin 1996; Schaltegger & Wagner 2006), although further empirical evidence for diverse relationships between sustainability performance and financial success is still needed (Boatright 1996; Gioia 1999; Wood 2000; Schaltegger & Synnestvedt 2002; Schaltegger & Wagner 2006).

The number of companies taking action to reflect the environmental and social aspects of their performance continues to increase (Gray, Owen & Adams 1996; GRI 2008) though some critiques perceive these actions as unnecessary, non-value-adding costs (Walley & Whitehead 1994). Furthermore, many such activities have often been carried out on a single-project basis, although a trend towards their integration in day-to-day business activities has been observed (Schaltegger & Wagner 2006). This has drawn attention of many companies to the challenge of integrating positive social and environmental intentions into the core

of their business, developing overall strategies of organisational change and formulating long-range plans, allocating resources, planning and controlling the cost of activities and measuring the performance (Porter 1985; Schaltegger & Wagner 2006).

1.2. Moving towards well-informed sustainability-related decisions

Given that (a) “the essence of management is coping with change” (Chakravarthy 1982, p. 35), (b) the fact that sustainability issues are societal, regulatory and market drivers of change, and (c) the purpose of management accounting is to support management by the provision and use of accounting information, it is logical to conclude that management accounting should be involved in supporting sustainability-related management activities.

Corporate sustainability-related activities have developed rapidly during the last decade (e.g. Steger 2004; Herzig & Schaltegger 2009), with both the number of companies getting involved and also the spectrum of challenges being addressed, increasing steadily. Companies now have more tools at their disposal than two decades ago when the concept of sustainability was still relatively new. The focus has therefore been shifting from the early approach of single projects and activities towards a more integrated approach to both the activities and measurement of their performance. Even at a single-project level, as projects develop, their performance needs to be monitored and evaluated based on reliable information rather than merely subjective judgements or random proxy indicators. Otherwise a rational creation and management of a positive link between social, environmental and economic performance remains anecdotal or coincidental.

This means that reliable and relevant information is needed. However, whether non-financial information is managed through a centralised information collection system similar to most companies’ accounting systems or separate, dedicated systems has not been explored to date. Consequently, the responsibility of data handling and information management has often been assigned to a particular individual who is directly involved in these projects which means that the project management can obtain an overview and keep track of its progress and its related costs and benefits. A senior manager would then have to cope with information about the performance of a number of different projects which had arisen from a number of different sources, often presented in a variety of formats, and make his/her own evaluation of its significance. Providing information on a consistent basis is essential for senior management, and one way in which this might be achieved could be by using recognised rigorous information-handling methods such as those deployed by accountants.

The accounting system represents potentially the most important information resource for decision-makers (e.g. Schaltegger & Burritt 2000) for several reasons. Information collected by management accounting systems is expected to be reliable due to the robust mechanisms of internal checks and controls in the processes of data collection and verification, and is also often verified by routine internal audits. This also makes use of the expertise of accounting professionals in handling information, i.e. their ability to extract relevant and useful information from data that serves the needs of managers, regulators and the public. However, the accountant’s involvement in sustainability management activities has been limited to date, as shown in Section 2.

Sustainability management is not the first challenge in management history in which the involvement of the accounting function has developed and increased gradually over time. A look at (management) accounting history shows that numerous changes have occurred in the past that required accountants to expand their expertise to a new field (Evans et al. 1996; Burns & Yazdifar 2001; Scapens et al., 2003; Alexander 1991). In recent decades a re-evaluation of management accounting, in terms of developing new techniques and systems, has also been observed (Scapens 1990). However, several publications suggest that some organisations prefer to use traditional management accounting systems rather than adopt novel management accounting approaches (Bromwich & Bhimani 1989; Burns, Ezzamel & Scapens 1999), which may partly explain the slow rate of dispersion of new methods.

Therefore, the following paper looks into the extent to which accountants and the accounting function of the company are involved in sustainability management activities. Furthermore, it tries to provide an explanation of why such an increasing involvement is likely to be expected.

2. Literature review

2.1. Scientific progress

To date, only limited documentation of the involvement of accountants in sustainability management exists. With only a few exceptions (e.g. Gray 1992; Schaltegger & Burritt 2000; Bebbington 2001; Wilmshurst & Frost 2001), accounting research has largely neglected the role of the accountants in corporate sustainability management. Furthermore, research in sustainability education outlines the insufficient involvement of the accounting profession in the above field (Schaltegger, Windolph & Harms 2002; Tingey-Holyoak & Burritt 2009; Gray & Collison 2002).

