

**The Effects of Standardized Water Accounting: Evidence from the Water Accounting Standards in Australia**Hui Hu <sup>1</sup>, Yanyang Jiang <sup>2</sup>, Qian Jin <sup>3</sup>, Jesmin Islam <sup>4</sup><sup>1</sup> Economics and Management School, Wuhan University, Wuhan, Hubei 430072, P.R. China<sup>2</sup> College of Society, Central China Normal University, Wuhan, Hubei 430079, P.R. China<sup>3</sup> School of Tourism, Xi'an International Studies University, Xi'an, Shanxi, 710128, P.R. China<sup>4</sup> Faculty of Business, Government and Law, University of Canberra, ACT 2601, AustraliaE-mail: [jinqian@xisu.edu.cn](mailto:jinqian@xisu.edu.cn)

**Abstract:** The Water Accounting Standards Board was formed in 2009 to implement a sustainable water usage plan for Australia. The Board, which is the national water accounting standard setter of whole Australia, has made the definition of water accounting. The present study discusses the Australian government's decision to create the Board in terms of public interest and stakeholder theories. We also discuss whether the Water Accounting Standards Board is effective and how to make it more effective. It can be concluded that the theoretical perspectives of public interest theory and stakeholder theory are important in developing and encouraging the usage of a water reporting standard. In addition, the theoretical perspectives of public interest theory and legitimacy theory are also vital in determining effectiveness of the standard. Finally, the theoretical perspective of capture theory is critical in highlighting the threat of what would happen if the Board became controlled by the related businesses.

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**1. Introduction**

Australia is a nation which leads the world in the developing general purpose water accounting. In 2006, the Sinclair Knight Merz Stocktake (SKMS) report analysed Australia's existing water accounting practices and outlined the problems of the current water accounting standards. As a matter of fact, there was no water accounting standards a few decades ago. The only stakeholders being focused on were water managers and their direct customers and there was no regard for information given to external parties. These issues led to the Water Accounting Development Committee (WADC) being established in 2007. In late 2008, the WADC was placed under the guidance of the Australian Government Bureau of Meteorology (BOM), ultimately becoming the Water Accounting Standards Board (WASB). The WASB was formed in 2009 to implement a sustainable water usage plan for Australia.

The WASB, which is the national water accounting standard setter of the whole country, has responsibility for overseeing and coordinating water accounting standards development. According to a strict definition, water accounting is "a systematic process of identifying, recognizing, quantifying, reporting, and assuring information about water, the rights and other claims to that water, and the obligations against that water" (WASB, 2009).

The WASB is independent of the BOM and is in charge of overseeing the development of water

accounting standards. In 2009, the WASB developed its own conceptual framework for preparing water accounting reports, the General Purpose Water Accounting Reports (GPWARs). The GPWARs are designed to release information on water and the rights of watering (WASB, 2010). In the process of developing GPWARs, the WASB has applied financial accounting principles, concepts, methods and practices to record water quality and quantity instead of financial values (Chalmers et al., 2012). This has been culminated in the development of the Exposure Draft of Australian Water Standard 1 (ED AWAS 1) in 2010. ED AWAS 1 is currently a voluntary standard and its usage is only compulsory for the BOM until more feedback has been received on its effectiveness. The WASB hopes the GPWARs can be regularly adopted by the water industry by 2030. Further timeline information and updates on the standards for future reference can be found on the official website of the WASB (WASB, 2013).

In the following sections of this study, we discuss and try to explain the Australian Commonwealth Government's motivation and purpose to create the WASB in terms of public interest theory, stakeholder theories, etc. We will also discuss whether the governments and the public regard the WASB to be effective by reviewing public interest and legitimacy theories as well as briefly discussing some threats to the WASB mandate by analysing capture theory of regulation

implementation. It can be revealed that the variability of water volume and quality raises growing public concern in dozens of countries and it is especially important in Australia (Chalmers et al., 2012).

