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EDITORIAL

In this third edition of the *APCEA Journal* for 2009 two feature articles are presented. The first is an examination of recent developments of sustainability accounting in local government in two countries by Professor Roger L. Burritt, Prabanga Thoradeniya, Associate Professor Akira Omori and Professor Chika Saka. The examination of recent developments in Japan and Australia, in the context of new public management reveals several differences which could make it more difficult to integrate mainstream and sustainability accounting than is the case in Australia.

The second paper, by Emma Zhang-Debreceeny, Mary A Kaidonis, and Lee Moerman argues that the International Accounting Standard Board's difficulty in arriving at a standard for accounting for emission rights, which are central to Emission Trading Schemes, is an opportunity to re-examine the issues from an environmental ethics approach. The paper concludes that social ecology can inform accounting standard setters about the accounting treatment of emissions rights.

We then follow our regular **Environment Extra!** with information about a **PhD Completed** and **Forthcoming Conferences**.

The editors would like to welcome Professor Craig Deegan to the APCEA Journal Editorial Board. Craig's major research area is the area of social and environmental accountability where he has a strong international reputation gained in part from publication of a large number of high quality refereed journal articles. The editors would also like to welcome Professor Gweneth Norris to the editorial board. Gweneth is

Professor of Management (Accounting) with the School of Law and Business at CDU. Professor Norris joined CDU from the University of South Australia where she was Associate Professor of Accounting in the School of Commerce within the Division of Business & Enterprise. We look forward to both Craig and Gweneth's contribution to the editorial experience at APCEA Journal.

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Instructions for contributors

Articles should be submitted in a word document, *Times New Roman*, 12 point, single spaced, two columns, attached to an email. References should be in the UniSA Harvard author-date referencing style, available from the following link:

<http://www.unisanet.unisa.edu.au/learningconnection/student/learningAdvisors/documents/harvard-referencing.pdf>

As a guide to authors articles should have no more than 6,000 words. However, the submission of short articles is particularly welcome. Feature articles are independently reviewed by members of the Editorial Board in accordance with the following 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.'

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SUSTAINABILITY ACCOUNTING IN LOCAL GOVERNMENT: COMPARISONS BETWEEN JAPAN AND AUSTRALIA

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ABSTRACT

Sustainability accounting in local government is under-researched and in an embryonic state of development. An examination of recent developments in two countries, Japan and Australia, in the context of new public management reveals several differences. First, Japan adopts a narrower version of sustainability accounting and reporting commensurate with a focus on environmental matters as influenced by national policies. Second, wider measures of eco-efficiency benefits are reported in Japan and are integrated with notions of effectiveness, unlike the situation in Australia. Finally, accrual accounting is not in use in Japan thereby making it harder to integrate mainstream and sustainability accounting than is the case in Australia

1. INTRODUCTION

To date, attention has largely been directed at approaches to sustainability accounting in the private corporate sector where the emphasis is upon the business case for corporate sustainability (Salzmann et al., 2005) and building information about social and environmental impacts into everyday

decision making activities (Schaltegger & Wagner, 2006). Although the question has already been raised as to whether the planet is safe in the hands of private companies (Gray & Bebbington, 2001) less attention has been directed at the role of public sector entities (Ball, 2005; Farnetti and Guthrie 2009).

Public sector entities as well as private sector entities consume the limited environmental and social resources in their everyday operations and, from the sustainability point of view, also need to pursue efficiency in their activities. In addition, public sector entities have responsibility for maintaining sound environmental /sustainability conditions in their jurisdictions. Therefore, in order for local government to be held to account by residents, demands are growing for the introduction of sustainability accounting. In practice, in some local governments sustainability accounting information is already being disclosed and so local government is considered here as being representative of public sector entities.

The purpose of this paper is to identify characteristics of sustainability accounting in Japanese and Australian local governments, and to clarify the differences between Japanese and Australian cases. In addition, the reason why those differences have emerged is examined.

Local governments in Japan and Australia are selected for study because (1) both countries have developed sustainability accounting and reporting practices, but (2) the government accounting system and new public management (NPM) based method of management implemented differs between the two countries.

To undertake the comparison between practices in two different countries, the paper is structured as follows. First, in Section 2, two characteristics of sustainability management and accounting in local government are identified: “controllable activity management” and “administrative activity management”. In Section 3, relevant aspects of NPM are provided as background information about sustainability accounting in local governments in the two countries. Third, in Sections 4 and 5, sustainability accounting practices in Japan and Australia are examined in the context of NPM and the respective characteristics of local government. In the final section, differences between sustainability accounting in local government in Japan and Australia are clarified, and some remaining issues that need to be solved in future research are presented.

2. PUBLIC SECTOR SUSTAINABILITY MANAGEMENT AND ACCOUNTING CHARACTERISTICS

In general, public sector entities supply public administrative services for residents at no charge or at a price which does not reflect the full economic cost, whereas private sector entities provide goods or services with a view to profit. The ratio of expenditure by the general government sector to Gross Domestic Product is about 18%¹ both in Japan and Australia, and the public sector plays an important part in their national economies. Hence, we can identify the activities of public sector entities as having considerable impact on the national economy, environment and society (GRI, 2004, pp. 2-3; CIPFA, 2004, p.9).

Public sector entities not only need to implement environmental protection activities to improve their environmental performance, but they also need to act as leaders of sustainability management and accounting (GRI 2005, p.8). Considerable influence of public sector entity activities has raised the issue of the need to be accountable

and to disclose sustainability-related information to residents. Information needed relates to the environmental burden imposed and any improvement from local government activities in accordance with delegated responsibility to manage activities impinging on environmental and social impacts. From this point of view sustainability management is a “controllable activity management” (Kawano, 2001, pp. 119-122). Hence, sustainability accounting in local government can be called “Accounting for Controllable Activity” (hereafter ACA).

ACA has a similar accounting structure to that of private corporate sustainability accounting. Therefore, ACA for local government can act as an exemplar of practice (Bennett, 2008, p. 445; CIPFA, 2004, p. 9).

Public sector entities with a sustainability strategy to manage environmental conditions in their jurisdictions need to clarify whether conditions are getting better or worse. Sustainability management from this point of view can be called “administrative activity management” (Kawano, 2001, pp. 119-122). Sustainability accounting in public sector entities also plays a role in preparing sustainability-related information relating to administrative activities and in the communication of that information to residents. Sustainability accounting in this sense can be termed “Accounting for Administrative Activities” (hereafter AAA). The AAA aspect of sustainability accounting is a distinguishing characteristic of public sector entities. Sustainability accounting by private sector entities does not have this characteristic.

3. NPM TRENDS IN THE PUBLIC SECTOR

Recently, public sector entities have been introducing sustainability accounting both in Japan (Kawano, 2001) and Australia (Farneti and Guthrie, 2009). Diffusion of NPM in public sector entities is one of the main backgrounds to this trend. As NPM provides context through which to examine the trend

¹ Data extracted by “OECD.Stat.”(OECD, 2009).

in sustainability accounting in the public sector, an understanding of NPM is needed.

NPM refers to “a shorthand name for the set of broadly similar administrative doctrines which dominated the bureaucratic reform agenda in many of the OECD group of countries from the late 1970s.” (Hood, 1991, pp. 3-4). NPM can be characterized as “lessening or removing differences between the public and the private sector” and as “shifting the emphasis from process accountability towards a greater element of accountability in terms of results.” (Hood, 1995, p. 94).

Hood (1991, pp. 95-97; 1995, pp. 4-5) points to the following doctrines employed by NPM:

- (1) “A shift towards greater *disaggregation* of public organizations into separately managed ‘corporatized’ units for each public sector ‘product’”;
- (2) “A shift towards greater *competition* both between public sector organizations and between public sector organizations and the private sector”;
- (3) “A move towards greater use ... of management practices which are broadly drawn from the private corporate sector ...”;
- (4) “A move towards greater stress on *discipline and parsimony* in resource use and on active search for finding alternative, less costly ways to deliver public services ...”;
- (5) “A move towards more ‘*hands-on management*’ ...”;
- (6) “A move towards more *explicit and measurable ... standards of performance* for public sector organizations ...”;
- (7) “Attempts to control public sector organizations in a more ‘homeostatic’ style according to present *output measures*”

These doctrines of NPM can be realized by transplanting business management methods from private sector to public sector entities. In order to achieve this outcome public sector entities need to develop a business management cycle, such as continuous improvement through plan-do-check-act, and then the entities can move toward “management by objectives” or “management by results” (Hayashi, 2001, p. 2; Cavallusso and Ittner, 2004, pp. 244-245). The “result” from implementation of these doctrines can be captured by using the input/output model illustrated in Figure 1. According to Figure 1, first, public sector entities have to set “objectives”, in order to achieve particular social and economic “needs” of residents. Second, resources are needed as “inputs” to “activities” which help achieve the “objectives”. The “activities” lead to “outputs” for the entities. Interactions between “outputs” and the social environment produce medium term “results”, and long term “impacts” on society. Finally, the value of “activities” and “outputs” of public sector entities relies on “outcomes” that consist of “results” and “impacts” (Pollitt and Bouckaert, 2000, p. 12).