In contrast, there has been substantial descriptive accounting research aiming at throwing light on accountants' involvement in other new developments in management. With the constant development of management accounting practices (Ittner & Larcker 2001) to serve the changing needs of information customers (Kaplan 1984), not only has the accountant's function been evolving but also their involvement in various activities. For example, Hertenstein and Platt (1998) argue that management accountants should be involved in the process of new product development for six main reasons:

- to determine the financial feasibility of a proposed new product during the conceptual phase by developing cost estimates based on the designer's ideas;
- to help the team to anticipate and develop financial information, for example, product cost estimates or projections of required investment, that would be necessary to obtain approval at the successive go/no go decision points;
- to provide expertise in the development of capital proposals which may be needed to gain approval for the purchase or development of new equipment required to produce the new products;
- to provide support in framing the cost-benefit discussions that need to take place between the product development team and senior management in order to move the product through the development process;
- to remind team members that the cost of a product and its financial success are key goals that the product design must satisfy; and
- management accountants are also in a position to estimate not only initial product costs, but also costs to the distributor, consumer, and manufacturer over the entire life of the product.

Hertenstein and Platt (1998) gave these reasons in the specific context of product design, yet these are also sufficiently generic to be equally relevant for other operations and activities in the company, including sustainability management.

However, several researchers have reported that although environmental management accounting (EMA) is well-developed and known in certain quarters, it still often lacks the support of many management accountants (Bebbington et al. 1994; Davey & Coombes 1996; Schaltegger & Burritt 2000; Schaltegger & Burritt 2010; Burritt & Schaltegger 2010). Research has indicated that accounting professionals are in fact sometimes involved in environmental management, although “[...] 39% [of the interviewed CFOs] indicated that environmental issues were outside the realm of the accountant, and there was only marginal support (23%) for the quantification and reporting of environmental impact” (Wilmshurst & Frost 2001, p. 141). As the authors point out, it is the extent to which an issue is considered of long-term importance as opposed to merely a “passing fad” that is important for engaging a wider number of relevant professionals. Thus, it can be expected that as the issue of the environment and sustainability continues to gain importance, accountants will increasingly be involved in future.

2.2 The practitioner’s viewpoint

Not only companies and their decision makers but also various professional accounting bodies and similar (e.g. standard-setting bodies) have acknowledged the urgent nature of the challenge of sustainability and have been working on developing a strategy on sustainability to relate sustainability and the accountancy profession (e.g. IFAC 2005; MoE Japan 2005; ICAEW 2008; FEE

2000; BCG 2009). This has been seen as particularly important as it touches on many areas of traditional accounting competencies. The case has been made in numerous publications (e.g. Jasch 2006; Schaltegger et al. 2008).

3. The research project – objectives, methods and further considerations

3.1. Research background and objectives

The project involved research to investigate current corporate practice in sustainability accounting and the potential contribution of the accountant. It was conducted in the UK and Germany in cooperation between the University of Gloucestershire and the Centre for Sustainability Management at the University of Lueneburg. The main part of the project was an exploratory study of the sustainability accounting practices of 16 leading British and German companies, adopting a grounded theory approach (Glaser & Strauss 1967) to look into their practices related to producing, managing and using sustainability-related information for management purposes. Furthermore it looked into the role of the accountant in the above activities.

While on the one hand the literature research prior to conducting the interviews provided only moderate evidence of accountants’ involvement in sustainability management to date, it showed that management accountants would be in a position to contribute to tackling sustainability challenges (as discussed in Section 2.1). Since the companies researched in the project were selected as being amongst leaders in sustainability management in two major European countries with an established tradition of conventional accounting, it was anticipated that their accountants would be likely to be involved in sustainability accounting at least to some extent.

3.2 Research method

The companies approached and invited to participate as research subjects were those which were identified as likely to be at the forefront of sustainability management, based on reputation (e.g. companies with sustainability awards) and documentary evidence of their leadership in environmental and social performance, such as high-quality published corporate sustainability reports or listing in a sustainability ranking such as the Dow Jones Sustainability Index. They can therefore be considered as likely to be exemplary for understanding the nature and processes behind utilising information for sustainability management. Since internal sustainability information and its use are typically confidential, the actual (as opposed to expected) level of sophistication of the information management systems in regard to sustainability management could only be anticipated but not actually tested prior to the project. Eight companies in the UK and Germany agreed to participate, and a total of 60 interviews were conducted. Since these were deliberately not intended to be a representative cross-section, the results are clearly not representative of the majority of the business world but should rather be understood as a revelatory insight (Yin 2009) into maybe leading corporate practice with regard to this topic.