**2. The Regulation of Water Accounting**

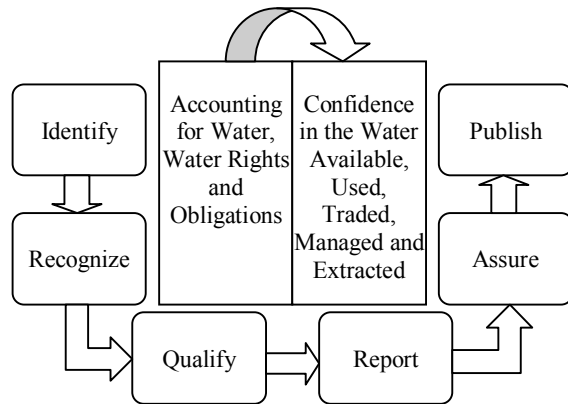
Australia’s particular water accounting has excited people’s interest globally. However, there has always been controversy among academics about the necessity of regulating water accounting. The regulation of accounting has become a major issue since the economic crash in late 1920s. One main reason is the information asymmetry, which usually creates an unequal distribution of information and could violate the objective use of the accounting information (Deegan, 2009). Therefore, an expert body that has the professional competence will be introduced to provide or supervise the provision of specific accounting information. According to Godfrey’s (2011) study, markets do not always operate for the best interests of society and it is uncertain that market power will operate by optimising the allocation of resources to promote the efficiency of society. This is where the public interest theory is applied.

Public interest theory states that regulation is initially put in place to benefit society as a whole but it is not for the vested interests of the regulators or primary stakeholders. Water is a kind of resource which all Australians, as well as people all over the world, depend on and its excessive consumption and depletion will have negative effects on everyone. When considering about the government’s decision to create the WASB, it can be seen that public interest theory most likely has a role here to play.

According to Vardon et al.’s (2007) study, standardized water accounting is an innovation originating in Australia to properly report the usage of water (Figure 1).

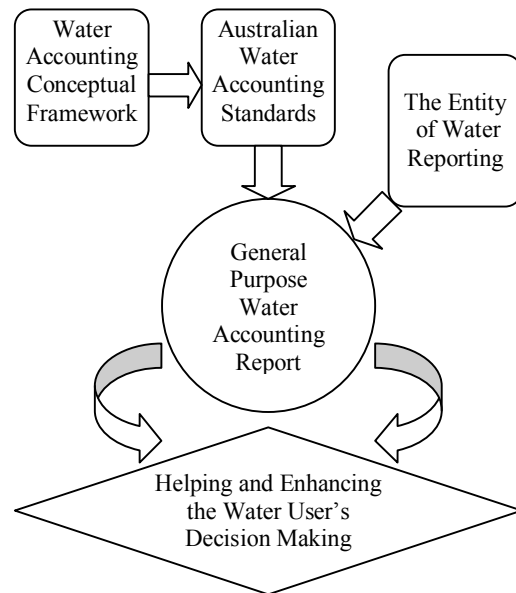
The GPWARs were proposed by the WASB and were created to be compliant with ED AWAS 1. The aim is to provide information to all potential users. It is user friendly, easy to understand and easily comparable to other reports which follow the same guidelines and rules.

The process of drafting the ED AWAS 1 was a highly collaborated one. It can then be seen that the standards were developed for the best interests of all involved parties. Up until the introduction of the first draft of standards, only those powerful stakeholders could receive their required information regarding various companies’ water consumption (Figure 2).



Source: Information Sheets, Publications, Australian Bureau of Meteorology <http://www.bom.gov.au/water/about/publications/index.shtml>

Figure 1. The Process of Water Accounting



Source: Information Sheets, Publications, Australian Bureau of Meteorology <http://www.bom.gov.au/water/about/publications/index.shtml>

Figure 2. The Process of Preparing General Purpose Water Accounting Report and the Relationship between the Report and Water User

This situation leads us to apply stakeholder theory, which is another theory related to sustainability reporting method and the WASB, specifically from the ethical perspective. Stakeholder theory holds that diverse groups of stakeholders exist in society and this theory explains how the expectations of those stakeholder groups are likely to influence corporate strategies. For this reason,

stakeholder theory has two branches: one is in the managerial perspective and the other one is in the ethical perspective.

