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**ENVIRONMENTAL ACCOUNTING PRACTICES IN  
INDONESIA: CASE STUDY ON STATE OWNED  
ENTERPRISES**



**SARAH YULIARINI**

**Universiti Utara Malaysia**

**DOCTOR OF PHILOSOPHY  
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**ENVIRONMENTAL ACCOUNTING PRACTICES  
IN INDONESIA: CASE STUDY ON STATE OWNED  
ENTERPRISES**



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in Fulfillment of the Requirement for the Degree of Doctor of Philosophy**



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*(Signature)*

Tarikh: **7 Jun 2017**  
*(Date)*

Nama Pelajar  
(Name of Student) : **Sarah Yuliarini**

---

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Nama Penyelia/Penyelia-penyelia  
(Name of Supervisor/Supervisors) : **Prof. Dr. Ku Nor Izah Ku Ismail**

---



Tandatangan

Nama Penyelia/Penyelia-penyelia  
(Name of Supervisor/Supervisors) : **Dr. Zaleha Othman**

---



Tandatangan

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## Abstrak

Perakaunan alam sekitar (*EA*) di Indonesia kurang mempunyai data perakaunannya disebabkan ketidakcukupan piawaian perakaunan alam sekitar atau ia kurang memberi tumpuan kepada piawaian antarabangsa. Sorotan karya menunjukkan EA diperlukan oleh pihak berkepentingan luar dan pihak pengurusan dalaman untuk mengekalkan kestabilan perniagaan. Satu kajian kes kualitatif telah dijalankan untuk memahami keperluan pembaikan EA dari perspektif peraturan Indonesia, untuk memahami prosedur umum amalan perakaunan yang berkaitan dengan alam sekitar oleh syarikat-syarikat nasional, untuk mengesyorkan rangka kerja konseptual EA yang munasabah untuk Perusahaan Milik Negara (SOEs). Data telah dikumpulkan dari tujuh belas peserta melalui dua tetapan pengumpulan data; tetapan pertama adalah dari pengawal selia, dan tetapan kedua adalah dari dua syarikat, menggunakan tiga teknik pengumpulan data: wawancara, pemerhatian dan semakan dokumen yang kemudiannya ditriangulasi untuk tujuan analisis. Rangka konseptual yang wajar dicadangkan oleh kajian ini terdiri daripada enam kategori dari perspektif pengawal selia Indonesia, dan empat kategori dari perspektif pengurusan dalaman yang berkaitan dengan amalan EA. Kategori dari perspective pengawal selia yang seharusnya dilaksanakan secara integrasi, ialah: penggunaan piawaian organisasi, penguatkuasaan undang-undang alam sekitar, pengurusan sistem dan aktiviti organisasi, pelaporan, penilaian perakaunan alam sekitar, dan aspek kelestarian. Kategori dari perspektif pengurusan dalaman kedua-dua Perusahaan Milik Negara (SOEs) terdiri daripada: pertumbuhan dan kelestarian, pematuhan undang-undang peraturan, penambahbaikan operasi standard, dan peningkatan alam sekitar dan produk mesra. Dapatan menunjukkan bahawa amalan EA dipengaruhi oleh perspektif pengurusan dalaman, iaitu: struktur kos, pengukuran prestasi, dan pendedahan atau pelaporan. Kesimpulannya, hasil kajian ini menyumbang kepada pembuat dasar dalam menentukan peraturan dan prosedur pelaporan EA di Indonesia.

**Kata kunci:** perakaunan alam sekitar, perusahaan milik negara, penyelidikan kualitatif, kajian kes

## Abstract

Environmental accounting (EA) in Indonesia is lacking in its accounting data due to the insufficiency of its environment accounting standards or focus on international standards. Literature indicates that EA is needed by the external stakeholders and the internal management to maintain business stability. A qualitative case study was conducted to understand the EA treatment from the perspective of Indonesian regulations, to understand the general procedures of accounting practices associated with the environment by national companies, and to recommend a plausible conceptual EA framework for State-Owned Enterprises (SOEs). The data was gathered from seventeen participants in two settings of gathering data; the first setting was from regulators, and the second setting was from two companies, using three data collection techniques: interviews, observations, and document review which were later triangulated for analysis purpose. The plausible conceptual framework that was proposed by this study consisted of six categories from the Indonesian regulators' perspectives, and four categories from the internal management perspectives of the EA practices. The categories from regulators' perspective which should be set in an integrated manner, are: the use of organizational standards, the enforcement of environmental laws, the management of organization systems and activities, the reporting, the evaluation of environment accounting, and the sustainability aspects. The internal management's perspective of the two SOEs consisted of: growth and sustainability, compliance with regulatory laws, improvement of standard operations, and environmental improvement and friendly products. Findings showed that the EA practices were influenced by the internal management perspectives, which are: cost structure, performance measurement, and disclosure or reporting. In conclusion the findings of this study contribute to policy-makers in deciding the regulations and the procedures of EA reporting in Indonesia.

**Keywords:** environmental accounting, state-owned enterprises, qualitative research, case study



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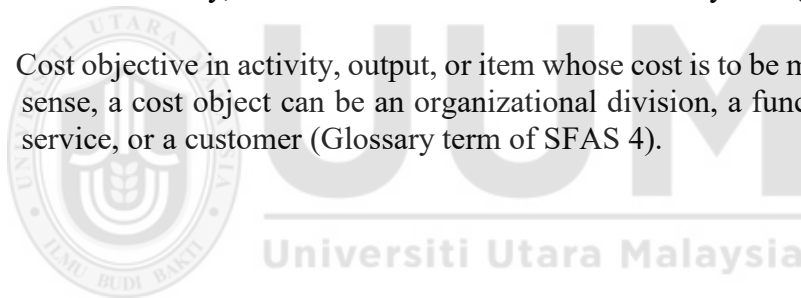
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## Glossary of Terms

1. Accounting is an area for creating account and transparency for an accountability matter (Catasus, 2008; Kang & Gray, 2011) or defined as an activity that provides information that is usually presented in a financial quantitative for decision-making, planning, resource control, operation, assess the achievements of the institution or company and financial reporting to investors, creditors and the relevant authorities in the monitoring or audit and provide reports to the public
2. Accounting discretion is tendency to avoid negative earning surprise (Bowen, Rajgopal & Venkatachalam, 2008).
3. Comparability information arises as to how information of financial accounting about similar transactions or events must be collected, transformed and presented to have the same contents (Krisement, 1997).
4. Contingent costs refer to environmental costs that are not certain to occur in the future but depend on uncertain future events (e.g., costs of remediating future spills). Sometimes referred to as "environmental liabilities," "liability costs," or "contingent liabilities." (Elijido-Ten, 2004; Firoz & Ansari, 2010).
5. Economic performance is the quantitative measurement the performance of company financially and market position which can be calculated using accounting based measures and capital market based measures (Earnhart & Lizal, 2010).
6. Environmental accounting is a term that relates to the inclusion of environmental costs into the accounting practices of the company or government agency (EPA, 2007).
7. Environmental costs are the impact both monetary and non-monetary as the result of activities that affect environmental quality.
8. Environmental definition the combination of all of physical and organic factors that act on a living being, residents, or ecological society and power, its endurance and growth to support economic system and human welfare (Barbier, 1989; Yusoff & Lehman, 2009).
9. Environmental disclosure is the disclosure of information relating to environment matters within the company financial statements regarding to environmental conservation activities by companies and other organizations, including public interest organizations and local public entities, provides information for stakeholders to understand, evaluate, and give their support to such efforts ( Jones & Solomon, 2013; Negash, 2012).

10. Environmental performance is the quantitative measurement the performance of the company in creating a better environment (green).
11. Financial statements is the quantitative and qualitative indication the company's actual situation and provide information about resources, claims to resources, and the changes that occur in it (Kieso, Weigandt & Warfield, 2007, p.1386).
12. Social accounting is related to the quality of life and welfare of human resources that consists of social report, value added statement and social balance sheet (Jobstl & Hogg, 2005; Mook & Quarter, 2006; Othman & Ameer, 2009).
13. Substance over form is one of accounting principle which recognize business transactions should be accounted in accordance with their (economic) substance instead of their (legal) form (Whittington, 2007).
14. Technical matters in accounting are presented to show how accounting can positively affect business performance.
15. Positive law is a natural law that gives rise to a set of accepted moral principles within a society, it focuses on action than normative system (Hart, 1958).
16. Cost objective in activity, output, or item whose cost is to be measured. In a broad sense, a cost object can be an organizational division, a function, task, product, service, or a customer (Glossary term of SFAS 4).