According to “management by results” thinking, *economy* and *efficiency* can be measured through the comparison of inputs and outputs, and *effectiveness* can be captured by comparing objectives and outcomes (e.g. OECD, 1997, pp. 26-27; Hayashi, 2001, p.3). The system of performance evaluation is a one of the NPM methods employed by a number of public sector entities both in Japan and Australia (Christensen and Yoshimi, 2001). The aims of this system are to measure economy, efficiency and effectiveness of policies, programmes and projects executed by public sector entities, and to utilize the results of the evaluations for administrative planning.

Further, in order to measure and communicate efficiency of administrative activities, it is expected that governmental accounting systems should play a significant role in policy management (Lapsley, 1999, p.

204; Guthrie, et al., 1999, p. 210; Pina and Torres, 2003, pp. 334-335; Yamamoto, 2001, p. 251). In line with global NPM trends, governmental accounting reform has been promoted both in Australia and Japan. One additional consideration relates to the introduction of accrual accounting. The accrual based accounting system has been fully introduced into the Australian public

sector, whereas NPM has been introduced into Japanese public sector entities without modifying the conventional cash based accounting system (Guthrie, et al., 1999; Yamamoto, 2001; Pina and Torres, 2003). Since the cash based accounting system has a legislative background in Japan, two separate methods of accounting are now in existence.

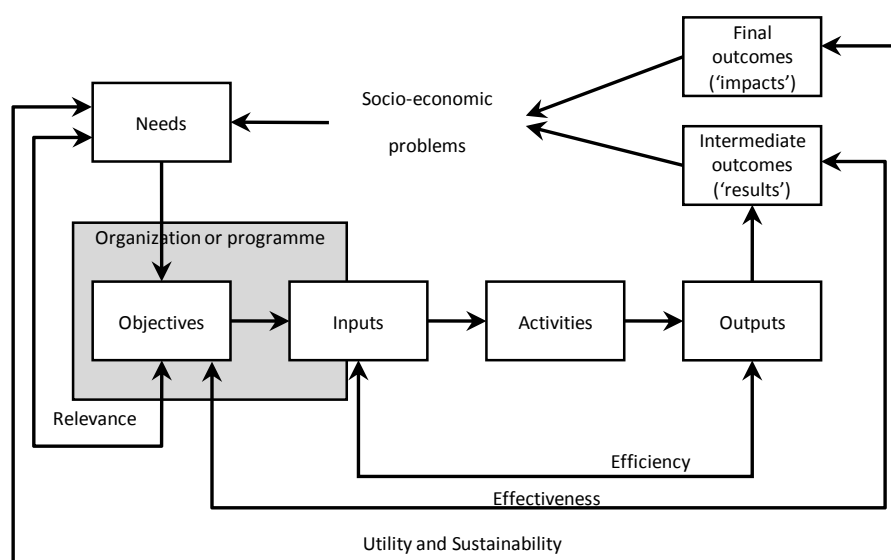


Figure 1: The input/output model for NPM (Source: Pollitt and Bouckaert, 2000, p. 13)

4. SUSTAINABILITY ACCOUNTING IN JAPANESE LOCAL GOVERNMENT

4.1. Background to Sustainability Accounting in Japanese Local Government

In this section two important considerations are introduced relating to environmental policies and environmental management systems.

Environmental Policies and Sustainability Accounting

Japanese central and local governments have been set institutional and legislative structures for environmental conservation since the 1992 Rio Earth Summit. At the centre, the *Basic Environment Law* of 1993

represents the government's fundamental environmental concepts, policies and programs. In order to implement ambiguous concepts prescribed in law, the government was required to establish the Basic Environment Plan which prescribes specific medium-term programs.

Enactment of the Law and the Plan of central government has diffused the setting of environmental ordinance and the basic environment plan by local governments. This plan provides the basic guideline for environmental administration, clarifies fundamental principles of environmental programs, and integrates each individual environmental plan (Tanaka, 2008). The plan has a *Plan-Do-See* characteristic as in the following steps (Kitamura, 2003):

(1) Measurement of the state of the

- environment of the jurisdiction;
- (2) Set medium-term targets and programs; and
 - (3) Execute, manage and provide feedback about the plan.

A number of local governments have been introducing systems for progress management or management by objectives. The law recommends that progress/objective management processes contain evaluation of progress toward initial established targets with the results of the evaluation being disclosed in an environmental report or white paper. Finally, the information is to be used in revision of the plan.

Officers and managers of local authorities already realize the importance of the plan and its management. Hence, in practice, utilization of sustainability accounting information to progress/objective management is one of the principal reasons for introducing sustainability accounting in Japanese local governments (City of Kobe, 2008; Kyoto City, 2009). This trend is characteristic of sustainability accounting in Japanese local governments.

Diffusion of Environmental Management Systems in Local Governments

Another trend in environmental administration in Japanese local government is diffusion of environmental management systems (hereafter EMS), such as ISO 14001. Many researchers have identified positive drivers for the introduction of EMS in local governments (e.g. Lewis, 2000; Burström, 2000; Norén and Malmborg, 2004; Zutshi and Sohal, 2004). Most large and medium sized local governments in Japan have already established EMS in their offices.

With regard to NPM in local governments, the benefits from implementing EMS are: cost savings through reduction of input and output of resources; facilitation of communication between staff; and increasing efficiency and effectiveness of existing systems through improvement of daily operations (Zutshi and Sohal, 2004, pp. 350-352). In short, pursuing efficiency and

effectiveness of activities through NPM has been driving the introduction of EMS in local governments.

The EMS under ISO 14001 consists of a plan-do-check-act management cycle, and as a result, EMS intends indirectly to achieve continuous improvement of environmental performance. However, environmental policies, targets, and progress/objectives management are voluntarily established by each entity. Hence, EMS only presents a conceptual framework for consideration (Gray and Bebbington, 2001, p. 45; Schaltegger and Burritt, 2000, p. 378).

Further, the EMS itself does not directly contribute to improving environmental quality in the jurisdiction - the highest priority in local administration (Lewis, 2000, p. 315; Burström, 2000, p. 282). Even if better public environmental administration can be promoted by using physical information produced by the EMS, it is necessary for a link to be drawn between planned and actual physical information, in order to make EMS more effective. This is one of the reasons why several Japanese local governments have been introducing sustainability accounting.

4.2. Objectives of Sustainability Accounting in Japanese local government

At the prefecture and city local government levels, sustainability accounting tries to adopt the idea of the importance of input, output and outcome data as the basis for measuring efficiency and effectiveness of environmental activities. Objectives of these activities are to manage effectively the implementation of the basic environment plan for local government environmental policies and verify progress of the EMS. Therefore, local governments wish to introduce a management tool for the plan, which, with the assistance of the EMS, has become the highest priority for environmental administration.

As stated in section 2, government activities possess dual characteristics – control and administration (Kawano, 2001, pp. 119-122;

CPA Australia, 2004, p. 12). The objective of control is to manage the office of the local government, while that of administration is to manage the effects of environmental policies on areas under their jurisdiction (Kawano, 2001, pp. 119-121). These two objectives of local government sustainability accounting are summarized in Figure 2.

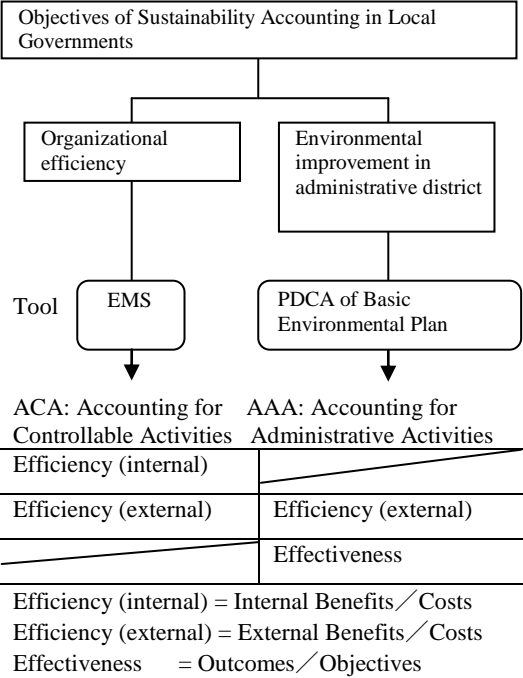


Figure 2: Objectives of Sustainability Accounting in Japanese Local Government

ACA aims to measure inputs (costs) of environmental conservation activities and outputs (benefits) from those activities; therefore, measurement of the outcome on society is of secondary importance. These environmental conservation activities refer to “the prevention, reduction, and/or avoidance of environmental impact, removal of such impact, restoration following the occurrence of a disaster, and other activities” (MOE, 2005, p. 3). Sustainability accounting pursues the efficiency of these environmental conservation activities.

AAA aims to measure inputs (costs), outputs (benefits) and outcomes (results) of environmental programs and projects

executed by the local government in monetary terms, as far as possible. As stated above, effectiveness is measured by comparing objectives with outcomes. Since the environmental programs and projects are implemented in order to achieve the objectives described in the basic environment plan, AAA pursues the effectiveness of environmental administration.