Before the SKMS report was issued, the stakeholder theory in managerial perspective was applied to form the water accounting standards. This meant that only the primary stakeholders could receive the information they required and their expectations were the only things considered in the decision making process. Given that water is a scarce and valuable resource in Australia, interests of all stakeholders should be regarded vital and all decisions based on water usage should have an effect on everyone (Bell and Quiggan, 2008).

This kind of situation leads the ethical perspective of stakeholder theory to be applied in the revision of the WASB. The information, regarding the efficient usage of water by the BOM and other members in the water industry, need to be made with full disclosure. In order to gauge how effective the standard can be, more and more organisations need to adopt the ED AWAS 1. Deegan (2009) concluded that the full disclosure of any positive or negative information by an organisation can actually allow it to gain more support from the relevant stakeholders.

Sustainability reporting method has begun to be used in many areas of Australia since 1990s. According to Farneti and Guthrie's (2009) study, public sector organisations have begun to adopt a triple bottom line approach to do accounting. The main reason is that it allows them to disclose information to stakeholders, leading to an improvement in organisational performance (Collett, et al., 2001). Although the process has experienced slow adoption in the entire public sector, it has become more acceptable as the ethical method is used to issue reports. The same results may be applied to the standards set by the WASB. As application scope of the ED AWAS 1 expands, stakeholders would receive more information on the effective usage of resources.

A recent report on the sustainable usage of natural resources in Australia suggests that an organisation, or a department of government, will follow regulations to meet the standards of society (Qian and Burritt, 2009). If the organisation was non-compliant, legal action may be taken against the organisation. To encourage adoption of the ED WAS 1, punishments such as a whopping monetary fine or restrictive quota on water usage may be applied (Bureau of Meteorology, 2010).

The decision of the Australian Commonwealth Government to introduce the WASB can be explained in terms of the public interest theory as well as the stakeholder theory in ethical branch. Prior to the introduction of the first water accounting

standard in the world, only those stakeholders were considered to be 'powerful' for receiving information and influencing the decisions on distributing and using water, which is a kind of natural resource that is essential for people's survival (Gardner and Bowmer, 2007). Due to the impact that these decisions should be made regarding society as a whole, it is imperative that all involved parties are provided with information in relation to the consumption of such a scarce resource. The development of the WASB is helping to accomplish this goal (Connell et al., 2005).

### **3. The Effects of Water Accounting Standards Board**

Consequently, the present study discusses whether or not the WASB is likely to be effective. In order to do so, we review the system-oriented legitimacy theory as well as the public interest theory of regulation implementation. We also examine any threats which the WASB mandate may face through looking at the capture theory of regulation implementation.

Legitimacy theory asserts that organisations continually seek to ensure that they are perceived as operating within the bounds and norms of their respective societies (Deegan, 2009). It is widely acknowledged that organisations which do not operate within these evolving norms and do not provide information consistent with the adoption of these norms will be penalised by the society in which they operate.

Water can be seen by all members of society as a precious resource, especially in a dry climate such as Australia which currently still has the highest water usage per capita (Crane and O'Keefe, 2009). With resources dwindling and the growing need to account for the use of these precious resources, it is foreseeable that water accounting and the preparation and presentation of general purpose of water accounts, for those companies heavily reliant on the resource, may become part of general accounting practices as well as forming part of the information required by society. With this information, society will be able to determine whether a company or business is in fact operating within the 'social contract'.

Nowadays, the non-provision of information in economy is often seen as bad news and can severely impact the perceived legitimacy of an organisation. Due to this, it is likely that any organisation that falls under the requirement to account for their water usage activities will do so as it is in their best interest (DEWR, 2007).

Environmental issues are becoming increasingly important at the forefront of societies expectations. It can be consistently seen that those companies with poor environmental performance are

expected to repair or prevent any damage and pollution they may cause (Gardner and Bowmer, 2007). These companies may also find it increasingly difficult to obtain the financial support and resources which are necessary for them to continually operate. The general purpose of water accounting is to establish a system in which many water dependant companies will be able to paint a better environmental picture themselves.

Legitimacy is vital to an organisation's survival and, as such, management would pursue strategies which can be likely to increase the level of legitimacy. The provision of information and disclosures required by water accounting standards is a way in which management can increase perceived legitimacy and illustrate that it is acting responsibly for its usage of water resources. It must be admitted that this illustration can be symbolic or substantive. The introduction of water accounting and the preparation of GPWARs can be seen as a tool which an organisation can use to increase or maintain their perceived legitimacy within society. The table below (Table 1) shows what the General Purpose Water Accounting Reports are expected to comprise.