## List of Abbreviations

ABC/M	Activity-Based Costing and Management
AEI	Analysis on Environmental Impact
AMDAL	<i>Analisa Dampak Lingkungan</i> (see AEI)
ASEAN	Association of South East Asian Nations
BOD	Board of Directors
CDM	Clean Development Mechanism
CEO	Chief Executive Officer
CER1	Certified Environment Reduction
CER2	Corporate Environmental Report
CH4	Chemical compound methane
CIP	Community Investment Program
CO2	Carbon dioxide
CSI	Cement Sustainability Initiative
CSR	Corporation Social Responsibility
DRKPL	<i>Dokumen Ringkasan Kinerja Pengelolaan Lingkungan</i> (see CER2)
EcP	Economics Performance
EMA(1)	The Environmental Management Act (see PEMA)
EMA(2)	Environmental Management Accounting
EMS	Environmental Management System
EP	Environmental performance
ERPA	Emission Reduction Purchase Agreement
FSA-RI	Financial Services Authority of Republic Indonesia (see OJK)
GAAP	Generally Accepted Accounting Principles (see PSAK)
GCG	Good Corporate Governance
GMP	Good Manufacturer Process
GMS	General Meeting of Shareholders
GRI	Global Report Initiative
IAS	International Accounting Standard
IFRS	International Financial Reporting Standards
IPAL	<i>Instalasi Pengolahan Air Limbah</i> (wastewater treatment plan)
IPO	Initial Public Offering
IUCN	International Union for Conservation of Nature
K3	<i>Kesehatan dan Keselamatan Kerja</i> (Health and Safety Works)
KLHK	<i>Kementrian Lingkungan Hidup</i> (Ministry of Environment)
LLC	Limited Liabilities Company (see PT)
MtCO2e	Million metric tons of carbon dioxide equivalent
NGO	Non- Governmental Organisation
NO2	Nitrogen dioxide
OJK	Otoritas Jasa Keuangan (Financial Service Authority)
P/L Report	Profit/Loss Report or Comprehensive Income Report
PEMA	The Protection of Environmental Management Acts (Number 32 Year 2009)

PROPER	<i>Program Penilaian Peringkat Kinerja Perusahaan</i> (Program Performance Rating)
PSAK	<i>Pernyataan Standard Akuntansi Keuangan</i> or Statement (see GAAP)
PT	Perseroan Terbatas (Limited Liabilities Company see LLC)
SEA	Swedish Energy Agreement
SOE	State-Owned Enterprises
UNFCCC	United Nations Framework Convention on Climate Change
UNCTAD	United Nations Conference on Trade and Development
WBCSD	World Business Council Sustainable Development
WHO	World Health Organisation
WRI	World Research Institute



# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

This chapter explains the background of the study by highlighting its objectives, the problem statement, the scope and significance of the study. In a broad sense, this chapter explains the reasons for and importance of understanding environmental accounting (EA) practices by state-owned enterprises, especially in the Indonesian context.

### 1.2 Background of the Study

There are many tragic industrial environmental-disasters that are still fresh in our memory. These tragic events have claimed huge loss of life and property. One of this is the explosion of the drilling pipe of British Petroleum (BP) at the Deep-Water Horizon on 22 April 2010. This resulted in 11 counts of manslaughter and USD4.525 billions fines coupled with other payments by BP. After this event, BP had to make other enormous payouts to thousands of fisherman and businesses, and was banned from seeking new contracts with the US government because of the company's oblivious business integrity during the disaster (<http://castonline.ilstu.edu>, 2011).

Furthermore, on 26 May 2006 the Sidoarjo (Indonesia) mud-flow began to erupt that destroyed 13 villages, dozens of factories and shops and a highway. The most likely cause according to a majority of experts was the gas exploration well by PT-Lapindo Brantas. The experts suggested that disaster will occur up to 20 to 25 years. Up to

2013, it caused corporation to provide compensation of USD 79 million in costs associated with the disaster (<http://huffingtonpost.com>, 2013).

Significantly, the impact on the environment is tremendous; the ecosystem becomes imbalanced and it causes economic loss (Cho, 2007; Siregar & Bachtiar, 2010). Business operations tend to ignore the negative impact on the environment, such as air pollution, water pollution, soil degradation, noise pollution, and so forth (Wong, 2012). In Indonesia, the intense efforts to increase sales targets by lowering costs to face global business competition have made companies focus on profits and neglect external requirements, especially these related to the environment (Dewi, Irianto, & Sukoharsono, 2011). Evidence of this imbalance and economic loss to Indonesia can be deduced from the International Disaster Database in 2009 report that Indonesia's economic losses were aggravated by the 10 biggest disasters that occurred between the 1998-2007 period.

The loss is about USD 26 billion and contributed to approximately 70% of climate-related disasters from greenhouse emissions. This made Indonesia the third largest producer of greenhouse emission after the United States (US) and China in 2011 (Gumilang, Mukhopadhyay & Thomassin, 2011). Indonesia emits about 3,014 million tons of carbon dioxide or million metric tons of carbon dioxide equivalent (MtCO<sub>2</sub>e), which may continue to increase. Gumilang, Mukhopadhyay and Thomassin (2011) further stressed that by the year 2022, the emission of carbon dioxide (CO<sub>2</sub>) and nitrogen dioxide (NO<sub>2</sub>) will increase to 731% and 664%, respectively, which is more than double the rates of output growth (263%); while chemical compound methane (CH<sub>4</sub>) emission will grow by 497%. If Indonesia does not take preventive actions now,

the amount of economic loss it will incur in 10 years to come due to climate-related disasters from greenhouse emissions will be unimaginable. For example in 2015, emissions of greenhouse gases from fires in dry season, on the Indonesian island of Sumatra and on the Indonesian side of Borneo Island destroyed more than 10,000 square miles of forests, blanketed large parts of Southeast Asia in a toxic haze for weeks, sickened hundreds of thousands of people and caused as much as USD 30 billion in economic losses in Indonesia. In addition, Cagatay and Mihci (2006) conveyed that the limit to growth (LtG) of the economy is caused by environmental degradation. The environment provides all primary inputs for economic activities, especially for manufacturing, but it is limited to availability. The cases above show the impact of the permissive action on environmental policy-making or environmental governance related aspect (Esty, 1999; McCarthy & Zen, 2010; Berger, 2010, p.37). Environmental impacts arise from the business behaviour towards different environmental conditions. There is a need of legitimate forces to regulate and protect the environment.

Environmental regulations have been legislated in many countries (Barbu, Dumontier, Feleagă, & Feleagă, 2011; Firoz & Ansari, 2010), such as the accounting regulations by the Environmental Protection Agency (EPA) or USEPA founded in 1970 in the US. This agency provides very strict standards for companies on environmental protection and imposes higher penalties for companies that do not apply it. Despite this, environmental disasters still occur, such as the Deep-Water Horizon tragedy. One could not imagine that this could happen to a British oil company since Britain is one of the European countries that have provided disclosure guidelines on environmental reporting for listed and non-listed companies (Barbu et al., 2011). Therefore, this

prompts the question of inadequate provision of EA guidelines to curb environmental damage, which still happens in business operations today (Bewley, 2005).

According to Agenda 21 of the Rio Summit on Environment and Development organized by the United Nations in 1992, natural disasters cause loss of life, disruption of economic activities and urban productivity, particularly for highly susceptible low-income groups. In addition, natural disasters cause environmental damage, such as loss of fertile agricultural land and contamination of water resources, which lead to major resettlement of the affected population. Over the past two decades, the disasters have been estimated to have caused over three million deaths and affected 800 million people. The Office of the United Nations Disaster Relief Coordinator Global economic losses released the estimation of economic loss to be in the range of USD30-50 billion per year” (p. 57).

Three clearly based on the Agenda 21 of the Rio Summit stated that activities were agreed upon to solve these issues, which include the development of a "culture of safety", pre-disaster planning and post-disaster reconstruction (1992, p. 59). One of the activities to promote a “culture of safety” in countries that are disaster prone is to develop and enforce strict environmental control standards. In addition, Spreckley (1981) stated that if the 3P concept (i.e., planet, people and profit) is implemented by the industries, it would result in a balanced condition in the true sense for the continuity of businesses in the future. Business activities are not only linked to the conservation of environmental factors (planet) but also to the protection of the human race (people); it can lead to businesses that can survive for profit on a variety of conditions and prosper in the long-term (Beck, Campbell, & Shrives, 2010; Machado



et al., 2011). Awareness of protecting the environment is the responsibility of all parties, including companies, the government, academics and the community (Fleischman & Schuele, 2006; Negash, 2012; Yakhou & Dorweiler, 2004). Each party must contribute, based on their preferences for the environment (Yakhou & Dorweiler, 2004).

Furthermore, the financial accounting system must encompass environmental impact and awareness and this has been undertaken since the 1960s, when, Freidman (1970), a free market advocate, stressed that any goal of a business different from the maximization of profit, is a subversive doctrine. It is stated that there is one and only one social responsibility of any business, which is to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game. This implies engaging in open and free competition, without deception or fraud. The Freidman's advocate leads to state-owned enterprises (SOEs) roles which have social function besides of profit function (revisited from Law of Republic Indonesia No.19 Year 2003). Social function or social responsibility places SOE's legally as tools of the state to maintain social and economic stability as well. The definition of the state as the company owner and government regulators is difficult to be separated and attached to the SOE itself. Therefore, the state-owned enterprises have an obligation to support government on business-related policies, including environmental policy in business.

This view has led to current economic policies based on deregulation and free trade, as well as environmental accountability in the Association of Southeast Asian Nations (ASEAN), which includes Indonesia (Saudagaran & Diga, 1998). Although the

ASEAN governments seem to realize that environmental protection is important, but over-exploiting irreplaceable natural resources for profitable purposes as well as pollution still remain generally unchecked (Saudagaran & Diga, 1998). MacIntyre (2007) criticized about inadequate resources and resistance from influential people with vested interests often hamper the efficiency of state agencies. Government agencies, as well as private organizations, would be more likely to comply with regulations if they are made to mandatorily disclose their environmental impact (Burritt, Saudagaran & Diga, 1998). It could also assist in encouraging responsible actions by firm managers with regard to environmental matters. Even though enforcement may perhaps initially be difficult, mandatory disclosure is beneficial because it serves an educative role and can raise awareness on environmental accountability of irresponsible firms operating in the country (Saudagaran & Diga, 1998).