4.3. Sustainability Accounting Example in Japanese Local Government

Yokosuka city has the longest experience of integrated sustainability accounting, commencing disclose of information since fiscal year 1998 (Yokosuka City, 2004). Yokosuka City’s sustainability accounting framework is represented in Figure 3. According to Figure 3, Yokosuka City identifies both ACA and AAA information; hence this type is referred to as “integrated”.

Accounting for Controllable Activities (ACA)

Environmental Conservation Activities	Monetary Terms		Physical Terms	
	Expenses	Internal Benefits	External Benefits	Benefits (KPI)
XXX	XXX	XXX	XXX	XXX

Accounting for Administrative Activities (AAA)

Environmental Programs and Projects	Monetary Terms		Physical Terms	
	Expenses		External Benefits (KPI)	Outcomes (KPI)
XXX	XXX		XXX	XXX

XX = accounting provided by Yokosuka City, Japan

Figure 3: Yokosuka City’s framework for sustainability accounting (Source: Yokosuka City, 2004).

Sustainability Accounting for Controllable Activities

The upper half of Figure 3 represents the framework for ACA based sustainability accounting in Yokosuka City. Since the information disclosed consists of expenses (inputs) and benefits (outputs) from environmental conservation activities, information produced is similar to that of private sector entities. Expenses and benefits are classified by each environmental conservation activity; therefore, the ACA

type of information mostly complies with the Environmental Accounting Guidelines of the Japanese Ministry of the Environment (MOE, 2005).

Expenses are classified by each environmental conservation activity, such as “Pollution Prevention”, “Global Environment Conservation”, “Resource Circulation and Waste Disposal”, etc.. Also, these expenses are measured by the actual (cash-based) expenditures for environmental conservation activities.

Benefits are classified into three categories, internal, external and key performance indicators (KPIs). Benefits are measured in monetary terms except for KPIs which are measured in physical terms. Internal benefits to the local government itself refer to realized revenue and the benefits from resources savings, whereas external benefits refer to the effect which residents and/or society enjoys through environmental conservation activities undertaken by government activities. The actual amount of external benefits is not as large as the internal benefits.

In summary, it can be said that ACA places emphasis on the efficiency of environmental conservation activities; hence, this method of sustainability accounting has been influenced by NPM trends that pursue efficiency in government activities. ACA information prepared is used to reconsider the “See” step in EMS; however, it cannot reveal the state of the environment of the jurisdiction in detail. Further, if pursuit of efficiency of organizational activities places greater importance on accounting systems, the risk is that administrative officers will tend to focus on easy-to-manage activities as efficiency orientated NPM is introduced (Burritt and Welch, 1997, pp. 16-17).

Finally, consideration is given to another aspect of sustainability accounting, AAA.

Sustainability Accounting for Administrative Activities

The lower half of Figure 3 represents the framework for AAA based sustainability accounting in Yokosuka City. This type of

accounting is unique to public sector entities. Expenses and benefits are presented symmetrically in a similar way to ACA; however, expenses and benefits are measured in accordance with environmental programs and/or projects that are included in the basic environment plan.

Expenses are extracted from existing general accounts based on cash-based measures of accounting, and represent the amounts expended on environmental administration. However, in contrast with ACA information, benefits are measured and disclosed only in physical units or indices in monetary terms. Measured benefits or indices are classified into three; “environmental administrative activity indices”, “environmental pressure indices” and “environmental state indices” (hereafter EAI, EPI, ESI). All of these indices are categorized as external benefits.

EAI refers to the *output* of environmental administrative projects; e.g. the number of EMS constructed in the jurisdiction and “the volume of collected recyclable wastes in the jurisdiction”, etc.. Strictly speaking, EPIs do not express benefits, but they represent the volume of environmental burdens which residents and firms within the jurisdiction discharged during the accounting period. Therefore, EPI is another aspect of *output* from the government’s administrative activities. ESI belongs to *outcome* or *result* indices. Examples of ESI are concentrations of SO₂, benzene, and PM10, BOD, COD, etc.....Yokosuka City’s example shows the amount of administrative effort by comparing the initial target with the indices.

These characteristics of AAA indicate the pursuit of *effectiveness* of environmental administrative activities and, hence, are different from the *efficiency* focus of the ACA method. In summary, using the AAA method the government intends the *results* of the administration to be presented through *management by results/objectives*.

The ACA part of sustainability accounting in Yokosuka City has now shifted to their policy evaluation systems, and they do not

disclose such information as “accounting” (Yokosuka City, 2009, p. 150).

An Analysis of Yokosuka City’s Sustainability Accounting Information

An inter-annual analysis of Yokosuka city’s sustainability accounting monetary data is shown in Tables 1-a and 1-b.

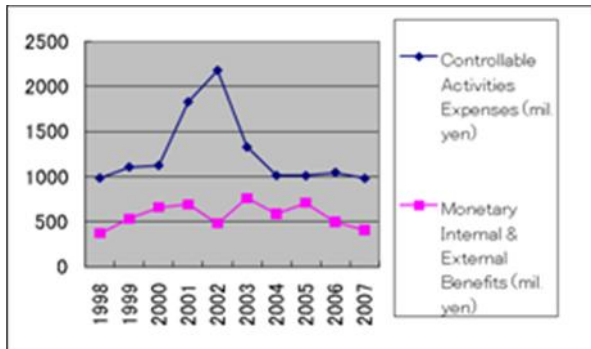


Table 1-a: Expenses and Benefits of Controllable Activities in Yokosuka city

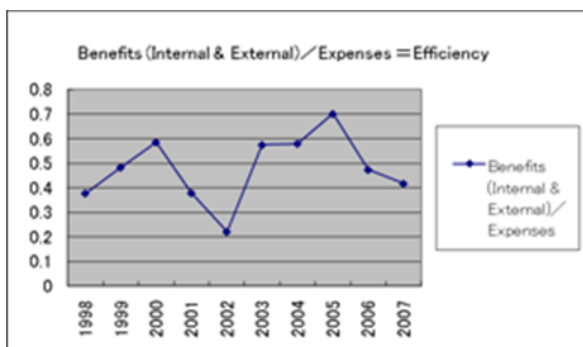


Table 1-b: Efficiency of Controllable Activities in Yokosuka city

According to Table 1-a, the amount of environmental conservation expenses increases rapidly in the 2001 and 2002 fiscal years. The main reason for this is increased expense for dioxins treatment at waste incinerating facilities.

Table 1-b shows that the cost-benefit analysis during 10 fiscal years changes between 0.4 and 0.7. The reason for low efficiency of 0.2 to 0.4 in 2001 and 2002 fiscal years is that the benefit from dioxins treatment could not be converted into a monetary amount because of technical difficulties (a statistical aberration caused by measurement problems). Yokosuka City [2004, p. 12] recognizes that the efficiency of

their controllable activities is achieved through comparing costs with benefits expressed in monetary and non-monetary terms. Needless to say, the controllable and administrative activities should be evaluated by using both the economic benefits presented in Table 1, and also the benefits expressed in physical terms.

4.4. BSC-type Sustainability Accounting in Japanese local government

Iwate Prefecture (Iwate) provides a second example of a local government which has integrated the two types of sustainability accounting. Iwate uses a different approach and recognizes different performance areas, as reflected through a balanced scorecard (BSC). Inputs are expressed in terms of the *monetary* representation of these activities; outputs are designed around *organizational learning* and *internal processes* that can help reduce environmental impacts; while outcomes are couched in terms of the *customer (or user)* perspective.

Balanced Scorecard Perspectives				
Environmental activities	Financial	Learning and growth	Internal Processes	User (Stakeholder)
Targets	Input	Output	Output	Outcome
XXX	XXX	XXX	XXX	XXX

XXX = accounting provided by Iwate prefecture, Japan

Figure 4: Iwate’s framework for sustainability accounting (Source: Iwate, 2004).

The partial framework for sustainability accounting in Iwate prefecture is shown in Figure 4 and it reflects:

- the inclusion of information on environmental and economic impacts of the public sector organization’s activities;
- information about economy, efficiency, and effectiveness of activities;
- a ready means for integrating information, for example, to assess eco-efficiency or eco-effectiveness; and

- the provision of information in monetary and non monetary terms related to financial, learning and growth, internal processes and user dimensions of performance.

Iwate data provides an integrated sustainability accounting system with input-related cost information and output-outcome information expressed in physical and monetary units. The information is related to two sets of environmental activities – environmental administration policies and internal environmental measures.

Input information used for evaluating the economy of administrative services can be obtained from the ‘investment amount’ and ‘expense amount’. Performance information on the output - outcome relationship, used for evaluating efficiency and effectiveness, can be obtained from the ‘future (learning and growth) perspective’, ‘internal process perspective’ and ‘user perspective’ columns.

Iwate introduced sustainability accounting in the context of assessing the results of conjoint analysis applied to value different environmental conservation options desired by residents as well as promotion of the notion of ‘Public Private Partnerships’. Information from conjoint analysis affects policy choices and the results of prefecture decisions are reflected in the sustainability accounting information. The accounting system supports decision making at the local prefecture level in a pragmatic way.