Table 1. The Key Parts of General Purpose Water Accounting Reports

1.	An Assurance Statement
2.	A Contextual Statement
3.	An Accountability Statement
4.	A Statement of Physical Water Flows
5.	A Statement of Water Assets and Water Liabilities
6.	A Statement of Changes in Water Assets and Water Liabilities

Source: 1. Water Accounting Factor Sheet, the Institute of Chartered Accountants in Australia

<http://www.charteredaccountants.com.au>

2. Water Regulations 2008, Water Accounting Standards Board

<http://www.bom.gov.au/water/regulations/index.shtml>

As stated above, public interest theory suggests that regulation is initially put in place to benefit society as a whole and not the vested interests of the regulators or other parties (Collett, et al., 2001). The development of ED AWAS 1 was a highly collaborated effort involving people with backgrounds in many disciplines such as public administration, chartered accounting, water management and standard setting. The process also involved excessive stakeholder consultation by considering both water and accounting organisations (Grafton and Peterson, 2007).

The current study would assume that this collaborative process will continue through the development of further water accounting standards

and it can hence be seen that this standard and those followed will have and be set with the best interests of all involved, including the public interest. As these regulations appear to be developed to benefit society as a whole, it is likely that they will gain more support than the situation when they aim to benefit the vested interests of organisations, governments or standard setters.

Although water accounting regulations may be initially set to protect the public interest, it is possible that those regulations will ultimately come to control the regulator. This is one of the potential threats to the efficiency of the WASB and is known as the 'capture theory'. The capture theory states that although regulation may be initially introduced to protect the interests of society, it is likely that ultimately this will not be fulfilled. Those being regulated will seek to gain control of the regulator because the decisions made will ultimately have marked impact on them and the industry in which they operate.

It may be difficult for the WASB to remain independent of those which it is regulating because the WASB's ultimate survival may depend on it satisfying the expectations of these organisations. This will result in the 'capture effect' of the Board and the regulated organisations would push the WASB to ensure that any further release can give them an advantage. If the Board were 'captured' by the regulated organisations, it would potentially be led to implement inefficient policies which protected the vested interests of the organisations but not the public. This would then result in the inefficient water allocation and utilization (McKay and Marsden, 2009).

In brief, this study suggests that the WASB and the Water Accounting Standards which are subsequently released would become more successful and efficient. Water Accounting is likely to be adopted by those have legal requirements to report and it can be used as a tool to increase perceived legitimacy by presenting good environmental information regarding organisations' water usage. The non-provision of this information would be seen by society as a bad behaviour which may result in little support for the entity and make it difficult for them to obtain the resources they need. The initial standards also seem to be introduced for the public's best interest which means it is more likely to gain public support.

#### 4. Conclusion and Discussion

In summary, water scarcity and consumption has become an increasing priority for a country with serious water shortage problem, like Australia. In order to manage this issue, it is essential to have the Water Accounting Standards Board to



implement a sustainable water usage plan for the country at the very beginning. The Board, which is the water accounting standard setter of whole Australia, established the framework of water accounting.

In the present study, we have described the Australian governance arrangements for water quality and quantity. We also have applied capture theory, legitimacy theory, public interest theory and stakeholder theory to analyse the development of the Water Accounting Standards Board and water accounting standard in this country. Although the focus of our study is national, the implications revealed are international. Moreover, we used a few theories to limit the scope of our study because they have been proved to be useful to explain the development of financial recording and reporting. Thus, further research can predict the trend of resetting water accounting standards.

To conclude, the theoretical perspectives of public interest theory and stakeholder theory, specifically the ethical branch from these two theories, are important in developing and implementing water reporting standards. The theoretical perspectives of public interest theory and legitimacy theory are also vital in determining how effective the standard will be towards the whole society. Last but not least, the theoretical perspective of capture theory is important in highlighting the threats which would be generated, if the Water Accounting Standards Board is controlled by high water consumption industries and enterprises.

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