Keuning (1998) and Laughlin (1999) viewed the environment according to the determinism theory. They stressed that environmental factors and accounting systems are closely related in terms of multi-dimensionality of social life. Some other studies have stressed that environmental factors relate to and influence some systems, such as the legal, capital providers and tax systems (Jöbstl & Hogg, 2005); political system (Beyer, Cohen, Lys, & Walther, 2010; Markandya & Tambora, 2005); accounting profession system (Fleischman & Schuele, 2006); financial and capital market system (Elijido-Ten, Kloot & Clarkson, 2010); and the standards system (Bewley, 2005; Elsayed & Hoque, 2010). The influences come from external which incorporate in system, hence stakeholder and legitimacy theories are still relevance to provide explanation of this study.

When the need for the world to focus on caring for the environment arises, the accounting system has to adapt and be ready to face the various problems that arise as a consequence of industrial processes. This has prompted the emergence of the term, 'green accounting' or 'biodiversity accounting' (Clarkson, Overell, & Chapple, 2011; Jones, 2003b) or 'environmental accounting' (EA) (Husser et al., 2012). According to Kieso, Weigandt and Warfield (2007, p.1386), financial statements should indicate the company's actual situation and provide information about resources, claims to resources and the changes that occur in it. The disclosure of EA regarding environmental conservation activities by companies and other organizations, including public interest organizations and local public entities, can provide information for stakeholders to understand, evaluate and support such efforts (Jones & Solomon, 2013; Negash, 2012).

The practice of EA could be an important marketing tool because it communicates with external parties about a company's environmental activities ((Benoit-moreau, 2011; Pickett-Baker & Ozaki, 2008). It also helps a company to establish a satisfactory environmental image and create competitive advantage (Beck et al., 2010; Raska & Shaw, 2012). EA refers not only to accounting but also to sustainable development (Farouk, Cherian, & Jacob, 2012; Husser, Irigoien, Andre et al., 2012). Sustainable development has become an essential condition for enterprises to participate in the market and realize their self-value.

Since EA is based on information disclosure and is necessary for adapting to society, there is then a need to strengthen its existence and development. This is stressed by

Lange (2003), in his conclusion that having a lot of EA activities is a useful economic tool.

Another significant contribution of EA is its link to ISO 14000 (Fleischman & Schuele, 2006; Yakhou & Dorweiler, 2004). The environmental data in an environmental management system (EMS) based on ISO 14000 standards is consistent with environmental cost accounting. Horton, Serafeim and Serafeim (2011) stated that the ISO 14000 standards have to be reviewed based on the objectives and implementation process, especially of EA. The implementation process is interrelated to developments in EA that varies among companies and organizations (Gray, 2000). Companies and organizations pay more attention to disclosure of information in their financial statements so that the EA data that is published will have the highest degree of compliance as possible with the requirements and standards of the International Financial Reporting Standards (IFRS) (Byard, Li & Yu, 2011). Moreover, the IFRS intent to ensure that the information disclosed takes into consideration the needs of the various stakeholders (Negash, 2012).

The practice of environmental and social responsibility disclosure in annual financial statements is still voluntary in Indonesia (Almilia & Wijayanto, 2007; Ariesanti, 2012). The Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*), No.1 paragraph 9 states, “The company can also provide additional statements, such as statements about the environment and value-added report (value-added statement), especially for industries where environmental factors are essential and the industries where employees are reported

as a group of users” (p. 2). Here, the value-added statement is related to other information that not stipulated in PSAK clauses.

Indonesia has a fundamental Constitution Law Article 33. Paragraph 3 of the article stated that the earth, water and natural resources contained therein are controlled by the state and utilized for the welfare of the people. The law of the environment was regulated through a special assembly (the highest governing body in Indonesia) of the *Majelis Permusyawaratan Rakyat* (MPR) in November 1998, which specifically passed a TAP (*Ketetapan* or Decree), i.e., the MPR XV for the Structuring of Regional Autonomy (Managing and Delegating the Fair Use of Natural Resources and Promoting Equitable Allocation of Finances between National and Regional Authorities). The Article 5 of this TAP MPR states that regional governments should be responsible for sustainable environmental management (“Himpunan Beranotasi *Ketetapan MPR-RI 1960-2001*”, tatanusa.co.id, 2000). Article 5 also directs government agencies to look beyond their interests and coordinate the management of natural resources. For more action, the issuance of the Law of the Republic of Indonesia on the Protection of Environmental Management Act (PEMA) No.32 Year 2009 establishes the application of minimum criminal penalty in addition to the maximum penalty. It is enough to give legitimacy to the business and professional accountants in Indonesia to implement EA (see notes about legitimacy theory in Eljido-Ten, 2004; Gray, Javad, Power & Sinclair, 2001).

Thus, this study tries to understand the association between accounting regulation and policy on the environment, and EA practices by SOEs in Indonesia. There is a need to understand the phenomenon on EA practices, which who was also supported by

Suaryana (2011) and Wiyantoro et al. (2011) who revealed that there is a need to gain more understanding about EA practices by companies in Indonesia. Also, there is no standardized way of presenting EA in Indonesia, that is by way of a reporting or as a component of the annual report; in addition, Brown and Fraser (2006), and Bicalho, Richard and Bessou (2012) suggested that the most important issue in the existing accounting systems is the disclosure of environmental data.

### **1.2.1 Country Background for Research**

Indonesia is one of the Southeast Asian countries that lies among South China Sea, Indian Ocean, and Pacific Ocean. This geographical factor has created a highly diverse environment and society (cultures, and languages). Indonesia has a vulnerability to seismic and volcanic activities due to a close proximity to the sea, a tropical and moist climate. Indonesia has got the biggest Muslim population in the world which is up to 250 millions (2015). However, in some islands, such as West Papua, Nusa Tenggara Timur, and Bali, majority are non-muslim.

The Indonesian government manages its economy by using classification based on land uses' characteristic treatment disaggregated by region and by industry (Warr & Yusuf, 2011). It is to make easier for the government to manage its legitimate politics, administration, and SOEs. Meanwhile, data from Ministry of SOE in 2015 reflected that there are 85 SOEs around Indonesia regions. State owned enterprises contribute 40% to Indonesia' gross domestic product (GDP) (Ministry of Trading Report 2015, p. 48). Moreover, Utama (2011) points to SOEs' performance be higher than other kinds of company related to environmental disclosure practices. It is supported by Warno and Farida (2016). They reveal that type of company (Limited Liability

Company/ P.T) has a link with implementation of environmental accounting, even they do not reveal how the implementation of EA has to be done. Thus, this research is focus on EA practices by selected SOEs to gain understanding about EA practices.

### **1.3 Problem Statement**

A global issue on EA can be classified into two categories: lack of accounting data (Bicalho, Richard & Bessou, 2012; McCarty & Zen, 2010); non-disclosure and unavailability of EA standards (Bicalho et al., 2012; Burritt & Schaltegger, 2012; Catusus, 2008). Both issues still exist because there have been few attempts to assess the extent and technicality of EA practices being used by organizations worldwide (Jones & Solomon, 2013). Globally, lack of accounting data can be summarized as: 1) lack of fairly balanced information disclosure and positive achievements regarding the company's environmental (EP), social and economic performance (EcP); 2) lack of quantitative information; and 3) lack of information about corporate strategy to provide an analysis of corporate sustainability risks and opportunities. Indonesia has similar issues on the lack of accounting data of EA. Suaryana (2011) revealed that financial management in Indonesia has a lack of technical understanding about 1) disclosing of environmental information in financial statements; 2) cost and benefit of environmental information framework as part of reporting effort is imbalance contribution for company; 3) recognizing contingent liabilities; and 4) identifying environmental costs.

The unavailability of EA standards has been reaffirmed by investigation conducted in previous studies on EA (Brown & Fraser, 2006; Burritt, 2012; Jerrett, Rey, Dufournaud, & Jones, 2003; Jorgensen & Soderstrom, 2006). The findings from the

preliminary study conducted by the author (stated in Section 3.4.1) indicate that absence of EA standards in Indonesia's Generally Accepted Accounting Principles (GAAP) is apparent. The preliminary findings revealed that Indonesia needs local EA standard ascertained by the Manager of Technical Standards and Accounting of Ikatan Akuntan Indonesia (IAI, also known as Institute of Indonesia Chartered Accountants), she stated, "Since Indonesia is a member of the G-20, we should follow one of the agreements to conduct IFRS convergence program into the local standard. We have to cooperate with the regulator to set the standard" (Jenny, personal communication, January 4, 2013). It was further stated that in the absence of EA standards in Indonesian IFRS, "We are still going to work on the preparation of converging IFRS to local standards. Our focus is still on the key principles in IFRS, about technical standards of EA; Ikatan Akuntan Indonesia (IAI) cannot conduct it yet" (Jenny, personal communication, January 4, 2013).

Due to the obvious fact that there are no EA standards in Indonesian GAAP, there is a need for the Institute of Indonesia Chartered Accountants (IAI), as an accounting standard-setter, to cooperate with the government to formulate accountable and reliable standards in the Indonesian GAAP context for effective and efficient protection of the environment (Coxhead & Jayasuriya, 2010; McCarthy, 2000).

The issue of unavailability of EA data arises since the implementation of EA in Indonesia is a voluntary practice. This means EA has not been enacted as part of accounting standards, but rather as a contingent or temporary subsequent standard. According to Hail, Leuz and Wysocki (2009), companies with EA matters provide necessary information to their shareholders and other outside parties through various



other channels, rather than through formal accounting information disclosure channels. This shows that the way of reporting and disclosing EA is based on firms' practices rather than any required standards and principles (Hail et al., 2009).