The Iwate example illustrates the perceived importance of a pragmatic, user based approach to development of sustainability accounting as a tool that contributes information in relation to policy decisions, planning and control in the prefecture. However, to date, Iwate’s sustainability accounting and budgeting systems have not been integrated, thus reducing the usefulness of sustainability accounting data for planning and control. Sustainability accounting at Iwate could be seen as providing transparent information to stakeholders about the results of government policies, however, movement

towards sustainability accounting in local government would depend on recognition that social goals should also be considered and accounted for.

5. SUSTAINABILITY ACCOUNTING IN AUSTRALIAN LOCAL GOVERNMENT

Australia has three levels of government: the Australian Government (also called federal and Commonwealth), State and Territory, and local.

5.1. Sustainability Accounting and Reporting in the Australian Government

In 1992, in line with Agenda 21, introduced by the Earth Summit, the importance of *social* reporting and management for public sector entities was highlighted with the release of ‘Social Responsibilities of Commonwealth Statutory Authorities and Government Business Enterprises’ by the Australian Government’s Joint Committee of Public Accounts (Commonwealth of Australia, 1992). This report recognizes existing reports on social performance of Commonwealth entities and highlights inadequacies, especially in relation to issues of social justice for citizens and ‘clients’, responsibilities to employees, and towards the community. Since 1992, the pursuit of ecologically sustainable development has been increasingly incorporated into the policies and programs of Australian governments as a significant policy objective, for example, through the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (*the Act*) which came into force in 2000. Under Section 516A of *the Act* Commonwealth Departments, Parliamentary Departments, Commonwealth Authorities, Commonwealth Companies and other Commonwealth Agencies were required to include in their annual reports information about their performance in relation to ecologically sustainable development (ESD). These developments led to increased demand for sustainability accounting to support reporting at the Commonwealth level.

The ecological perspective rests with another department. In June 2003, Environment Australia (now DEWHA, The Department of Environment, Water, Heritage and the Arts) released *Triple Bottom Line Reporting in Australia: A Guide to Reporting Against Environmental Indicators*, a companion to *A Framework for Environmental Reporting: An Australian Approach*, previously launched in March 2000 (Department of Environment and Heritage, 2004).

Australia published three Australian State of the Environment Reports in 1996, 2001 and 2006 which show the nation’s environmental state at a given time (Lenzen, Dey & Murray, 2004; DEHWA, 2008). With the aim of evaluating the long-term sustainability of Commonwealth Government policies, the Treasurer publishes an Intergenerational Report (IGR) every five years (Coombs & Dollery, 2002).

Links between this push for TBL reporting and the development of sustainability accounting for public sector organisations at the Commonwealth level in Australia have not yet been clearly established. Sustainability accounting is in its infancy, but the basic foundations are in place for development.

State and Territory governments are clearly engaging in environmental reporting and considering TBL reporting, however links to sustainability accounting appear somewhat tenuous.

5.2. Sustainability Accounting in Australian Local Government

Some local authorities in Australia have incorporated the triple bottom line into their annual reporting processes, the City of Melbourne being the first to do so (GRI Resource Document, 2004, p.14). Other examples include Lake Macquarie City Council, Onkaparinga City Council, and Manningham City Council.

The City of Melbourne formally adopted the *Melbourne Principles for Sustainable Cities* on 2 May, 2002 (City of Melbourne, 2002; 2004) (see Table 2) and Eco city campaign,

to act now on the future challenges of changing climate (City of Melbourne, 2008a). These principles have the potential to guide the decision-making process by refining strategic planning and local governance.

Melbourne Principles for Sustainable Cities	
1. Long-term planning for intergenerational social, economic and political equity	6. Society and culture
2. Long-term economic and social security	7. Participatory communities
3. Biodiversity, natural ecosystems and their restoration	8. Social networks
4. Minimising ecological footprint	9. Sustainable production and consumption
5. The form and function of ecosystems	10. Continuous improvement, accountability and good governance

Table 2: Melbourne Principles for Sustainable Cities (Source: www.epa.vic.gov.au/Business_Sustainability/sustainable_cities.asp)

The following chart shows the amount the City of Melbourne spent (expenditure) and the amount it earned (revenue) in delivering its services and programs within the strategic objective of being an environmentally responsible city.

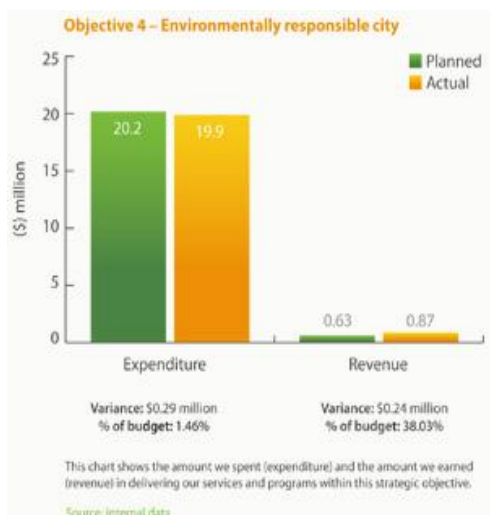


Chart 1: Expenditure and Revenue

(Source: The City of Melbourne, 2008b, Annual Report 2007/08: http://www.melbourne.vic.gov.au/annualreport/performance_environment.shtml).

The City of Melbourne continues to take steps to improve its capacity to monitor its environmental footprint. It has identified greenhouse gas emissions, water and waste as being the most relevant environmental sustainability issues (City of Melbourne, 2008b).

Second, performance measurement. In 2002, the City of Melbourne published 'Zero Net Emissions by 2020 – A roadmap to a climate neutral city' which positioned Council as a world leader by setting an ambitious target of zero net emissions by 2020. The following table shows the implementation status of the Zero Net Emissions by 2020 – and strategy update which was adopted by the Melbourne City Council in September 2008.

a) Leading edge design

Create a showcase out of the City of Melbourne's administration building current Procedures by 2005.	Achieved
Facilitate tenants/developers into consortia to invest in landmark green building developments.	Partially achieved

Commit to best practice for the Commonwealth Games Village.	Achieved
5 Star energy regulation for residential housing by 2003.	Achieved
New energy regulations for commercial property by 2004.	Achieved
Encourage the Property Council of Australia (PCA) to revise its rating code to include energy efficiency.	Achieved
Accelerate approvals for green buildings and environmentally sustainable development (ESD) features.	Partially achieved
Introduce mandatory energy modelling for buildings greater than 5,000 sq m.	Achieved
Introduce a procurement scheme for green offices.	Not achieved
Establish a green building 'learning hub' as part of a Global Centre of Greenhouse Expertise and Technology.	Not achieved
Fund design charettes for new buildings.	Achieved
Develop an energy assurance scheme for buildings greater than 5,000 sq m.	Achieved

b) Greening the supply

Progressively increase the City of Melbourne's use of renewable energy.	Partially achieved
Pass on innovative energy-efficient technologies to the City of Melbourne's	Partially achieved

Sustainable Investment Fund Independent Board of Trustees.	
Participate in a fuel cell demonstration project.	Not achieved
Establish a green supply chain by 2004, using the Green Tick and Greenhouse Challenge standards.	Not achieved
Participation in a Green Power buying consortium to access green power at the lowest possible price.	Achieved
Better coordination of expertise.	Not achieved
Promote Melbourne's expertise and technologies abroad and assist local firms to attract international investment in sustainable energy technologies.	Not achieved
Support the Victorian Government in encouraging the use of embedded energy, solar hot water and co-generation.	Not achieved
Support energy retailers and contractors to move to value-added services: examine solar hot water financing as a first step	Not achieved

c) Sequestration

Establish a city-rural partnering arrangement to invest in a carbon sink.	Not achieved
Invest in blue-Mallee eucalypt plantations as feedstock for renewable power generation, with eucalyptus oil as a by-product.	Not achieved
Establish an investment vehicle for City of	Not achieved

Melbourne businesses and residents for commercial offsetting projects.	
Link this investment vehicle and a carbon credit purchasing scheme for tenants as part of the pilot municipal emission trading market.	Not achieved

Table 3: The 'Zero Net Emissions by 2020 – Actions Implementation and Strategy Update 2008'

(Source: City of Melbourne (2008c), http://www.melbourne.vic.gov.au/rsrc/PDFs/EnvironmentalSustainability/Zero_Net_Emissions_2020.pdf)

Of interest is the observation that, according to the City of Melbourne, triple bottom line reporting led to changes in departmental processes, particularly in the way data was collected and performance analysed (GRI Resource Document, 2004, p. 27).

Some inferences for sustainability accounting can be found in their Triple Bottom Line (TBL) toolkit which represents a set of checklists, guidelines, templates and case studies for the application of TBL decision-making and reporting².

First, capital works. The toolkit includes a capital works sustainability statement designed to be applied to the capital works bidding/ budget approval process and to provide additional criteria against which capital work submissions are to be evaluated. The City uses two criteria for capital works (i) do they meet the strategic directions of the City, and (ii) how urgent are the works. Projects of critical importance lead to a pre-commitment. The toolkit suggests that sustainability rating is a third criterion that would be used to rank any capital works submissions that are not deemed critical or pre-committed. In practice, sustainability ratings were not needed as:

² City of Melbourne
<http://www.melbourne.vic.gov.au/info.cfm?top=166&pg=1197>
 accessed 21.10.08

The capital works budget for 2002/03 was absorbed almost entirely by a number of pre-committed and critical projects. This meant that no additional projects were approved and the Sustainability Statement ranking system was effectively made redundant, a situation likely to recur over the next few years.³

In effect, decisions were not influenced by the notion of sustainability adopted. However, an integrated approach would recognise the importance of sustainability issues in the first two criteria used to assess capital works.