Initial interviews with accounting executives and facilitators of published corporate sustainability reports were followed by interviews with internal users of sustainability information and administrators of the required data, over the period 2009-10. The interviews were based on a questionnaire with predominantly open-ended questions, and additional information collected in the form of field notes. The initial interview was generally with an individual who was

himself closely involved with the company's sustainability management, to gain an overview of related internal processes and to identify further providers and users of such sustainability-related information. In particular, the research consciously focused on the role of the accountant in the process and so far as possible interviews with staff with an accounting background or originally working in the company's accounting department were conducted.

4. Results

4.1. Defining the involvement

A varying extent of accounting involvement was observed in the sample companies. However, before presenting the results, a definition of involvement of the accountant is needed. Based on the evidence collected, four groups of accountant involvement were set up: no integration at all, little integration, only certain issues integrated, and high involvement (Table 1). Functions which carried out tasks of an accounting nature but under other job titles such as (for example) "metrics manager" and "non-financial indicator manager" were also considered as being sustainability accountants in this analysis.

The analysis covered not only the extent to which accountants are involved in their companies' sustainability management but also on how rapidly the extent of their involvement is changing and the type of contribution provided: i.e. not just the current status quo but the development and evolution that has led to this over time. Since the project's objective was to investigate the generation and use of accounting information in sustainability management, a number of the interviewees were either accountants, accounting professionals in charge of some kind of non-accounting activity or involved in accounting activities (Table 2).

Table 1: Defining the extent of involvement in four categories

Extent of accountant's involvement	Description
No involvement	No evidence of the accountant's involvement was obtained during the interviews
Little involvement	Accountants were only involved to support some aspects but not all
Partial involvement	Accountants were involved to a high extent but for certain issues only (e.g. legal compliance, energy use, etc.)
High/complete involvement	Accountants were involved to support the majority of the processes that require or benefit from the accountant's expertise

Table 2: Number of interviewees and their accounting background in accordance with Table 1.

Interviewee related to accounting practices	Number of respondents (percentage of all interviewees)
Accountants	11 (20%)
Fulfilling accounting tasks	19 (35%)
Non-accounting functions	24 (45%)

4.2 The accountant's role

The accountant's role was investigated and documented in respect of the functions of (sustainability) management accounting, i.e. the steps in the process. CIMA (1981) identified seven functions of (sustainability) management accounting, in relation to management information:

- identification,
- measurement,
- accumulation,
- analysis,
- preparation,
- interpretation and
- communication.

The results from the research were analysed in relation to these seven accounting functions, as reported in Table 3.

Table 3 represents the extent to which the accounting function is involved in sustainability management practices. The size and the selection criteria of the sample do not allow any generalisable conclusions to be drawn about the activities most supported by accountants, yet several observations can be made.

Table 3. Results in relation to involvement of the accounting function in sustainability management practices (total 16 companies).

Function	ID	MEA	ACC	AN	PREP	INT	COM
Number of companies	5	6	13	8	8	7	8

ID identification, MEA measurement, ACC accumulation, AN analysis, PREP preparation, INT interpretation, COM communication.

The identification of information in our sample was often initiated by sustainability managers and those with a similar function, hence the relatively limited evidence of involvement of the accounting function. The same applies to the analysis and interpretation of sustainability information. The accountant's involvement in the final step, communication, was also only rarely observed as this was typically the domain of the functions that use the information.

The absence of any pattern in the different types of activities between the different companies in the sample suggests that they are not simply following generally accepted best practice or mimicking other companies which are generally perceived as representing best practice, but are instead trying to find solutions to specific problems by using the accounting resources at their disposal.

Table 4 presents the fields to which accounting professionals are potentially able to contribute and are currently involved in, as well as a description and

examples of the advantages of this. These examples show that although accountants' expertise may have been neglected for a number of issues, the sample companies face particular challenges that have been resolved – both in the past and today – by involving accountants and therefore their involvement can now be beneficial in sustainability management.

However, on several occasions interviewees expressed doubts as to whether the accountant's expertise is required to support simple (as opposed to complex) activities which are currently managed without their support, possibly on the presumption that the accounting profession is at present too remote from sustainability challenges to be able to provide valuable support. In the cases where accountants were not involved, interviewees also reported that involvement of accountants is not necessarily seen as advantageous. This was justified with the presumption that latter need an understanding of sustainability issues, which is currently focused in the sustainability department.