Specifically, Jones and Solomon (2013) found that many companies are facing difficulties in recognizing the environment as an asset. Although historical cost is the most common valuation basis for tangible assets, a variety of proxies for fair value are used, such as net present value, independent/external valuation, net realizable value and market price, both within and across countries; but all proxies have not reconciled environmental goals with sound business decisions to achieve greater eco-efficiency (Barbu et al., 2011, p.14; Jones & Solomon, 2013). Thus, the above arguments stress on the importance of EA at the company level.

Regarding to EA practice, Ditz, Ranganathan, and Banks (1995) stated that EA could be referred to as a sub-term of financial accounting if there is an explicit standard to guide the practices; while Jobstl and Hogg (2005) refers to EA as a part of management accounting. In fact, several scholars have also made a claim in relation to Jobstl and Hogg's (2005) opinion. Beyer et al. (2010), for instance, recommended that future studies on EA should focus on the technical aspects of EA, such as developing measures of performance (Berger, 2011; Burrit, Schaltegger & Zvezdov, 2011); benchmark techniques on environmental-related issues (Brown & Fraser, 2006); and through accounting best practices in this area (Bragg, 2004; Bewley, 2005; Jones & Solomon, 2013). Also, Boyd (1998, p.21) emphasized poor EA data and procedures that are closely linked to poor accounting techniques.

There is also a claim that the EA performance measures can be used to evaluate economic performance (Beyer et al., 2010), which is due to the questionable present EA practices of measurement that do not relate to environmental aspects (Ariesanti, 2012). Consequently, the uncertainties related to measures of both environmental performance (EP) and environmental disclosure (ED) have an effect on economic performance (EcP) measures and practices (Earnhart, 2010; Jones & Solomon, 2013). Bragg (2004, p.16) also confirmed that the present accounting standards do not provide technical details for practitioners; hence, it is necessary to take a decision on best practices in the implementation of EA. In doing so, Bragg (2004, p.270) suggested that there is a need for an accounting procedure that will define the precise activities that take place within the boundaries of the policies created, and which is related to EA.

Based on the discussions on the general issues of EA, which include putting it into practice in Indonesia, there is a need to understand EA based on its measures of performance, ways of recording and reporting (Suhardjanto & Miranti, 2008; Suaryana, 2011; Afdal, 2012) that are applicable and plausible for practitioners. Utama (2011) examined the practice of reporting on corporate social responsibility (CSR) in Indonesia and found that general public (P.T-Tbk) SOEs' disclosure related to CSR is 15.5% higher than other types of SOEs. This is what makes SOEs (type of P.T) a real example of the behavior of corporate governance mechanisms and specific policies related to EA for other types of companies in Indonesia.

#### **1.4 Research Questions**

Based on the arguments and the gaps addressed above, the general research question for this study is: What and how are EA practices being accounted for? Through this, the study proposes to ask the following specific questions:

1. What are the regulated EA treatments in Indonesia?
2. How do state-owned enterprises (SOEs) apply EA in Indonesia?
3. What is the plausible conceptual framework of EA practices for SOE?

#### **1.5 Research Objectives**

As a result of the research questions, the objectives of this study are:

1. To understand the EA treatment from Indonesian regulators' perspective
2. To understand the practices of environmental accounting by selected Indonesia state-owned enterprises (SOE).
3. To recommend a plausible conceptual EA framework for SOEs.

#### **1.6 Scope of the Study**

The scope of this study is based on reviewing IFRS and Indonesian GAAP policies on EA practices in two state-owned enterprises (limited-liability company/P.T types). This is executed through a technical review of a complete and detailed EA system. A highly technical and expensive EA system can compliment the financial accounting system based on the decision of the organization. On the other hand, no technical EA system can easily be influenced by the decision of the accountants, bureaucratic political system and changes in accounting policies by the organization.

This case study method is based on a review of process and environmental information gathered through on-site interviews with two companies and three regulatory agencies. It is explored to each of the companies that has its own special characteristics, and the collective findings afford fresh insights into EA practices of state-owned enterprises. From the practical perspective, this research shares the experience of two state-owned enterprises (SOEs) who have implemented some elements of EA.

### **1.7 Significance of the Study**

Based on the research objectives, three main significances emerge. Firstly, with regard to the accounting profession, the IFRS have to be fully adopted by the Institute of Indonesia Chartered Accountants (IAI), followed by the corporations that went public at the end of 2012. By doing this, the EA valuation, its measurement, and ways of reporting will be regarded as principles rather than rules. Many accounting standards pertaining to some particular industries were deleted on 1 January 2013, like forestry accounting standards, mining accounting standards and accounting standards for non-profit institutions, and they were to be replaced by the additional disclosure statement (the Sustainability Report). It is expected that the findings from the case study can strengthen the role of accountants in setting and implementing financial reporting standards in accordance with Institute of Indonesia Chartered Accountants (IAI)'s direction for a common standard for financial regulations. Thus, this research contributes to the accounting professionals in improving their understanding of the importance of EA as part of recognized accounting standards.

Secondly, in relation to EA standards and its disclosure, this research reviews and develops environmental requirements that are in adherence to voluntary disclosure in

Indonesia, which can support the environmental policy-makers (i.e., the government) in the area of environmental governance.

Thirdly, from the academic perspective, there have been slow responses to the issues of EA in the world of financial reporting research due to different standards followed by different countries (Bart et al., 2008; Cabrera, 2008; Hofstede, 2009). As such, this research seeks to contribute to the few studies on EA in Indonesia on EA practices.

Lastly, it is very useful for the business environment. As stated by Bewley (2008), investors use environmental disclosure to differentiate one company from another and gain a signal on financial information of a company's future standing. Thus, this research captures the need for EA in a financial accounting system and helps corporations to adapt to the best practices of EA. It can enable investors to differentiate between companies who promote and adhere to the sustainability of their environment and those who ignore it.

### **1.8 Organization of the Thesis**

This thesis attempts to show: what are the regulated EA treatments in Indonesia by examining the EA treatment from Indonesian regulators' perspective; how do SOE companies apply EA in Indonesia by examining the practices of environmental accounting at Indonesian state-owned enterprises (SOE); and what is the plausible conceptual framework of EA practices for SOE; accordingly, the organization of this thesis is as follows.

Chapter 1 introduces importance of exploring environmental accounting (EA) practices by state-owned enterprises, especially in the Indonesian context. Researcher

first described the background of study, as well as provided a breakdown view on why EA practices by SOEs are important in Indonesia. Then researcher listed out the problems of the environmental disclosure together with their associated environmental costs. The last section in Chapter 1 focused on scope and significance of study to limitation of research in order to get the necessary implications.

Chapter 2 provides literatures to support what is the phenomenon and gets the support of the theory to explain who are related to the phenomenon. The last part of Chapter 2, through conceptual framework as protocol research, researcher spotted out the problems and analyzed the literature.

In Chapter 3, researcher extended the study from literatures to a way of thinking and towards methodology. Researcher planned the research method as qualitative-case study. Firstly, researcher focused on the perception of regulators on EA practices to understand the EA treatment from Indonesian regulators' perspective. Secondly, researcher focused on internal management perceptions, and observed EA practices of state-owned enterprises (SOE), thus, enabling the researcher to be able to recommend a plausible conceptual EA framework for SOEs. Researcher conducted case studies on two different SOEs, and tried to gain an understanding of various aspects of EA practices.

Chapter 4 and 5 highlight analysis, results and reliability of research based on recent theory. Researcher focused on answering three (3) research questions. In Chapter 5, researcher discusses the findings and theory, basically with purpose of making sense of findings.

In Chapter 6, the study offers future work or research, suggestions, and shows that there are limitations of this research. Again, by making a plausible conceptual framework of EA practices, researcher has designed a proactive study on EA practices in level of SOEs in Indonesia.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter provides an overview of the research on EA and its practices. The purpose is to highlight the key research issues. It also introduces the conceptual framework of EA practice that is the focus of this thesis.

#### **2.2 Environmental Issues in Business**

The word, 'environment' is a very meaningful word (Yusoff & Lehman, 2009). The simple definition of environment is 'surrounding' (Guo, Ai & Polenske, 2008). It is what surrounds something. The environment is the combination of all of the physical and organic factors that act on a living being, residents or ecological society and power (Yusoff & Lehman, 2009); and its endurance and growth to support the economic system and human welfare (Barbier, 1989). Other researchers have named it biodiversity-related (Cho, 2007; Jones, 2003a) or green accounting (Farouk, Cherian & Jacob, 2012; Mook & Quarter, 2006). Further on biodiversity-related aspects as explained by Jones (2003), it motivated and encouraged greater focus on natural assets. Using case study method is considered useful for ascertaining the feasibility and benefits of environmental models in the UK which has a standard for counting the physical biodiversity, named Biodiversity Action Plan. Jones (2003) found that a critical number of flora and fauna species average around the plant sites. In another research involving biodiversity term revealed by Cho (2007), a case study was conducted on a multinational oil company in France, and it was found that preserving biodiversity in part of company strategy to maintain business continuity. As such,



business continuity in the aforesaid context is related to company's effort towards recognizing the environmental elements in routine operations. It is clear that the environmental aspect is related to company's economic welfare and vice versa.

Three environmental elements in order to maintain a harmonious life are physical, biological and social environment. Thus, a human being needs to adjust or adapt to these changes from time to time (Jones & Solomon, 2013; Lungu, Caraiani, Dascalu, & Guse, 2010). Various factors determine the nature of the environment (Jones, 2003; Lange, 2003, p.6; Markandya & Tambora, 2005). These factors include:

1. The type and amount of each type of these environmental elements (physical aspect)
2. Relationships or interactions between elements in the environment (biological aspect).
3. Behavior or condition of environmental elements (physical and social aspect).
4. Non-material factors that are caused by the land, temperature, light, energy, and noise (social environment aspect).