The Global Reporting Initiative (GRI) and the *National Greenhouse and Energy Reporting Act 2007 (Cwth)*, as well as the International Council for Local Environmental Initiatives' (ICLEI) Cities for Climate Protection program, have helped to guide environmental sustainability performance reports of the City of Melbourne.

The 2006-07 Annual Report was runner-up in the first Global Reporting Initiative (GRI) Readers' Choice Awards for sustainability reporting - the only Australian organization to be recognized (City of Melbourne, 2008c). The 2007-08 Annual Report contains a stand-alone section on sustainability performance which was prepared to meet the requirements of GRI application level B (City of Melbourne, 2008b).

6. CONCLUDING COMMENTS

Several observations can be made about the contrasting cases of sustainability accounting examined in Japan and Australia.

First, is the difference in scope between sustainability information used by the local governments. Sustainability accounting in the Japanese local governments examined concentrate on environmental sustainability, whereas the scope of sustainability

accounting in Australian local governments is broader. The Australian case contains sustainability information relating to the economy, environment, social and cultural issues. In comparison with the Japanese cases, information disclosed in the Australian example is in line with international trends towards sustainability reporting represented by GRI. Nevertheless, Japanese local governments disclose more substantial environmental information than in the Australian case.

It can be inferred that the issue of scope is influenced by national policies of each country. The Australian Government has already enacted a sustainability strategy which includes social and environmental aspects, whereas the Japanese Government's sustainability strategy only concentrates on environmental sustainability as supported by the Act and the Plan.

Second, local governments from both countries have tried to measure efficiency of sustainability activities using costs and benefits. When comparing Table 1 with Chart 1, the Japanese examples consider both internal and external monetary benefits, whereas the Australian example only considers realized revenue as representing benefits. In the examples cited sustainability accounting by Japanese local governments places stress on efficiency by measuring benefits based on a wider scope of environmental aspects than the Australian case.

In relation to the effectiveness of sustainability activities, Japanese examples try to measure costs in monetary terms and benefits in physical units for each activity/program *over time* by using the AAA model, whereas in the Australian case effectiveness is measured using comparisons between *ex ante* targets and *ex post* environmental footprints. Therefore, it can be inferred that the Japanese model tends to express efficiency and effectiveness within a single framework; however, the Australian example uses variances to show effectiveness while playing down efficiency.

³ City of Melbourne at <http://www.melbourne.vic.gov.au/rsr/PDFs/TBL/CAPWORKSSU/STAINXT.DOC> accessed 17.5.05

Third, the linkage between mainstream accounting (accrual accounting or cash based accounting) and sustainability accounting differs between the two countries. As Australia has already converted to accrual based accounting, it is easier and useful to link mainstream accounting and sustainability accounting. On the other hand, there is no link between mainstream accounting and sustainability accounting in Japan.

NPM provides the background to introduction of sustainability accounting in local governments. Implementation of NPM can lead to the achievement of improvement in efficiency in the governments' activities; therefore, NPM can contribute to the improvement of governmental fiscal conditions through reorganizing inefficient programs and projects. Since outcomes or effectiveness are still difficult to measure, it can be inferred that public administrators tend to pursue efficiency rather than effectiveness. If so, no matter how a program or a project contributes to improved sustainability effectiveness, a problem is that public administrators may neglect those kinds of programs or projects. Hence, sustainability accounting in the public sector would not fully comply with the economic and efficiency based concept of NPM.

Sustainability accounting is still in its infancy in both of the countries and local governments surveyed; therefore, in order to construct sustainability accounting in public sector entities, further theoretical, empirical and case studies need to be promoted.

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ACCOUNTING FOR EMISSION RIGHTS: AN ENVIRONMENTAL ETHICS APPROACH

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ABSTRACT

We argue that the International Accounting Standard Board's difficulty in arriving at a standard for accounting for emission rights, which is central to Emission Trading Schemes, is an opportunity to re-examine the issues from an environmental ethics approach. We critically evaluate the IASB approach which privileges profits, and views emission rights as tradeable entitlements to pollute. We consider social ecology, an example of an environmental ethical perspective which holds that humans' survival and the environment's sustainability are inextricably linked. We conclude that social ecology can inform accounting standard setters about the accounting treatment of emissions rights.

1. INTRODUCTION

Climate change presents challenges for all stakeholders - individuals, policy makers, industries, and the eco-system (IPCC 2008). In 1997, the Kyoto Protocol was released as an international response to climate change, whereby industrialised countries agreed to reduce Greenhouse Gas (GHG) emissions "by 8% between 2008 and 2012, in relation to 1990 levels" (Blass, 2006, p. 30). The challenges and responses to climate change also provide an opportunity to engage in ethical approaches to the environment, not only by immediate stakeholders but by accounting standard setters.

The dominant response of industrialised countries to abate GHG has been to apply market mechanisms (Lohmann 2009, MacKenzie 2009). Emissions Trading Schemes (ETS) provide a market mechanism

whereby a central authority transforms GHG, of which 'carbon' is one, into a new tradable commodity (Andrew, 2008). It is assumed that the value of carbon pollution can be arrived at by trading emission rights that is, trading in the "right to emit pollutants" (IASB 2008a, para5).

Solomon and Lee (2000, p. 35) described ETS as a market means of "internalizing externalities". Traditionally the cost of pollution is considered an externality and thus is excluded from production costs. By giving carbon pollution a 'price tag', it is assumed that entities would be given an economic incentive to reduce carbon pollution in order to avoid the additional financial burden of having to purchase emission rights to cover actual emissions.

In order that ETS succeed in reducing overall emissions, there needs to be a limited supply of emission rights, and as a scarce resource the market is meant to determine the most efficient price of emission rights (Andrew, 2008). Price would influence whether it is more efficient for a firm to adopt carbon friendly technology rather than keeping the same polluting technology and buy emission rights. Blass (2006) argued that by allowing participants of an ETS to buy or sell emission rights it would mean that the Kyoto target could be achieved by the most cost efficient means. For entities that are unable to meet the emissions reduction target, they would have to purchase additional emission rights from 'cleaner' entities, and/or a central authority and/or a 'greener' country in order to cover their actual emissions level. While a central authority sets the maximum allowable carbon emissions quantity, the market mechanism is used to trade in permits and therefore will drive the price of emissions rights (Blass, 2006, Andrew, 2008).

Despite the fact that ETS have been in operation for about 4 years, according to the World Bank they were estimated to be worth

around “£15billion in 2007” worldwide (PricewaterhouseCoopers, 2008, p.18). Companies participating in ETS need to reflect this impact in their financial reports. Accordingly, the international accounting profession, through its standard setting guidelines, is required to engage with this new mechanism for carbon abatement. While it is the notion of a ‘carbon pollution cap’ that is expected to set the goal of emissions reduction, it is the cost of emission rights that is expected to change business behaviour in order to deliver emissions reduction (Andrew, 2008). The need to internalise costs of pollution or trade in emission permits, has the effect of shifting what was traditionally an external and costless concept into a costly activity and, hence, is “at the heart of the challenge to standard setters” (Cook, 2009, p. 457). The environmental crusader Gore (2007) urged:

a re-examination of accounting systems and measurement protocols to include the environment in the routine, everyday calculations by which our economy is governed.

This paper re-examines accounting for emissions rights in a way that is appropriate to address our ecological crisis.

In this paper we will first demonstrate that efforts to recognise emission rights, so far, have been dominated by mainstream accounting approaches. We critically evaluate the proposed mainstream accounting approach in order to open further discussion about accounting for emission rights. We highlight the implication of accounting for emission rights from an environmental ethics perspective. In particular we consider social ecology as an example of an environmental ethics approach and use this to re-examine the ‘nature’ of emission rights. We conclude that a social ecology view, an approach of environment ethics, offers insights into why accounting for emissions rights as assets or liabilities would undermine efforts to reduce GHG emissions.

2. BACKGROUND

Global ETS participants continue to await comprehensive and clear guidance from the International Accounting Standards Board (IASB). The IASB’s efforts to develop comprehensive guidance on accounting for emission rights have already been extremely challenging. The IASB’s International Financial Reporting Interpretations Committee (IFRIC) issued IFRIC 3 *Emission Rights* as “an appropriate interpretation of existing IFRSs for accounting for the EU Scheme” (IASB 2005). Despite the subsequent withdrawal of IFRIC 3, the IASB continues to have accounting for ETS on its board agenda (IASB, 2007; IASB 2008a; IASB 2008b). According to IFRIC 3 and consistent with the IASB Framework, emission rights are recognised as assets. The question remains: can this recognition adequately capture the ‘nature’ of emissions rights and still be consistent with the Kyoto protocol?