Table 4. Application of the accountant’s expertise in corporate sustainability management activities

Field of contribution of accountants	How	Why	Example
Identification	Develop performance indicators; develop suitable systems to manage sustainability-related information	Use accounting experience to develop systems for managing non-financial information	The Sustainability Balanced Scorecard supports such an indicator development process
Measurement	Introduce a group-wide system to obtain uniform performance indicators	Increase comparability between sustainability-related projects	Defining indicators that are calculated based on the same scope and base year
Accumulation	Use established data flow paths; provide information that is already existing in other forms; collect additional information	Resource efficiency increase, since the underlying data does not need to be collected or verified again	Deciding about the physical information behind the monetary information normally provided
Analysis	Measure performance by evaluating managers’ sustainability activities	Produce information that describes the success of activities	Developing uniform indicators for sustainability performance
Preparation	Establish the links between environmental, social and financial performance	Identify and create a business case for sustainability	Preparing the sustainability report
Interpretation	Interpret environmental and social impacts in monetary terms	Provide relevant information in a uniform and expected format	Estimate costs and benefits of a project
Communication	In other corporate information systems, so that they do not need to be run separately	Develop a single user-friendly data management system for more efficient information management and use	Modules of an internet-based sustainability reporting can be feed from the sustainability accounting system

5. Interpretation of the results and discussion

The exploratory nature of the research provides indications which can be interpreted with regard to several aspects. Three aspects are particularly worth describing:

- involvement of the corporate accounting function against background literature;
- involvement of the accounting professional and
- the areas (in accordance with Section 4.2) in which the accountant's involvement was predominantly observed.

The increasing involvement of the accounting function seems to reflect the increasing integration of sustainability activities in the core activities of the companies examined. Engagement of the companies in sustainability matters (selection prerequisite, see Section 3.2), leads to the expectation that these activities have evolved into business as usual, and use the infrastructure and resources of the company. A similar evolution pattern in relation to accounting involvement has been observed in previous research (e.g. Hertenstein & Platt 1998). Whereas the first observation may be considered unsurprising in view of the type of companies researched and their commitments to sustainability, the evidence indicates that at least some leading companies are taking advantage of accountants' expertise in tackling sustainability challenges.

The results also reveal that in the majority of the cases, perhaps in contrast with what might have been initially anticipated, the involvement of accountants is recognisable. As Table 4 shows, the accountants and accounting professionals in the sample were in a position to provide support in dealing with specific sustainability challenges as opposed to offering generic support on information management issues. This does

not necessarily suggest that the accountants have undergone training on sustainability issues but rather they have been successfully involved in sustainability management activities. Another interesting observation that can be made in this context is the various ways in which accounting professionals have been able to contribute to sustainability activities, therefore it can be expected that their involvement is on the rise in other companies as well.

The third observation was made with regard to the areas with which the accounting function was involved. Reference to Table 3 reveals that the accountant's involvement was focused on the accumulation of information, which vice versa leaves the other functions less populated. Whereas the research did not aim to look for an explanation of this phenomenon, it can be assumed that the large amounts of information from and to various data providers, recipients and users might overtax sustainability managers, so that they seek to organise information flows with accounting approaches to reduce costs and to increase the efficiency of related activities.

These deliberations can be explained from several viewpoints. From an operational perspective, using available corporate resources and knowledge rather than establishing parallel systems is likely to decrease resources needed and therefore decrease the transaction costs of dealing with sustainability issues. Examples of such transaction costs are both internal and external to the sustainability management activities. Examples of the former include more efficient information distribution and less effort for providers of information (e.g. by inputting all data into a single system), whereas the latter can be exemplified by the additional transparency created e.g. in management reports, whereby sustainability aspects are related to other corporate activities.

Another interesting interpretation of the results as opposed to the existing body of literature is the perception of accountancy by other professionals. In other words, much of the existing literature is based on empirical results that measure the perception of other professionals in relation to both the potential and actual contribution of the accountant. As the intention was to investigate involvement of accountants in corporate sustainability management, it was possible to identify a higher than expected involvement, based on prior research, thus the suggestion that increasing involvement is likely to be observed. In strictly scientific terms, however, these results need to be validated on a larger scale and at least at two points in time.

Whether the results are also applicable to an extended pool of companies requires further research. Of particular interest would be extending the research over a larger sample of companies, so that companies of various size, culture and sustainability engagement are investigated. Also the potential benefit from the accountant's involvement should be researched in detail to provide evidence on critical areas of support needed.

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ENVIRONMENT EXTRA!