The process of developing the environment is a concept in business that began in 1981, when Spreckley introduced the notion of Triple Bottom Line (TBL) (or the Three Pillars), that refers to the social and environmental responsibility, which should be incorporated into business strategy and could be used as an assessment of performance (Edgley, Jones, & Solomon, 2009; Fleischman & Schuele, 2006; Gurtvitsh & Sidorova, 2012). It comprises of the social goal, social mission, social change and social value that are needed for providing a solution to social problems surrounding the business operations (Paz-Vega, 2008; Santos, 2012). Paz-Vega (2008) in his

dissertation examined CSR causal factors emerging from the different cultural, structural systems in social dimension and found that corporate social action and performance affect organization and managers of companies in Mexico. Then, to conduct plausibility probe of socio-cultural system, a single case study of an U.S multinational company in Mexico was applied, and it was found that the category of religious or philosophical motivations, institutional forces, pattern of existing task environment constitute socio-cultural system properties associate to internal management discretions. Discretions of internal management are based on dynamic motivation and refuse to be passive objects that are suppressed by external parties or external who those have vested interests into organization.

Meanwhile, Santos (2012) revealed solution to social problems on his grounded theory-research as stated on propositions that 1) the involving positive externalities is to make distinctive domain of social action by company example wherein company provides workshop for youth, 2) most social activities by company are offered through services to disadvantaged segments of the population (poor, long-term unemployed, disabled, discriminated, socially rejected), 3) most social activities by organizations are likely to seek sustainable solutions than to seek sustainable advantages; sustainable solution is based on short term solution and sustainable advantages are based on long-term solution, 4) company develops solution more based on logic of empowerment for example training for employee rather than based on logic of control for example develop internal system to incorporate the externalities. Essentially, internal management has discretion to allocate its resources to develop an organization more environmentally and socially responsible in order to be accepted of business existence in the community.

Many companies have been charged with environmental malpractices because of free market environmentalism (Rugman & Verbeke, 1998). An example of it is the refrigerator manufacturers who have been forced to avoid chlorofluorocarbons or CFC in their products. McCarty & Zen (2010) reveal that Unilever case has shown that non-governmental organization (NGO) coalitions are able to work across national boundaries in Indonesia. Then, their action of identifying the forum in which transnational market chains are most vulnerable may assist in bringing pressure on manufacturers to implement 'green product' criteria (Schmidt, Kwasniok & Timm, 2010, p. 75). Indonesian policy-makers realized these indicators after the country's lucrative oil palm exports became a subject of international opprobrium unless they meet The Roundtable on Sustainable Palm Oil (RSPO) standards (McCarty, 2000; Carmody & Shaw, 2010, p. 4). The threat of international boycotts of products containing Indonesian oil palm made NGO coalitions to direct the non-compliant companies to follow RSPO criteria. After the event, the indicators are beginning to affect the state policy (www.en.tempo.co, 2013).

Yakhou and Dorweiler (2004) studied the effective tools to portray accountability for outsiders' interests in environmental reporting. Mobus (2005) insisted that transparency regarding the environment is required for organizational change in business products, processes and its structure. It is thus expected that corporate discloses the transparency or visibility about what the company has been doing in relation to the environmental practices in its environmental reporting. Reporting is the way to reduce external pressures.

Different sectors of the country are experiencing the impact of climate change, such as the agriculture, fisheries and other business sectors. This suggests that there is an association between collective interest and the natural environment (Markandya & Tambora, 2005, p. 30; Saunders, 2003). Collective human life becomes vulnerable to the declining quality of life. It has triggered the society to pressurize the governments and businesses to pay attention to social and environmental factors in their policy-making (see stakeholder theory of Freeman, Wicks & Parmar, 2004). Their pressures are in the form of open protest (Previts, 2003); products boycotts (Arbor, 2011); and giving the company a bad image through the media and internet (Raska & Shaw, 2012). Raska and Shaw (2012) examined on US consumers (as collective interest) to a firm's environmental initiative. Thus, all of these have negative effects on economic profit (Martinez, 2012; Smith, Yahya & Amiruddin, 2007). Accordingly, it gives insight that the external pressures visibly impact corporate's financial position.

Conversely, when corporations engage in environmental branding, it will increase the market's stock price (Cagatay & Mihci, 2006; Wong, 2012). This is because investors begin to pay attention to the social aspect when they want to invest. Therefore, human rights activists triggered voluntary CSR to be included in the financial report (Benoit-Moreau, 2011). Fleischman and Schuele (2008) state that CSR has developed significantly and become an important part of curricula in business school, universities and other education institutions in helping future managers and employees who want to increase their ability to implement CSR. Therefore, the theory of CSR is more developed than corporate environmental reporting (CER) (Smith et.al, 2007). Moreover, it gives rise to an understanding that CSR practices are more developed than the corporate practices pertaining to their environmental responsibilities.

Environmental aspects have been included in the financial network since the 1970s in Norway (PRI, 2010). It influences people's thinking about the importance of environmental factors in choosing a product (Blanco, Rey-Maqueira & Lozano, 2009); management effort to improve company image (Raska & Shaw, 2012); and government strategy to set an influential political arena (Hail, Leus & Wysocki, 2009). All of these provide a strong awareness for the global community (Fleischman & Schuele, 2006). There is also strong scientific evidence that the environment greatly affects the survival of human beings (Lange, 2003, page 41); when his case study research in Namibia revealed very critical number for water affected not only community but also commercial agriculture. This seeks to highlight that the public consideration of human rights to be healthy and to have a safe life forces the business entities towards showing more commitments and paying serious attention to the environmental aspects.

Therefore, a wave of the socio-economic aspects has forced companies to quickly innovate and rebrand their production or products to be environment-friendly; if they are not, then they will be in a weak competitive position in the market (Elsayed & Hoque, 2010; Mook & Quarter, 2006; Rugman & Verbeke, 1998). Further, this topic has aroused the concern of the public and NGOs in the context of global climate change and forced businesses and the government (see determinism of Paz-Vega, 2008) to pay attention to social welfare as one of the crucial aspects of the environment (O'Dwyer, 2005).

The special arrangements should be vis-à-vis the the environment concept, which is different from the concept of social welfare (Smith et.al, 2007). This is due to the

imbalance of information and control over the eventual impact of sustainability (Fleischman & Schuele, 2006). Corporations that neglect environmental considerations could incur a loss of customer loyalty because of environmental sensitivity (Mahadeo, Oogarah-Hanuman, & Soobaroyen, 2011; Raska & Shaw, 2012; Smith, Yahya, & Amiruddin, 2007); high legal costs and high fines for the environmental problems they have caused (Smith et al., 2007).

### **2.3 Environmental Accounting (EA) Studies**

Environmental accounting is a term with various meanings. In many contexts, EA means to identify (Yusoff & Lehman, 2009) and report the environment's specific costs, such as liability costs or waste disposal costs (Burritt et.al, 2011). Burritt, Schaltegger and Zvezdov (2011) proposed a framework of carbon management accounting wherein case study method was applied as focus of the research work was on conceptualising observations rather than on quantitative accuracy. Also, Burritt et al. (2011) interviewed 10 German listed companies, and it is useful to note that German as well as other European countries have been adopting environmental management accounting (EMA) as EA standard, and they follow distinguished cost and measurement method based on period between past and future orientation, routine and ad-hoc, short-term and long-term according to decision situations. This gives insight that EA has various meanings based on country specific contexts.

In another setting, EA becomes a national accounting term if the environmental resource losses and gains are monetized and subtracted from the traditional measurement of economic output (Jerrett, Rey, Dufournoud et al., 2003; Jorgensen & Soderstrom, 2006). In a general sense, environmental activities guide many interested

parties on accountability and visibility issues (Brown & Fraser, 2006). Earlier studies have revealed that a general definition should be used for the purposes of analysis (Boyd, 1998). Environmental accounting is more than accounting for environmental benefits and costs. Boyd (1998) noted it refers to accounting for any costs and benefits that arise from changes to a firm's product or processes, where the changes also involve a change in environmental impact (Burrit et.al, 2011; Fleischman & Schuele, 2006; Rugman & Verbeke, 1998). The improvement on accounting for non-environmental costs and benefits, such as input prices and consumer demand, could lead to changes in decision-making that have environmental or non-monetary consequences (Mook & Quarter, 2006; Jerret et al., 2003). Thus, there should be a clear demarcation between EA and accounting in general (Fleischman & Schuele, 2006). Yakhou and Dorweiler (2004) stated that EA has an important role and is fundamental to human survival. The environment account or green account (in European countries) is related to socio-economic aspects (Lange, 2003, p. 2; Mook & Quarter, 2006). The syncretism of environment quality from business process and economic aspect can build the image of its product (Martinez, 2012; Raska & Shaw, 2012). Hence, EA is stimulated by external interests, however, it has tremendous influence on internal organization too.

Furthermore, Boyd (1998) stated that EA information is not necessarily the product of accountants, or used by accountants, product innovators (Lee, 2011); financial analysts (Clarkson, Overell & Chapple, 2011); facility managers are also constantly using the EA data. Wong (2012) revealed that green innovation process will prevail if the company does not disclose environmental-related matters in their financial statements. EA information is any information with either explicit or implicit financial content that is used as an input for decision-making (Hecht, 1999; Negash, 2012). This

further reinforces that the information/data generated from EA is useful for the internal management.