IFRIC 3 was withdrawn because it “creates unsatisfactory measurement and reporting mismatches” (IASB 2005). Therefore, companies were also concerned that the application of IFRIC 3 would force them to show a “distorted picture of their performance” (Cook, 2009, p. 457). This delay in implementing comprehensive and clear guidelines on accounting for emission rights from the IASB provides an opportunity to reconsider the basis upon which earlier attempts to arrive at an accounting standard rest. This paper focuses on the recognition issue rather than the measurement issue in relation to emission rights. The IASB (2008) has identified that, apart from the measurement issue, there are other fundamental issues that need to be appropriately addressed first. For example, what is the nature of an emission right? Is an emission right an asset? How should an emission right be recognised initially, particularly if a reporting entity receives it from a government as a grant or free of charge? Should a liability be recognised? Without resolving the nature of emission rights, accounting standard setters would not

be able to decide what attributes of an emission right they are trying to represent and ultimately to measure. In the next section, the notion of environmental ethics will be introduced to help shed light on how the 'nature' or 'essence' of emission rights can be re-examined.

3. MAINSTREAM APPROACHES, ENVIRONMENTAL ETHICS AND SOCIAL ECOLOGY

3.1 Mainstream Approaches

The importance of understanding emissions rights in the context of the environment is not merely a technical issue of recognition or measurement. There are fundamental issues at stake which are reflected in the questions Hopwood (2009, p. 435) raises, namely:

...can the ethical considerations of environmentalists be transferred to the economic market place? Or will the values of the market place overwhelm those of the environmental sphere, introducing a totally new set of unanticipated consequences and actions which are likely to be to the longer term detriment of the original concerns?

If emissions rights are seen as private property, then they possess the fundamental characteristics of assets with economic benefits, controllability and tradability. However, is the essential nature of emission rights adequately reflected if they are recognised as assets? The challenge to the IASB is not surprising considering that the IASB views the issue of emission rights as a technical one. The body has proposed a traditional, mainstream approach to provide answers. Mainstream approaches have considered ethical issues as non-technical and hence these have remained outside the IASB's domain. The IASB's approach is most evident when accounting standard setters see emission rights as something merely upon which the right 'price tag' must be assigned. It is at this point that we can pause to reconsider another way to conceptualise emission permits and to

consider them as inextricably linked to the ecological crisis.

In bringing to the forefront the imperative to mitigate climate change we are then able to identify that there is a serious moral dilemma, rather than a mere technical challenge. Zimmerman (1994, p. 3) argued that:

...ecological problems cannot be solved by simply tinkering with the attitudes and practices that generated those problems.

Environmental ethics offers another context within which to consider accounting for emission rights.

3.2 Environmental Ethics

Environmental ethics "examines how human beings should interact with the non-human world around them" (Palmer, 1997, p. 6). As a theoretical framework, environmental ethics "develops, suggests and analyses ways out of an environmental crisis" (Andrew, 2000, p. 197). In this paper we argue that social ecology, an approach of environmental ethics (Andrew, 2000) can be applicable to the re-conceptualisation of emission rights. As defined by Light (1998), social ecology posits that there is a relationship between society and the eco-system which can be investigated. Inspired by Marx's work on social hierarchy and class domination in a capitalist society, proponents of social ecology recognise the continuities between the natural world and human society, and their possible synthesis (Bookchin, 1980, Callicott and Frodeman, 2009). The ontological foundation of social ecology recognises that the exploitation of nature not only destroys the intrinsic value of eco-systems, but also the life line essential for human survival (Light 1998). Social ecologists see actions addressing ecology as social (Light, 1998; Bookchin, 1989). Accordingly, humans are deemed to have an obligation to preserve nature as it is also a part of the preservation and survival of human-kind (Bookchin, 1980; 1989; 1990). The inextricable link between humans and

the environment was also stressed by Geno (1995, p. 176):

...if human societies are to come to grips with their relationship to, and interdependence on, natural capital in the form of indispensable resources for survival, institutions such as accounting and economics must face the moral as well as technical challenges in accounting for sustainability.

Social ecology is consistent with the view that human potentialities can shape the future, and need to be brought to the forefront of humans' action (Bookchin, 1980).

3.3 Social Ecology

Social ecology challenges the mainstream notion of 'rationality' by describing current society as "...a totally irrational society that threatens to undermine the fundamentals of life on this planet" (Bookchin, 1980, p. 28). It is suggested that since it is logically possible for humans to achieve self-realisation without averting serious environmental damage, it is a matter of developing an attitude that appreciates the intrinsic value of nature (Holbrook, 1997, Bookchin et al, 1990). Consequently our ecological problems can only be solved with a shift in mindset (Holbrook, 1997, Bookchin et al, 1990). Such an attitude can assist us in making 'sensible' social action which has economic sense and ecological sense in the long term.

In reference to the notion of 'land ethics' Leopold, an environmental ethics pioneer, suggested that the boundaries of community need to include nature (Nash, 1990). He proposed that in a sustainable society humans and nature co-exist in a non-hierarchical manner, and the idea of life community extends far beyond traditional definitions (Leopold 1933, cited in Nash, 1990). Leopold approved the notion of responsible "alteration, management and use" of natural resources, and pointed out that humans have the responsibility to take action to "prevent the deterioration of the environment" (1933 cited in Nash, 1990, p. 71). Birkin (1996)

argued that accounting for ecology should take into account environmental externalities to ensure that economic growth does not go beyond the carrying capacity of an ecosystem. Social ecology adopts an open and inclusive approach and can enable the integration of the environment into the "social realm and not divorced" from it (Gallhofer and Haslam, 1997, p. 163).

Consistent with social ecology, Eckersley (1998, p.169) pointed out that individuals make choices by

...developing new technologies, cultivating new social relations, creating new legal relations, critically re-examining human consumption patterns, needs, desires, and re-evaluating and enlarging what passes for human virtues.

Social ecology also includes "power, authority and democracy" (Light, 1998, p.86) and thus accommodates the complexities that inform and shape the social aspect of an ecological perspective. In this way, social and the ecological insights are given equal prominence and can inform each other. Social ecologists reject the notion of 'antihumanism' and 'biocentrism', which put humanity against ecology. Instead, Bookchin argued that nearly "all ecological problems are social problems" (1989, p24) and that radically separating social evolution from natural evolution can only further alienate humanity from the natural world "in which it has always been rooted as a complex and thinking life-form" (Bookchin, 1989, p. 23). Social ecology is an approach to environmental ethics that "does not seek to destabilise anthropocentrism" (Andrew, 2000, p. 207). Social ecologists do not challenge the notion of environmental management; rather, it is the intention of environmental management that social ecologists seek to challenge. Environmental management is seen by social ecologists as a way to "exercise the powerful and privileged status humans enjoy in the natural community" (Schweitzer, 1935, cited in Nash, 1990, p. 61).

A summary of the differences between mainstream approaches and social ecology approaches to the environment is provided in Table 1. Briefly, social ecology explores the role humans can play in achieving long-term sustainability, where sustainability includes social, ecological and economic aspects. In other words, social ecologists challenge the existing mainstream dominant ideology of short-term, economic growth which is unsustainable and which has been achieved at the cost of nature (Geno, 1995; Andrew, 2000). As seen in Table 1, the anthropocentric view implicit in mainstream approaches is suspended by social ecology in favour of a non-hierarchical relationship between humans and the ecology. Therefore, social ecology considers human survival as

Table 1: Comparison of Mainstream and Social Ecology approaches to the environment (adapted from Andrew 2000).

Ethical premises	Main-stream	Social Ecology
Ontological foundation	Anthropo-centric	Non-hierarchical
Nature	Externality	Human's equal, essential to survival
Role of human	Maximise personal utility	Nature's guardian to protect inter-generational needs
Economy	Short-term focus	Long-term focus
Role of accounting in society	Integral to capital markets	To represent nature

being inextricably linked to nature's survival. This view challenges mainstream thinking about nature as being an externality. Consistent with mainstream views, the role of humans is to maximize their personal utility (Chua, 1986), and a short-term focus of the economy is inevitable (see Table 1).

According to mainstream approaches, the role of accounting in society is integral to the requirements of capital markets. By contrast, social ecology considers humans to be guardians of nature in order to protect the needs of future generations. Accordingly, the role of accounting is to facilitate and reflect this custodial function. The focus of social ecology of the economy must therefore be long-term.

4. ACCOUNTING FOR EMISSIONS RIGHTS AND SOCIAL ECOLOGY

4.1 Emission rights as assets

The reliance on market-mechanisms as providing an adequate response to GHG and their impact on climate change has raised implications for environmental accounting (Hopwood, 2009; MacKenzie, 2009). Accounting does play an important role in ecological crisis, however, whether or not accounting becomes part of the solution or part of the problem (Lohmann, 2009) depends on how accounting standard setters understand the 'nature' of emission rights. The IASB's withdrawal of IFRIC 3 "illustrates the problems faced by standard setters as they explore the frontiers of accounting" (Cook, 2009, p. 457). Based on mainstream accounting, standard setters have struggled to establish a workable standard. The suggested accounting treatment of emission rights, as an asset (IASB 2005), however, appears to maintain the 'business-as-usual' mindset rather than reflect any cognisance of the importance of environmental ethics.