Next generation of GRI Guidelines on the horizon

The GRI Board of Directors made an important decision in October: GRI will start working on a new version of the GRI Guidelines – the **GRI G4 Reporting Guidelines** – to be ready by the end of 2012.

In line with its mission to mainstream ESG reporting, a key aim of the G4 Guidelines is to harmonise Environmental, Social and Governance (ESG) and sustainability reporting practices around the world. In order to be fit for mainstreaming, the G4 Guidelines will need to be “standard ready”; robust enough to support higher levels of assurance and help companies to produce reports that are trusted by markets and stakeholders.

The current sustainability challenges and the digital era are creating an unprecedented demand for information, to give a real overview of business performance. GRI is convinced that this can be achieved if harmonisation of current standards starts, increasing transparency through comparability.

Another key aim for G4 is to be a stepping stone for companies preparing an integrated report based on the framework currently in development by the International Integrated Reporting Committee (IIRC).

An integrated report presents information about an organisation’s financial performance with information about its ESG performance in an integrated way. It gives long and short term investors and other stakeholders information to assess a company's performance in all of these areas.

As the developers of the world’s most widely used sustainability reporting guidelines, GRI co-leads and participates in the development of the IIRC framework. The GRI Guidelines shape the ESG content for the integrated reporting architecture developed by the IIRC.

GRI counts *on the participation and engagement* of its networks and other members of the reporting community to achieve these goals.

Source:

http://www.globalreporting.org/NewsEvents/Press/LatestNews/2010/NextGenerationofGRIGuidelinesontheHorizon.htm?dm_i=4J5,AG9V,14N6B4,SMI1,1

“Invisible” nature key to global economy - U.N.

by David Fogarty, Climate Change Correspondent, Asia, Singapore.
12 October, 2010

Nature is not just about fluffy animals or brightly coloured frogs -- it's central to the health of businesses that need to incorporate environmental impacts into their risk management, a senior United Nations official said.

Such an approach should be obvious, said Richard Burrett, co-chair of the United Nations Environment Programme's Finance Initiative, yet nature remains essentially invisible to many people and companies, particularly in urban centres.

“All financial and economic capital, is derived from natural capital,” Burrett told Reuters ahead of a major U.N. conference from October 18 in Japan that aims to set new targets to combat accelerating loss of plant and animal species.

“We act as if we have endless abundance of natural capital to underpin our global economic activity, yet it's clear that we're degrading it at a phenomenally fast rate,” said Burrett, a former global head of project finance for ABN AMRO and now a partner at investment advisory firm Earth Capital Partners.

“Impacts on nature needed to be measured and managed right through the supply chain”, he said.

But accounting systems needed to be refocused to fully calculate environmental degradation caused by economic development. Failure to do so meant companies were not measuring the balance sheet and profit and loss accurately, he added.

“I think the companies that really understand their ecological footprint and can manage it in all aspects of their business will be better positioned,” he said, adding this was not just about reputational risk but future regulatory risk.

The UNEP Finance Initiative draws in nearly 200 financial institutions such as banks, asset managers, pension funds and insurers to promote environmentally friendly investment principles to help the finance sector change the way it works.

“Rewiring our system is the key thing and it's trying to make sure we genuinely understand the risk agenda,” Burrett said.

The past three years had shown how little the financial sector understood systemic risk. The global financial crisis had shown that the sector had failed to grasp the risks it was creating, he said.

The United Nations and green groups say a price needs to be placed on all the services that nature provides, from clean air and water from forests, fish from coral reefs

and oceans, pollination of crops by bees to healthy soils to grow food.

About a billion people rely on coral reefs and mangroves, which are vital fish nurseries that replenish fish stocks, a major source of protein. Yet many of these ecosystems are in decline because of pollution, deforestation and expansion of agriculture, over-hunting and the impacts of climate change.

The world body says it is critical to put the brakes on the loss of plants and animals since the richness of species is central to the health of ecosystems.

Burrett said the devastation wrought by the oil spill in the Gulf of Mexico and Australia's decision to slash water extraction from the Murray-Darling river system highlighted the central role nature played and how impacts on ecosystems needed to be managed.

The Australian government said last week farmers in the prime agricultural Murray-Darling river basin would lose more than a third of irrigated water to try to restore ailing rivers and survive future droughts caused by climate-change.

Burrett said banks, asset managers, pension funds and insurers were already starting to change their investment practices with new environmental and social standards guiding money for project finance. But he said it was industries that had the greatest impact, such as miners, logging firms, food and pharmaceutical companies. Some were managing their environmental risks, such as insisting on using only sustainable palm oil.

“There are some positive signs but it's very fledgling.”