Almost all types of information which are collected and analyzed by firms will qualify for this (Campbell & Beck, 2004). The examples include input prices (Cagatay & Mihci, 2006; Lee, 2011); technical and scientific studies that are related to production processes in physical outputs (Cagatay & Mihci, 2006; Pickett-Baker & Ozaki, 2008; Wong, 2012); legal proceedings (Mobus, 2005; Jorgensen & Soderstrom, 2006); marketing (Brown & Fraser, 2006; Pickett-Baker & Ozaki, 2008; Raska & Shaw, 2012); and financial analyses (Earnhart & Lizal, 2010; Firoz & Ansari, 2010). Therefore, EA should provide data which can be used for monetary performance besides physical performance.

Yusoff and Lehman (2009) find that a quantitative approach to environmental information in the financial statements is deemed less favored by readers (in Malaysia and Australia); it also produces minimal messages. Conversely, Martinez (2012) revealed that quantitative evaluation impacts have become increasingly scrutinized and visible, and hence measurable. Moreover, Clarkson et al. (2011) recounted seeking the EP that has historically been constrained by the availability of data through quantitative measurement. According to Jerrett et al. (2003), there are several kinds of understanding about EA. Some scientists provide broader understanding while others are narrower. The general term of EA is associated with the management of the environment (see Berger, 2010; Lee, 2011). In this case, environmental management has a goal to support the implementation of ISO 14000 (Fleischman & Schuele, 2006; Yakhou & Dorweiler, 2004). The environmental data in an environmental



management system (EMS) which is based on ISO 14000 standards is consistent with environmental cost accounting (Yakhou & Dorweiler, 2004). Europe is more progressive about EA (Lange, 2003, p.1). Besides EA, there are other certifications, called EMAS or Eco-management and Audit Scheme; that give assurance of sustainability practices of EA in the European Union (EU) (Fleischman & Schuele, 2006; Gray, 2000). As such, any approach or method pertaining to EA measurement is regarded as an acceptable standard.

Many countries have become proponents of the internalization of external issues, such as EA, on their accounting practices. Monteiro and Guzman (2010) examined whether the issuance of the first Portuguese accounting standard on EA has influenced the overall level of environmental information which is disclosed by Portuguese large companies in their annual reports and in the disclosed items (Fleischman & Schuele, 2006). According to Barbu et al. (2011), German corporations disclose more non-environmental monetary information than British and French corporations, even though only Germany has provided disclosure guidelines for listed and non-listed large companies. Barbu et al. (2011) conveyed the actual practices while France and the United Kingdom (UK) have determined a regulatory framework for environmental information. The result shown that the absence of EA could happen because of the absence of a regulatory framework of environmental information (Cho, 2007). Jerrett et al. (2003) and Yakhou and Dorweiler (2004) described that environmental accounting is the accounting process of:

1. Identifying, allocating and then reducing the negative environmental effects of implementing the practice of conventional reports (notably Lange, 2003, p.13).

2. Separately identifying the costs and revenues associated with the environment in the conventional reporting system (Lungu et.al, 2011).
3. Taking active steps to develop initiatives in order to improve the environmental effects, which arise from conventional reporting practices (Lungu, 2010).
4. Planning the new system for financial and non-financial reporting, information systems and surveillance systems that will support management decisions that are new to the environment.
5. Developing new forms of performance measurement, reporting and assessing internal and external purposes (Watson, 2004).
6. Identifying, testing, finding and fixing the areas where the rules of conventional financial criteria and environmental criteria are contradicting.
7. Trying the way in which sustainable systems can be assessed and incorporated into practice in relation to organizational goals (Husser et al., 2012; Peters & Romi, 2011).

Thus, understanding on accounting process is a precedent key for developing EA practices.

EA corroborates management accounting, financial accounting and cost accounting (Lee, 2011; Merlo, 1997; Yakhou & Dorweiler, 2004). Thus, Hogg (2005) suggests that EA is an essential area in accounting (Figure 2.1).

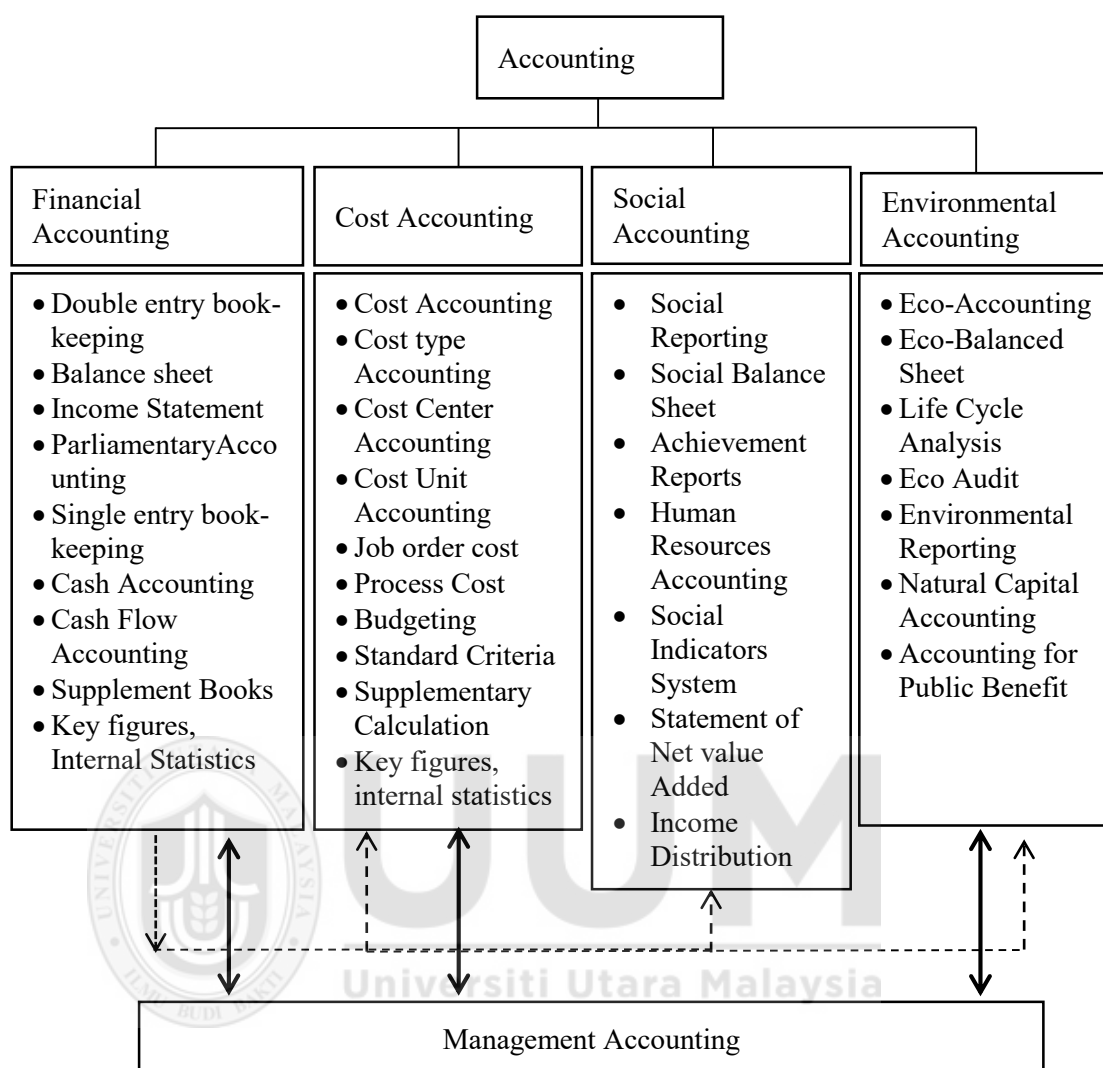


Figure 2.1  
*EA as An Extension of Management Accounting*  
 Source: Hogg (2005, p. 8).

Financial accounting records the flow of money, goods and services from and to the company in monetary terms (Burrit et.al, 2011), and the resulting changes in assets and liabilities (Negash, 2012). Monetary profit is the basic result of benefit measurement (Negash, 2012). Based on Figure 2.1 the information data from EA (all data from other field in accounting) is processed by management accounting for internal management purpose. Moreover, cost accounting analyzes internal processes, absorption factors and performance in detail. It is characterized by the efficiency

criteria. Both systems of accounting cover the production of goods and the provision of services as far as they contribute to monetary profit (the Principles for Responsible Investment or PRI, 2010). The field of accounting in general intends to facilitate the organization in building robust accounting systems that support the improvement of entity's overall performance.

Management accounting comprises all accounting activities aimed at providing relevant data for management purposes (Hogg, 2005). The EPA (1995) implies that EA can support national income accounting (public sector) (Markandya & Tamborra, 2005); financial accounting or management accounting. Yuliusman (2008) stated several purposes for EA: 1) The environmental accounting is an environmental management tool (also Burrit et.al, 2011; Yakhou & Dorweiler, 2004); and 2) EA is a means of communication with stakeholders (also Freeman, 2004). It gives rise to a concern that the study on EA can be done in all accounting fields with due considerations towards ultimately supporting corporate management's planning and government's policies.

As a means of communication with the public, EA is used to convey the negative impacts on the environment (Yakhou & Dorweiler, 2004); and the environmental conservation activities and the results to the public (Preble, 2010). The responses and views on EA come from the customers, investors and the government with the feedback to change and modify the company's approach to conservation or environmental management.