In applying the environmental ethics of social ecology one can ask a new set of questions which were not possible of a mainstream paradigm. Consistent with mainstream approaches, emission rights are essentially pollution rights that an entity can trade to allow GHG to be emitted. The monetary benefits that an entity can generate from the sale of emission rights lead to the treatment of emissions rights as assets. However, a 'right' is problematic in a wider social and environmental context. Table 2 provides a

comparison between mainstream and social ecology approaches to emissions rights.

A mainstream approach would view emissions rights as assets to be controlled by the entity. The capacity to sell these in an ETS ascribes a ‘future economic benefit’ to the emission rights. Accordingly, the concept of having a *right* to emit carbon pollution is incongruous with social ecology. Clark (2001, p. 435) pointed out that the idea that humans can possess the right to pollute is unacceptable and “absurd from an ecological point of view”. Schweitzer suggested, the powerful and privileged status humans take for granted, does not entail “a right to exploit” but rather, “a responsibility to protect” (1935, cited in Nash, 1990, pp. 61-62).

Table 2: Comparison of mainstream approach and social ecology approach to emissions rights

Mainstream	Social Ecology
Control: exclusive controlled by an entity	Responsibility: humans maintain position as ‘environmental managers’; nature guardianship
Probable future economic benefits or sacrifice (short term)	Long-term intergenerational sustainability
Only measurable economic benefits (gained and lost)	Non-monetary social and ecological benefits
A result of past transaction	Co-existence prioritised

The earlier discussion of social ecology as an approach to environmental ethics argued that it is human responsibility to reduce GHG emissions. If a responsibility to reduce emissions is recognised from holding emission rights, would it not behave a reporting entity to recognise an environmental obligation? Hayward (2007) criticised ETS for focusing merely on the right to emit. He argued that in the debate over climate change, people tend to lose sight of the fact that carbon emissions reduction is

the responsibility of humans. Hayward (2007, p. 434) noted that

...patenting the monetary value of the rights may not only take precedence over any concern about the environment, but may also serve to distract policy-makers from pursuing viable alternative approaches to making the reduction.

The focus on accounting for emissions rights as assets has demonstrated the saliency of the profit imperative, rather than an effective action to reduce GHG emissions.

The intention of ETS is to ‘internalize’ pollution costs and ultimately alter business behaviour, that is “management strategy ... philosophies and practices” (Buhr, 2007 p. 67) However, accounting for emission rights as assets may not result in entities changing their behaviour if it is not ‘efficient’ for them to do so. Therefore, the quest to reduce GHG emissions to mitigate climate change may be mere rhetoric to enable corporate profits to be generated from ETS. The self-interest-profit-maximisation imperative upheld by mainstream approaches to climate change is evident in the following comments about ETS by Birley (2008) from the European Climate Exchange

...this scheme is allowing those who change early to make money...you put technology on top of your smokestacks that will stop the carbon from going into the atmosphere, you can profit from it.

Yet, a firm does not have to be reducing GHG emissions to be able to profit from an ETS. While emission rights are seen as having future economic benefits and fulfilling the definition of an asset, polluters could purchase emission rights and sell them later when the price has been driven up by the market. Therefore, recognising emission rights as assets could produce outcomes that undermine efforts to abate carbon pollution.

4.2 Emission rights as liabilities

If emission rights are not assets perhaps they should be recognised as liabilities. A

reporting entity could recognise a liability to fulfil an obligation to purchase rights in order to be able to emit. However, this would still signal a suspension of any environmental ethics in the accounting treatment of emission rights. Is it sufficient to recognise a financial monetary obligation to be able to pollute? Gibson (1996) suggests that it would be more effective to control the source of emissions, rather than charging for the emissions when they are already in the air, an “end-of-pipe approach” (Gibson 1996 p. 659). Unfortunately, recognising a liability still upholds the self-maximising mindset of mainstream approaches since the monetary obligation ‘entitles’ the firm to emit pollution.

A social ecology approach to emissions rights provides a challenge to the mainstream approach to emissions rights accounting (see Table 2). Emission rights whether viewed as assets or liabilities, fall within the property rights held by an entity and hence within their exclusive control. A social ecology approach suspends notions of control to adopt notions of responsibility by humans as environmental managers or guardians. Rather than emission rights providing future economic benefits or sacrifices, which emphasises the short-term, a social ecology approach emphasises the imperative of a long-term view of intergenerational sustainability. From a social and ecological perspective future benefits are non-monetary. A mainstream view relies on a capacity to measure reliably the economic benefits of emission rights as a result of past transactions. The ‘nature of emissions rights from a social ecology approach, renders measurement an inconsequential issue. It is the co-existence of humans and the environment which is significant.

5. CONCLUSION

Efforts explicitly to cost pollution by the construction of emission rights have not yielded acceptable results even to those seeking to benefit from an ETS. While the intention of introducing an ETS is naive at best, it still relies on self-interest-profit-

maximising mindsets to prevail, and this, we argue will be at the expense of the environment. Focusing on the accounting for emission rights, a construct of ETS, has not been resolved by the IASB so far. We have seen this challenge as a reason to pause and recognise that emissions rights is an unprecedented issue which traditional views of accounting are not well equipped to address. Further, we argue that the claimed objectives of ETS to abate GHG emissions cannot be met if anthropocentric views persist.

We have presented a social ecology view, an approach of environment ethics, which can offer insights into why accounting for emissions rights as assets or liabilities would undermine efforts to reduce GHG emissions. Emissions rights when characterised as either assets or liabilities, that is, seen as future economic benefits or sacrifices are still constructs within the control of entities participating in an ETS. Reduction of GHG emissions need not be achieved, since the incentive of an ETS is to make profits on trading. A social ecology approach is based on the long-term survival of humans and the environment. Seeking monetary benefits is viewed as short sighted. We have argued that the ‘nature’ of emission rights can best be understood in the light of social ecology which keeps the environment and human survival at the forefront. Social ecology, as an environmental ethic, enables us, and importantly, accounting standard setters, to provide a foundation for re-examining the ‘nature’ of emission rights.

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ENVIRONMENT EXTRA!

NUMBER OF COMPANIES WORLDWIDE REPORTING ON THEIR SUSTAINABILITY PERFORMANCE

New figures released show that the number of companies and other organizations publicly disclosing their performance against a range of key sustainability indicators has risen markedly over the last year. The Global Reporting Initiative is now aware of over 1000 organizations worldwide who issued sustainability reports based on the GRI G3 Guidelines in 2008 – the highest number ever recorded. The figure represents an increase of 46 per cent on the 2007 figure of 685.

The GRI G3 Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. The guidance was developed, and continues to evolve, through a process in which representatives from businesses, civil society, finance, labour, academia and others seek consensus on a common framework for reporting on issues of common concern - such as greenhouse gas emissions, labour standards and human rights.

Of the sustainability reports that GRI is aware of, more are produced in Spain than any other country, beating the United States into second place. Europe is home to 49% of the reporters known to GRI, followed by Asia on 15%, North America on 14%, Latin America on 12%, with 6% from Oceania and 4% from Africa.

However, with the exception of Germany's relatively small DAX (30 companies), companies in the major stock market indices reporting on their sustainability performance using the common framework provided by GRI are still in the minority

In terms of the numbers of reports GRI is aware of, the top ten countries are:

1. Spain	128
2. USA	100
3. Brazil	64
4 = Australia	56
4 = UK	56
6. Japan	49
7 = Germany	41
7 = South Africa	41
9. Italy	38
10. Canada	36

Many companies listed in the world's leading stock markets now issue GRI-based sustainability reports including 64% of Germany's DAX 30, 48% of France's CAC 40, 22% of the UK's FTSE 100 and 13% of the US' S&P 500.

“If sustainability data was just something that was ‘nice to know’ about a company - providing niche investors with data for short-term investment decisions or helping employees feel good about their company - then this wouldn't be so much of a problem. However this information is more important than that. As we face a sustainability crisis that could ultimately even threaten our very existence as a species, we need to know how our companies are positioned to rise to the challenges, provide solutions and adapt to coming changes,” said GRI Chief Executive Ernst Ligteringen.

“Thus public access to organizations' economic, environmental and social performance is necessary if we are to inform ourselves of the effects of the choices we make in the purchase of products and services and the effects of the business models we adopt,” added Ligteringen.

In order to further increase the quantity and quality of organizational sustainability

disclosure, the Board of Directors of the Global Reporting Initiative this year issued the Amsterdam Declaration on Transparency and Reporting in which they called on governments to introduce policy requiring companies to either report on their sustainability performance or explain why they won't.

Already in Sweden all state owned companies are now required to publish annual GRI-based sustainability reports and policy is in place, or in the process of being developed in Denmark, Norway, China and other countries to encourage the uptake of sustainability reporting.

Source: Global Reporting Initiative 15 July 2009 <http://www.globalreporting.org>

EMISSIONS TRADING

The Australian Accounting Standards Board (AASB) met on 29th and 30th July 2009 in Melbourne.

Two representatives from the Department of Finance and Deregulation presented their views on how a government would account for emission rights. It was noted that currently there is no guidance internationally and practice is mixed across Europe. In the interim, until guidance is issued, the government intends to treat the monies received on emission rights as prepaid tax revenue.