Source: Reuters at <http://in.reuters.com/article/idINIndia-52126520101012>

World Bank moves to put price on ecosystems

28 October 2010

A program launched at Nagoya aims to embed 'natural capital' into national accounts in an effort to improve biodiversity protection. On 28 October the World Bank launched a wide-ranging program aimed at encouraging countries to value ecosystems in the same manner as GDP.

Unveiled at the UN Convention on Biological Diversity in Nagoya, Japan, the five-year pilot program will aim to develop mechanisms for integrating ecosystem valuation into national accounts. The project, which has already secured backing from India, Mexico and the UK, will also look at how the resulting best practices can be applied around the world.

Ministers from 193 countries met in Nagoya to attempt to thrash out a global deal to protect biodiversity, based on a 20-point action plan designed to preserve habitats and reverse the loss of fragile ecosystems.

The UN Environment Program (UNEP) estimates that the likelihood that declines in biodiversity will have a severe impact on business has climbed sharply, while last week a major UN report concluded that a failure to put a value on the environmental benefits that accrue from forests, wetlands and coral reefs is one of the main drivers behind soaring levels of biodiversity loss and ecosystem degradation.

India's environment secretary Vijai Sharma said the World Bank project would help poorer nations to make more objective impact assessments when considering development bids.

The bank's president, Robert Zoellick, told reporters that the initiative would deliver a powerful method for demonstrating the true

value of ecosystems to finance ministries across the globe.

"The natural wealth of nations should be a capital asset valued in combination with its financial capital, manufactured capital, and human capital," he said. "National accounts need to reflect the vital carbon storage services that forests provide and the coastal protection values that come from coral reefs and mangroves."

The bank also announced the establishment of the *Save Our Species* (SOS) initiative, in conjunction with the International Union for Conservation of Nature (IUCN) and independent financial organisation, the Global Environment Facility. It aims to bring together more than US \$20m in financing commitments from World Bank funds and private business to provide a series of grants for conservation action on the ground.

"Threatened species are the canaries in the global coal mine. If we can make Earth habitable to them, our societies will also thrive", said Monique Barbut, chief executive of the Global Environment Facility. "So far, the private sector has been the missing link, but the SOS Fund is providing the right opportunity for business to act decisively on this agenda while attending to their corporate bottom line."

Further help for developing countries arrived yesterday when host nation Japan offered US \$2bn over three years to help manage ecosystems and promote sustainable resource use. The British government also pledged to provide £100m over the next five years to international forestry projects which provide specific benefits for biodiversity under the UN's REDD+ scheme⁶.

⁶ Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. "REDD+" goes beyond deforestation and forest degradation, and includes the role of

But concerns remain that diplomats will be unable to secure an ambitious deal, as disagreements continued over the extent to which industrialised nations should fund biodiversity protection in developing countries.

The deadlock has prompted none other than Indiana Jones himself to throw his famous hat into the ring in an effort to move the talks forward. Actor Harrison Ford, attending the summit as a representative of NGO *Conservation International*, urged negotiators to put aside differences to agree a landmark deal.

“It is in our own human self-interest to put national interests aside, to the extent that is necessary and possible and to come together on an international basis to support biodiversity,” Ford told a news conference.

Source: BusinessGreen.com staff at <http://www.businessgreen.com/bg/news/1869847/world-bank-moves-price-ecosystems> [Ed. Will valuation by companies be next?]

Siam Cement tops Dow Jones responsibility Index

Siam Cement Group has become the first Thai company to lead the Dow Jones Sustainability Index's Construction and Materials Supersector, after years of laying out Bt1.4 billion per year on social and environmental projects.

“The DJSI is proof that we have strong commitment,” SCG president Kan Trakulhoon said yesterday.

Pramote Techasupatkul, president of SCG Cement and chairman of the SCG sustainable development committee, said investment back into the community would tend to rise in the years to come.

However, the sustainable development programme is not seen as a burden, as corporations stand to realise greater benefits but with social recognition, he said.

SCG is the first company from a developing country to head its section of the index. After lingering in the Gold Class for a few years, this year it beat Switzerland's Holcim for first place.

The DJSI, which selects the top 10 per cent of about 3,000 companies worldwide, has served as a good-corporate-citizen indicator to investors.

Kan said that when he met with new investors in Canada who normally look for long-term investment with a five-to-eight-year horizon, they did not ask for SCG's quarterly financial reports.

“Their focus was on how we take care of our people. This ranking guarantees our balanced principles in taking care of social and environmental projects. This will lead to sustainability, as in world business right now, a company can rise in this quarter only to flop in the next quarter,” he said.