As a tool of environmental management, EA is used to assess the effectiveness of conservation events based on the summary and classification of environmental

conservation cost as well as the overall investment required for environmental management activities (PRI, 2010). It highlights that the EA provides data for supporting corporates in managing conservation expenditures.

Besides EA being used to assess the level of output and performance each year to ensure the improvement of environmental performance (EP), it should also take place continuously (Ball, 2005; Clarkson & Overell et al., 2011). The presence of EA is a phenomenon at business level. Barbier (1989) and Boyd (1998) suggested that the elements of EA, measurement, accounting standards and regulations have to contribute to the companies' profit (Martinez, 2012); and to national interests (Jorgensen & Soderstrom, 2006). Furthermore, EA provides reports for both internal use (Yakhou & Dorweiler, 2004) and for generating environmental information to assist management decisions on pricing, capital budgeting and controlling overheads (Jobstl & Hogg, 2005; Hinds & Spark, 2007); and for external use for disclosing environmental information of interest to the public and to the financial community (Kang & Gray, 2011; Iencu, 2012). Thus, the interest of environmental information is required not only by internal parties, but also by the external parties which means that there is a need to maintain harmonious accounting treatment. Harmonization in accounting follows accounting principles.

Beyer et al. (2010) recommended that future EA studies should focus more on technical aspects, such as the development of performance measures (Berger, 2011; Burrit, Schaltegger & Zvezdov, 2011); and benchmarking techniques on environmental-related matters (Brown & Fraser, 2006) through the best accounting practices in this area (Bewley, 2005; Bragg, 2004; Jones & Solomon, 2013). Lack of

studies on EA is evidenced by the poor EA data and procedures which are closely linked and related to poor accounting techniques and practices (Bicalho, Richard, & Bessou, 2012; Jones, 2003b; Jones & Solomon, 2013).

### **2.3.1 The Absence of Environmental Accounting (EA) Accounts**

The same paradigm applies to accounting research where the absence of an account is viewed with suspicion (Catasus, 2008; Negash, 2012); and regarded as conservatism (Beyer et al., 2010; Negash, 2012). Webb, Cahan, and Sun (2008) divided conservatism into two areas: common law (dominated by accounting standards) and civil law (legal enforcement). Also, conservatism is usually connected to the high cost (Gelb, Holtzman & Mest, 2008). Conservatism is one of the accounting principles examined by Gelb et al. (2008) on US multi national corporations related to voluntary disclosure who further found that cost was reason of firms reducing the extensive disclosures. Here, law system can either facilitate or even slow down the development of EA.

Pressures from outside to endorse the absence of an account is considered as counter-intuitive and against the dominating transparency discourse (Monteiro & Guzman, 2010; Santos, 2012, Catasus, 2008; Jun Lin & Chen, 2005). Social pressures and legal requirements are the forces influencing the extent of disclosures. Catasus (2008) stated that many researchers of accounting have been mostly concerned with the term presence in accounting. The main argument is that accounts create a presence in accounting, a presence that holds audibility, visibility and accountability (Brammer & Pavelin, 2004; Cowan & Deegan, 2011; Gray, 2000; Mahadeo et al., 2011). Specifically, Catasus (2008) mentioned about audibility and visibility in his study

directed towards the absence of regulations and standards on EA. Mahadeo et al. (2011) examined sustainability of social disclosure in African firms and found public visibility as part of firms indicator to follow government regulations. Brammer and Pavelin (2004) implied on visibility as a nature of activities that is not determined by organizational size. Furthermore, intent to environmental accountability was revealed by Gray (2000), and Cowan and Deegan, (2011) as control on organizational transparency. External pressure can be a force as well as a motive; however, it can also be a hurdle for entities in being more transparent and accountable. Corporations avoid pressures by showing restraints in disclosing information.

Based on the logic of presence, accounting is an area for creating accounts and transparency (Kang & Gray, 2011). It is a very important matter (Catusus, 2008). An absence of accounting would ruin the efforts made to create accountability (Gray, 2000; Staunton, 2008). Negash (2012) discovered that absence of environmental issues in the earnings quality literature for past and present activities of a company has given room for debt and overstatement of earnings. Business entities try to avoid negative impact of the past scenario on the current financial performance.

Another view about the absence of accounting is in the measuring process. There is a fair amount of skepticism that companies that do not report on environmental issues have been marked and even defamed by stakeholders (Çalışkan, 2014; Wood & Ross, 2006). Even in the bullet points of the critical agenda, some accounting standards are considered better than no accounting standards or just supplementary report on environmental activities.

Previous researchers have described the absence of accounting as a means for contemplation and confidentiality (Catasus, 2008; Schutte & Buys, 2011). The case of EA in Indonesia at present reflects that there is insufficient standard of EA, however the practices are imposed by environmental law wherein its existence does not only require techniques, accounting professionals and regulations as the external contribution, but also requires stewardship from shareholders to manage the internal contribution. Yakhou and Dorweiler (2004) mention shareholder's involvement in developing new product, enhancing measurement of environmental performance (EP), and in developing non-conventional business strategy; Rugman and Verbeke (1998) mention shareholder's pressure on firm's strategy; Jones and Solomon (2013) mention shareholders as one of the key contributing stakeholders; Brown and Fraser (2006) mention on shareholder primacy norm which contributes to shareholder's wealth. Many interested parties are involved in EA who intend to obtain benefit from it.

EA is not mandatory specifically for a common business account but for external demands too, which have turned EA into an internal matter (Ancelin-Bourguignon & Zarlowski, 2013; Brown & Fraser, 2006). Internalizing an external matter is the policy of the company to avoid business risk coherence with social factors (Lungu & Dascălu, 2010). The action is accomplished by comparing the company's economic and social costs or benefits (Blanco, Rey-Maqueira & Lozano, 2009; Firoz & Ansari, 2010; Frost, 2007). The accountant should recommend the company to use EA to assess costs and benefits (Jones & Solomon, 2013); and assist the company to comply with environmental regulations as well as accounting regulations (Govindarajulu & Daily,



2004). However, EA in professionalism aspects pose accountants to bigger challenges in terms of enhancing their skills and knowledge.

### **2.3.2 Standardization of EA Accounts on Environmental Disclosure**

Bewley (2005) used the terms, standards, statements, bulletins, guidelines and recommendations, that are all considered as financial reporting regulations. Conversely, Hail et al. (2009) used reporting and disclosure, referring more to practices than standards. There is a need to know how companies can practice EA (Jones & Solomon, 2013), and more importantly, what information can be provided (Burrit et al., 2012). The information about a company's social responsibilities and environmental activities have increasingly become a necessity (Jennifer Ho & Taylor, 2007). The information and its indicators can be used to show the effectiveness of a company's effort, not only in managing environmental issues but also in measuring the risks faced by the company (Gurtvitsh & Sidorova, 2012; Lungu & Dascalu, 2010). Reporting or disclosure related to EA tends to provide data for evaluation matters in accounting.

Stakeholders need to evaluate the depth of the company's concern in the social environment where it operates (Brown & Fraser, 2006; Smith et al., 2007). There are many ways to inform the environmental activities done by the company (Barbu et al., 2010; Negash, 2012). The company informs their environmental issues and activities by reporting it in the annual report (Monteiro & Guzman, 2010; Negash, 2012); or in the management report (Gurtvitsh & Sidorova, 2012); or presenting or publishing articles through websites (Campbell & Beck, 2004; Ho & Taylor, 2007). Larger companies usually make known their environmental and social activities in the annual

report more than the medium sized company, even though it is more qualitative data than quantitative data (Edu, Otonkue, & Nja, 2009). Stakeholders tend to get concerned about corporation's reporting contents, more particularly when some negative issues arise in connection with environmental impacts at other corporations.

The environmental report is a non-financial report needed by the public to evaluate the company's performance, including management's commitment to social and environmental issues (Clarkson, & Overell et al., 2011; Lungu & Dascalu, 2010). It also contains positive responses from investors about the management of environmental issues (Lungu & Dascalu, 2010). Most people use the annual report because it is the most effective and credible report (Abdel-Rahim, 2010). The annual reporting contents and format are not limited by any regulation, thus information inside reporting is seen to depend fully on the corporation's discretion.

The company discloses its environmental activities because of the pressure from the public on the company to improve environmental quality (Lungu et al., 2009; Jones & Solomon, 2013). Moreover, the disclosure can improve the company's image because it reports its activities based on environmental improvements undertaken so as to be commended by the public as an impressive management (Chen & Chen, 2009; Cho, Freedman & Patten, 2009; Negash, 2012; Patten, 2005). Hence, at times, they do overact and manipulate the contents without considering the future impact on their financial performance (Bewley, 2005; PRI, 2010), but some do so without any impact (Yusoff & Lehman, 2009).

Currently, environmental reporting is not adequate to show a fair view of the company's activities (Jones & Solomon, 2013). Indeed, sometimes the annual report is used to

impress the public; so it does not work as a continuing activity (Jones & Solomon, 2013). It is a temporary event and not integrated with internal activity (Yakhou & Dorweiler, 2004). For instance, in spite of having social activities, such as planting trees or fun biking to celebrate the company's anniversary, the stakeholders need to do more, like trying to reduce emission (Berger, 2010; Beck et al., 2010; Negash, 2012; Burrit et al., 2012), or adhering to free market rules about environmental goods and services (Mook & Quarter, 2006; Rugman & Verbeke, 1998). Furthermore, on free market rules, Mook and Quater (2006) explained that the non-monetary information was also collected by a Canada firm in its case study conducted to create comparative market value.