Source: Thirtieth edition of *Accounting & Assurance News Today* for 2009. Item 2. 31 July 2009

VICSUPER WINS TOP GONG AT SUSTAINABILITY REPORTING AWARDS

VicSuper has won the top prize for its green report at the Association of Chartered Certified Accountants' (ACCA) annual Sustainability Reporting Awards held yesterday in Sydney. The superfund capped off a stellar day out by receiving the top nod

for two other awards amid a field this year dominated by ASX50 listed companies.

The ACCA Sustainability Reporting Awards recognised organisational excellence in environmental, social and sustainability financial reporting and involved an independent judging panel, which included *Environmental Management News* finance columnist Francis Grey.

More than half of the ASX 50 companies entered this year's awards, triple the number in 2002. Of the 28 shortlisted companies, almost a third were from the energy and utilities sector.

Companies were judged on transparency in their reporting and how well they communicate their corporate performance with stakeholders. Judges also presented key recommendations to companies on sustainability reporting issues that covered policy disclosure, assurance framework and online accessibility.

VicSuper's award-winning report was lauded for providing a clear overview of key issues and its commitment to heed feedback from judges in previous years.

The Melbourne-based super fund defended last year's crown for Best SME Report to go with its top gong, Best Sustainability Report. It also clinched the Best Report in the Financial Service Sector award for the first time.

Australian organisations have bolstered efforts over recent years to address their corporate, social and environmental responsibilities, according to ACCA head Michaela Campbell.

"This year's awards show that sustainability is top-of-mind for Australian organisations," she said.

"The global economic downturn has highlighted a clear need for greater disclosure and quality of reporting, beyond compliance. It is important for Australian organisations to continue to improve reporting standards and levels of accountability with stakeholders.

Head of sustainability Jennifer Westacott from accounting firm KPMG, the award's major sponsor, said growth in the number of entries reflected a "growing interest in business strategies to tackle greenhouse emissions and sustainable business practices as a whole".

Last year's winner for the top award, BHP, claimed Best Report in the Materials Sector this year. Law firm Henry Davis York won awards for Best first-time report and Best report in the professional services sector.

Source: Environmental Management News
<http://www.environmentalmanagementnews.com> 5 August 2009

COMPLETED PHD – DR TAPAN SARKER

PHD COMPLETED – DR TAPAN K. SARKER JULY 2009.

Awarded by: the School of Accounting and Business Information Systems, The Australian National University.

Topic: An Empirical Examination of Factors Influencing Managers' Environmental Investment Decisions in the Australian Offshore Petroleum Industry

Summary: Environmental investment decision-making is an increasingly important topic in contemporary environmental psychology and business ethics literatures. In recent years, researchers, practitioners, and government policy-makers have shown increasing interest in understanding the individual environmental investment decision-making process, and particularly, the factors that influence the process.

Prior research has found that a firm's regulatory climate and information strategy are the two most important factors that influence individual environmental investment decision-making. However, the extent to which these two factors influence individual environmental investment decision-making and/or whether there is any interaction between these two factors that may influence the process is still unknown. This thesis had two primary aims in addressing this issue. The first aim was to examine whether a firm's regulatory climate and information strategy affect individual environmental investment decision-making. The second and associated aim was to examine the impact of any interaction effect of the two variables on individual environmental investment decision-making.

This thesis addresses these aims through an experiment. The experiment was a case study that manipulates a firm's regulatory climate (coercive government regulatory climate and voluntary industry self-regulatory climate) and information strategy (provision of voluntary environmental

information strategy and provision of conventional environmental information strategy) in a 2 x 2 between-subjects design. The participants were 95 professional managers employed in the Australian offshore petroleum industry. Three environmental investment decision situations were considered: (1) "Managers willingness to undertake environmental investment to avoid a firm's future environmental risks", (2) "Managers' willingness to undertake environmental investment in a firm's pollution prevention strategies", and (3) "Managers willingness to incorporate environmental considerations into a firm's new investment decisions". The decisions were measured using three 6-point scales from 1 "Strongly disagree" to 6 "Strongly agree".

The findings of the study showed that firms' regulatory climate has a significant influence on managers' environmental investment decisions. In particular, the findings revealed that regulatory influence has a significant influence on managers' willingness to make environmental investments in a company's ongoing pollution prevention strategies. The experimental case material included a between-subjects manipulation to examine the relative influence of the two regulatory climates on individual environmental investment decision-making. As expected, in all circumstances, the managers' were more willing to undertake environmental investments in a voluntary industry self-regulatory climate rather than in a coercive government regulatory climate. This is consistent with the findings of previous studies, which have suggested that regulatory pressures caused significant variability in a company's pollution prevention strategies that were adopted by business managers. Additionally, business managers acted more proactively to make environmentally friendly investment decisions in a voluntary industry self-

regulatory climate rather than in a coercive government regulatory climate.

In the information strategy manipulation, the study found that information strategy has a significant influence on managers' willingness to make environmental investment decisions. In particular, the findings showed that information strategy has a strong influence on managers to make investment decisions that avoid future environmental risks. The findings also showed that information strategy encouraged managers' willingness to incorporate environmental considerations into new investment decisions. The results provide important empirical evidence of the potential role that information strategy can play in a company's environmental investment decision-making and is consistent with the findings of previous studies. The experimental material included a between-subjects manipulation to examine the relative influence of the two types of information strategies on individual environmental investment decision-making. As expected, in all circumstances, the managers were found to be more willing to undertake environmental investments in a situation where the company had an existing voluntary environmental information and disclosure strategy rather than in a situation where the company had a conventional or no

environmental information and disclosure strategy. The results of the study did not reveal any significant interaction effect between the two variables on environmental investment decision-making.

In summary, the study examined the influence of a firm's regulatory climate and information strategy on environmental investment decision-making using a sample of managers from the Australian offshore petroleum industry. The findings of this study will be important to regulators and government policy-makers, business, industry organisations and policy analysts because it provides useful empirical evidence of the relative efficacy of stringent government regulation and voluntary industry self-regulation in influencing environmentally friendly investment decision-making. Furthermore, the study provides useful empirical evidence of the relative effectiveness of conventional and voluntary environmental information strategies that can encourage corporate managers to make environmentally friendly investment decisions. These issues are important in setting effective regulatory and environmental management policies that can motivate managers of business organisations to adopt "beyond compliance" practices that enhance corporate environmental performance.

CALL FOR PAPERS

THE 2010 NORTH AMERICAN CONGRESS ON SOCIAL AND ENVIRONMENTAL ACCOUNTING RESEARCH (2ND CSEAR SUMMER SCHOLL IN NORTH AMERICA) JANUARY 4-6, 2010 UNIVERSITY OF CENTRAL FLORIDA ORLANDO, FLORIDA, USA

This is an announcement and call for papers for the **2010 North American Congress on Social and Environmental Accounting Research** (2nd CSEAR Summer School in North America) being held January 4-6, 2010 at the University of Central Florida in sunny Orlando, Florida.

Similar to the CSEAR UK Summer School, the Congress will be a deliberately *informal* gathering of researchers, teachers, students and practitioners concerned with social and environmental accounting, teaching and research in the very widest sense. Limited to a maximum of 75 delegates, the emphasis is on a high level of interaction, discussion and debate in a *friendly, supportive and relaxed atmosphere*.

To inaugurate CSEAR in the United States, the plenary speaker will be **Professor Rob Gray**, Professor of Social and Environmental Accounting at the University of Saint Andrews, School of Management and Director of the Centre for Social and Environmental Accounting Research.

Registration

Registration information can be completed online through the conference website when available. Deadline for registration is **December 15, 2009**. The registration fee is \$350 and includes all meals during the conference and an evening reception.

Call for Papers

Both *full* and *research-in-progress* papers are welcome. The deadline to submit full/research-in-progress papers is **October**

15, 2009. Each submission will be sent for review by members of the scientific committee. Please email all submissions to **Mrs. Katherine Vazquez** at kvazquez@bus.ucf.edu

Contact

For further information, please do not hesitate to contact **Dr. Robin W. Roberts** at rroberts@bus.ucf.edu or **Mrs. Katherine Vazquez** at kvazquez@bus.ucf.edu

OTHER EXPECTED CONFERENCES

33rd European Accounting Association (EAA) Annual Congress - Istanbul, Turkey - 19th - 21st May 2010

<http://www.eaa-online.org/>

GIN2010 Conference: Climate Change and Green Growth: Innovating for Sustainability, June 13 - 16, 2010, Seoul, Korea.

<http://www.greeningofindustry.org/>

6th Asia Pacific Interdisciplinary Research in Accounting (APIRA) Conference - University of Sydney, Australia - 11th - 13th July, 2010.

APIRA 2010 Emerging Scholars' Colloquium - 10th July 2010. A Call for Papers has been issued and for early enquiries or requests for information email:

d.smith@econ.usyd.edu.au

<http://apira2010.econ.usyd.edu.au>

34th European Accounting Association (EAA) Annual Congress - Rome - Siena - April 2011

<http://www.eaa-online.org/>

2011 International Conference for Critical Accounting (ICCA), plus an Emerging Critical Scholars Workshop and an Accounting and the New Labor Process Symposium - Baruch College, New York - April 28th - 30th 2011.