Each year, SCG devotes about Bt5 billion to upgrading its manufacturing processes, and some Bt1 billion of this is earmarked for projects directly dealing with the environment.

The group just approved Bt600 million to upgrade its cement plant in Thungsong, Nakhon Si Thammarat, in an effort to continue cutting carbon emissions.

About Bt400 million to Bt500 million a year is also dedicated to corporate social responsibility projects.

SCG has put social and environmental gains above business gains, he said. The board of directors approves all environment-related projects without

conservation, sustainable management of forests and enhancement of forest carbon stocks.

paying attention to the internal rate of return.

Kan vowed to share his experiences with other Thai companies, acknowledging that being a role model is not enough. The company needed to reach out to other companies to help improve the quality of life.

“These practices will also be exercised in our overseas investment projects,” he told a foreign journalist. “In Vietnam, when we invested in a greenfield paper plant, the company presented scholarships, which now amount to 5,000 scholarships.

“In Cambodia, the first thing was to take care of communities even before the construction of our cement plant. We also employ the same standard of equipment, and our standard is higher than the world standard by 30 per cent. We like to set standards.”

Pramote said that besides the DJSI, the company's achievements in sustainable development were reflected through a report by an independent auditor. The report demonstrated the company's progress in dealing with environmental and social concerns.

Australian Productivity Commission study into emission reduction policies in key economies

15 November 2010

The Productivity Commission will undertake a study of emission and energy-reduction policies in key international economies to help inform the Government's plan to introduce a carbon price in Australia, the Federal Government has announced.

The study will determine the effective carbon price of a range of policies including carbon taxes and emissions trading schemes as well as those where the

price is less transparent, such as renewable energy targets and subsidies for low-emission technologies.

“Every policy to reduce carbon pollution puts an effective price on carbon, even if that price isn't immediately obvious,” the Deputy Prime Minister and Treasurer, Wayne Swan, said.

“Countries around the world are taking action to reduce carbon pollution and an open trading nation like Australia can't afford to be left behind. Australia needs to get started on introducing a carbon price to our economy.”

The Minister for Climate Change and Energy Efficiency, Greg Combet, said: “The Productivity Commission will determine the effective carbon price already adopted or planned by other nations including the United Kingdom, the United States, Germany, New Zealand, China, India, Japan and South Korea.

“It will establish the effective carbon price in those countries by examining the cost of action being taken or planned.

“It will also help to demonstrate the level of action that is already being taken by other countries around the world.”

The Assistant Treasurer, Bill Shorten said: “The Productivity Commission will consult with the business sector, government agencies and other interested parties and draw on evidence, including local research expertise in the economies being examined”. It will report to the Government by the end of May 2011.

The Commission will:

- examine and detail carbon pollution reduction policies;
- estimate the effective carbon price per tonne of carbon emissions faced by the electricity; generation

- sectors in these economies and selected industries in manufacturing and transport; and
- report on the methodology, assumptions and data sources used.

The Productivity Commission will report to the Government by the end of May 2011.

The study is part of the agreement struck with the Member for New England, Tony Windsor, following this year's Federal Election. Funding of \$2.6 million for the study was included in the forward estimates for the 2010-11 Mid-Year Economic and Fiscal Outlook.

CALLS FOR PAPERS

Journal of the Asia Pacific Centre for Environmental Accountability (APCEA Journal Special Issue in 2011.

The editors of the **Journal of the Asia Pacific Centre for Environmental Accountability** invite you to submit to their Special Issue on the 9th CSEAR Centre for Social & Environmental Accounting Research Australasian Conference 2010 to take place at Charles Sturt University's award winning environmental showcase Albury Wodonga Campus on the banks of the Murray River, in the heart of the world renowned North East Victorian wine region. The conference will be hosted by the Charles Sturt University School of Accounting in the only 6 star accredited energy efficient commercial building in Australia.

As in previous CSEAR community events a diverse range of researchers and practitioners attended; covering the full scope of CSEAR community interests including accounting, auditing and accountability in both the private and public sectors. We encourage the submission of papers to the *Journal of the Asia Pacific Centre for Environmental Accountability (APCEA Journal)* which accepts multiple methodologies and interdisciplinary approaches.

Papers should be received no later than **15th January 2011** for publication in the *APCEA Journal* in **2011**. All submissions should be sent to the Co-editor: Dr Sumit Lodhia at apcea@unisa.edu.au

All papers will be double blind peer reviewed by independent academic experts.

The Journal is a recognised ERA level C Journal in Australia.

For more information on author guidelines and submission please visit: http://www.unisa.edu.au/cags/APCEA/instructions_for_authors.asp

CSEAR Conference News 2010-2011 (from the Director, Professor Rob Gray)

During 2010, it has been a great pleasure to meet up with some of you in Orlando, St Andrews and Catania at three of CSEAR's increasing number of regular conferences. These Congresses were most productive for all who attended, as well as providing some very stimulating debates. I have also received excellent feedback from the conference held recently in Leiria, in October. Many thanks indeed to Robin, Pasquale, Eleonora, Teresa and their colleagues for all their help and unstinting support for CSEAR in arranging these events.

As a follow up we decided to write and bring members up to date with what is happening at the various CSEAR conferences organised around the world in the rest of 2010 and in 2011. The continuing development and expansion of all these conferences has been a delight for us all.

CSEAR Conferences in 2011

1. The 2011 North American Congress on Social and Environmental Accounting Research, 3rd-5th May, 2011 Concordia University, John Molson School of Business, Montreal, Canada

The 3rd CSEAR conference in North America will be held in Canada at Concordia University. Limited to a maximum of 60 delegates, the emphasis of the conference will be on a high level of interaction, discussion and debate in a

friendly, supportive and relaxed atmosphere. Interdisciplinary submissions are strongly encouraged. Charles H. Cho (Concordia University) and Michelle Rodrigue (Université Laval) are organisers of the conference and a call for papers is attached.

2. The 1st CSEAR France (Congress on Social and Environmental Accounting Research) 13th-14th June, 2011 Université Paris Dauphine, Paris, France

The Université de Paris Dauphine is delighted to announce that the First French Conference on Social and Environmental Accounting Research (under the umbrella of CSEAR) will be held in Paris, France on June 13th and 14th, 2011. The main objective of the conference is to provide a deliberately informal discussion forum to further enhance research in new instruments, policies and strategies related to sustainable development. The conference welcomes various interdisciplinary perspectives beyond accounting such as (but not limited to) organisational theory, human resources, marketing, finance, strategy, economy but also to political science, sociology, urban planning and environmental sciences. Submissions are welcome in either French or English. The conference website is at: <http://csearfrance.wordpress.com/>. A Call for papers is attached.

3. 8th Reunión de Investigación en Contabilidad Social y Medioambiental/ Spanish Conference on Social and Environmental Accounting Research, 21st-22nd July, 2011, University of Burgos, Spain

Since 1997, the Centro de Investigación en Contabilidad Social y Medioambiental (CICSMA) and CSEAR have supported the bi-annual Spanish Conference on Social and Environmental Accounting Research. The Eight Spanish Conference will be held in Burgos, and organised by ERGO

Research Group, Universidad de Burgos. The Keynote Speakers are Jan Bebbington and Jeffrey Unerman. A Call for Papers is attached. The conference website is now available at: http://www.ubu.es/ubu/cm/ubu/tkContent?pgseed=1279293185772&idContent=150036&locale=es_ES&textOnly=false

4. The 2011 South American Congress on Social and Environmental Accounting Research: CSEAR 2011: South America, 25th-26th July, 2011, The University of São Paulo, Brazil

The 2nd CSEAR South America conference will be held in Ribeirão Preto, São Paulo, Brazil, in the Faculdade de Economia, Administração e Contabilidade de Ribeirão Preto da Universidade de São Paulo - FEA-RP/USP. Attendees include academics, practitioners and doctoral students at all levels of experience, and involved with all aspects of social, environmental and sustainability accounting, reporting, theory and practice. The Confirmed Keynote Speakers are Jan Bebbington and Nelson de Carvalho. A call for papers is attached. The conference website is now available with full details of the conference at: <http://csearsouthamerica.org/csear2011/index.php>

5. 23rd CSEAR International Congress on Social and Environmental Accounting Research, 7th-9th September, 2011 University of St Andrews, UK

The annual International Conference of the Centre for Social and Environmental Accounting Research (CSEAR) will be based as usual at the University of St Andrews in Scotland. The conference is a gathering of academics, practitioners and researchers who focus on the teaching, research, theory and practice of social, environmental and sustainability accounting and reporting. Further details will follow.

Additional conferences in 2011 and 2012 are being discussed and as soon as we have further details we will circulate these to everyone.

If you would like to know more or get involved with any of these events either

contact the conference organisers directly or write into us at the CSEAR office.

Email: csear@st-andrews.ac.uk<<mailto:csear@st-andrews.ac.uk>>