Many countries have set their criteria about how to report environmental performance or EP (Brown & Fraser, 2006). Denmark became the first country to set and legalize it, but Norway is the first to account for resource scarcity (Eugenio, 2009, p.54; Hecht, 1999). The policy in Denmark and the Netherlands mandates companies to report EP to the government and the public, while in Norway and Sweden, companies have to report EP in their annual report (Hecht, 1999). In the US, Canada and Australia, when a company wants to make an initial public offering (IPO), it has to disclose environmental compliance. All companies have to apply it well, or they will face a lawsuit and high penalty (Wood & Ross, 2006; Markandya & Tambora, 2005). Each country uses a different approach in the practice of EA, such as reporting using either stand-alone or integrated report (Gurtvitsh & Sidorova, 2012; Jennifer Ho & Taylor, 2007; Negash, 2012; Smith et al., 2007).

In a further development, it has become a major draw card for choosing appropriate format of disclosure for many companies to avoid or neglect reporting environmental issues (Berger, 2010). It has been found that large companies are likely to have more voluntary disclosures because of the lower costs of collecting and disseminating such information (Kang & Gray, 2011; Chau & Gray, 2010). Instead of reporting EA, many companies prefer to do 'greenwashing' (Arbor, 2011; Gurtvitsh & Sidorova, 2012; McCarthy & Zen, 2010).

The term, 'greenwashing', refers to the altruistic activities conducted by companies to wrongly compel their consumers to buy products on the perception that the company is environmentally friendly (Arbor, 2011). It is perceived that organizations disclose environmental information only to enhance their image (Lungu & Dascalu, 2010; Raska & Shaw, 2012). Moreover, Lyon and Maxwell (2011) noted that greenwashing is growing because the communication of environmental messages is still uncontrolled by any industrial standards. To achieve their goals, companies are free to provide misleading information about their environmental policies without any restrictions (Gurtvitsh & Sidorova, 2012). It indicates that many companies are more concerned about image than the essence of sustainable development (Brown & Fraser, 2006). Here, industrial standards related to environmental aspects tend to offer guidance to corporations about how to produce environmental friendly products.

The lack of restriction on the voluntary practices is because GAAP or any accounting standard does not explicitly mandate them (Heitzman, Wasley, & Zimmerman, 2010; Kang & Gray, 2011). Accounting standards on EA must be a government-level policy because EA is an external demand which is incorporated in the annual report. Bedner

(2010) suggested that governmental authority is divided across several levels in order to have environmental control, standard setting, monitoring and sanctions to protect the environment. Wood and Ross (2006) pointed out that law and accounting standards are needed to make ED mandatory.

Voluntary disclosure is an additional disclosure (Akhtaruddin & Haron, 2010; Kang & Gray, 2011). Thus, it is separated from the financial statements and included in other voluntary publications or in investor relations programs (Aldhizer, Martin, & Cotter, 2009; Dedman, Lin, Prakash, & Chang, 2008; Kang & Gray, 2011).

Furthermore, voluntary disclosure leads to ambiguous practices (Edgley, Jones & Solomon, 2009). Although many companies publicize their environmentally-friendly actions, others are in doubt whether to report environmental activities in detail (Benoit-moreau, 2011). Lyon and Maxwell (2011) expressed that stakeholders react more angrily to companies that claim to be virtuous, but then find out the companies have never fulfilled such claims. BP, for example, made frequent public claims about its efforts to reduce global warming, but on 22 April 2010, there was mismanagement of their drill pipe when the drilling rig exploded in the Gulf of Mexico near the Mississippi. Thus, the environmentalists and activists have a reason to view such businesses as a menace to the environment.

The IFRS does not mention explicitly about EA standards (Barbu et al., 2011), but it mentions that there is a need to issue specific guidelines related to environmental liabilities (Elijido-Ten, 2004, Negash, 2012) in order to ensure that relevant and reliable information is provided and to promote uniform and consistent application of existing standards.

According to Negash (2012) as showed in Table 2.1, IFRS setters are of the opinion that the minimum information about EA that must be disclosed in the existing statement can be determined by amending IAS 1 (presentation of financial statements) and providing a transition clause in IFRS 1 (first-time adoption of IFRS).

Table 2.1  
*IFRS about EA*

	<b>IFRS/IAS Number</b>	<b>Title and/or description</b>	<b>Relevant paragraph(s). Paragraph numbers in parentheses</b>
1	IAS 20	Government grants	Initial acquisitions of emission rights and allowances recorded as assets whose valuations are subject to impairment tests
2	IFRIC 5 (January 2006)	Decommissioning, restoration and environmental rehabilitation funds	Purpose of fund (1), voluntary and required contribution to the fund (2), geographically dispersed sites (2), independent trustees, accounting for interest in the fund (7), obligations to make additional contributions (10), contingent liability (10), reimbursement rights (BC 12)
3	IFRS 8	Operating segments	Core principle (1), nature of an operating segment (5), aggregation criteria (12), quantitative thresholds (13), disclosure (20), profit/loss/assets and liabilities (23), measurement (25), geographical information (33)
4		Consolidation, investments in mergers and acquisitions, interests in joint ventures and associates; consolidation of special purpose entities.	Several paragraphs relate to ownership, risk, reward, and significant influence.
5	IAS 37	Provisions, contingent liabilities and contingent assets	Several paragraphs that require charging current earnings for normal provisions and contingent liabilities

Table 2.1 (Continued)

	<b>IFRS/IAS Number</b>	<b>Title and/or description</b>	<b>Relevant paragraph(s). Paragraph numbers in parentheses</b>
6	IAS 8	Accounting policies, changes in accounting estimates and errors	Accounting policies (10), retrospective application (22), warranty obligations (32 and 33), errors (41), prior period errors (49), the impracticability of retrospective adjustments (51-53)
7	IAS 1	Presentation of financial statements  Relevant	Material omissions (7); purpose of financial statements (9), fair presentation (15), rectification of accounting policies (18), going concern (25), provisions (54), estimation of uncertainty (125)
8	IFRS 1	First-time adoption of IFRS	Accounting policy (97), fair value (16), compound financial instruments (23), parents, subsidiaries, joint ventures and associates (24), changes in decommissioning, restoration and similar liabilities (25E), non-IFRS comparative information (36), reconciliations (39)
9	IFRS 7, IAS 37 and IAS 39, IFRS 9, IAS 38	Financial instruments disclosure, presentation and recognition and measurement, intangibles and impairment	Several paragraphs
<b>Remarks</b>			

- 1 The politics of the day will influence the government grants policy. The government can over/under require the rights certificates; hence affecting the price of carbon securities. Endemic corruption in the public sector might frustrate the system. Trans-boundary and non-trans-boundary causes need an international treaty.
- 2 Disclosure of the size of the fund; arm's length distance of the trustees; plans for additional contributions; responsibility for past degradation; adequacy and liquidity of the fund
- 3 For a global company, whether its branches and subsidiaries are operating in environmentally sensitive sectors; and whether the segment meets the quantitative threshold, or whether it is required to prepare consolidated financial statements, and whether its segments meet international standards
- 4 Group and consolidated statements are prepared for listed legal entities. Listed and unlisted companies might be sued for violating environmental standards in countries

Table 2.1 (Continued)

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	where their segments operate/operated in the past. This, in turn, might trigger an unbundling wave and hence a need for a global treaty.
5	Absence and inadequacy of provisions suggest earnings overstatement which in turn affects the intrinsic (fundamental) values of equities
6	The extent to which past earnings require restatement, and how this is going to be shown in past, present and future financial statements (retrospective and prospective adjustments)
7	Minimum requirement of information that must be included in the financial statements of environmentally sensitive companies
8	Fair value of environment-related assets, liabilities and provisions
9	Disclosure of past and present environment-related risk(s); qualitative and quantitative description of the effective and non-effective hedging strategy; fair value of carbon derivatives and other environment-related assets and liabilities.

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Source: Negash (2012, p. 586-587)

The standards that deal with changes to accounting policy (IAS 8), provisions (IAS 37), specialized industries (IAS 41), exploration and evaluation of mineral resources (IFRS 6), government grants (IAS 20), and intangibles (IAS 38) can be amended in order to recognize environmental issues related to liabilities and assets (replacements/ impairments) and to back up provisions using ring-fenced cash or near-cash of investments (the investment which can be converted to cash without any restrictions). See Figure 2.1 about cash on investment.

Some unique issues related to environmental liabilities that become challenges in applying the existing financial statements concepts include, but are not limited to, the following:

1. Generally, multiple activities are required over time to deal with environmental obligations (Mobus, 2005). There may be alternative courses of action, each with different resource requirements and outcomes.



2. The obligated event that commits the government to a course of action is not always clear (McCarthy & Zen, 2010). Diverse accounting practices could be developed in the determination of when and how the government recognizes the obligation (Yakhou & Dorweiler, 2004).
3. Early in the process, there may not be an identifiable entity or third party to whom the obligation is owed nor is the timing of the settlement of the obligation always determinable (notably also by Yakhou & Dorweiler, 2004).
4. There may be an appropriate basis for measurement. However, the amount of the liability may not be fully estimable at any one point, may change over time and only be estimated within a range of possible outcomes.
5. Costs may be allocable and/or recoverable from other organization(s) with varying degrees of certainty. Recovery may require legal action and be protracted.
6. Due to the uncertain inherent characteristics of environmental liabilities, the disclosure requirements related to financial statements presentation may be unique.

Lange (2003) stated that environmental assets are split into physical asset accounts and monetary asset accounts, but are associated with national accounts. Jones and Solomon (2013) tried to combine both accounts into environmental disclosure but still faced the problem of measurement. This problem also occurs in Indonesia (Ariesanti, 2012).

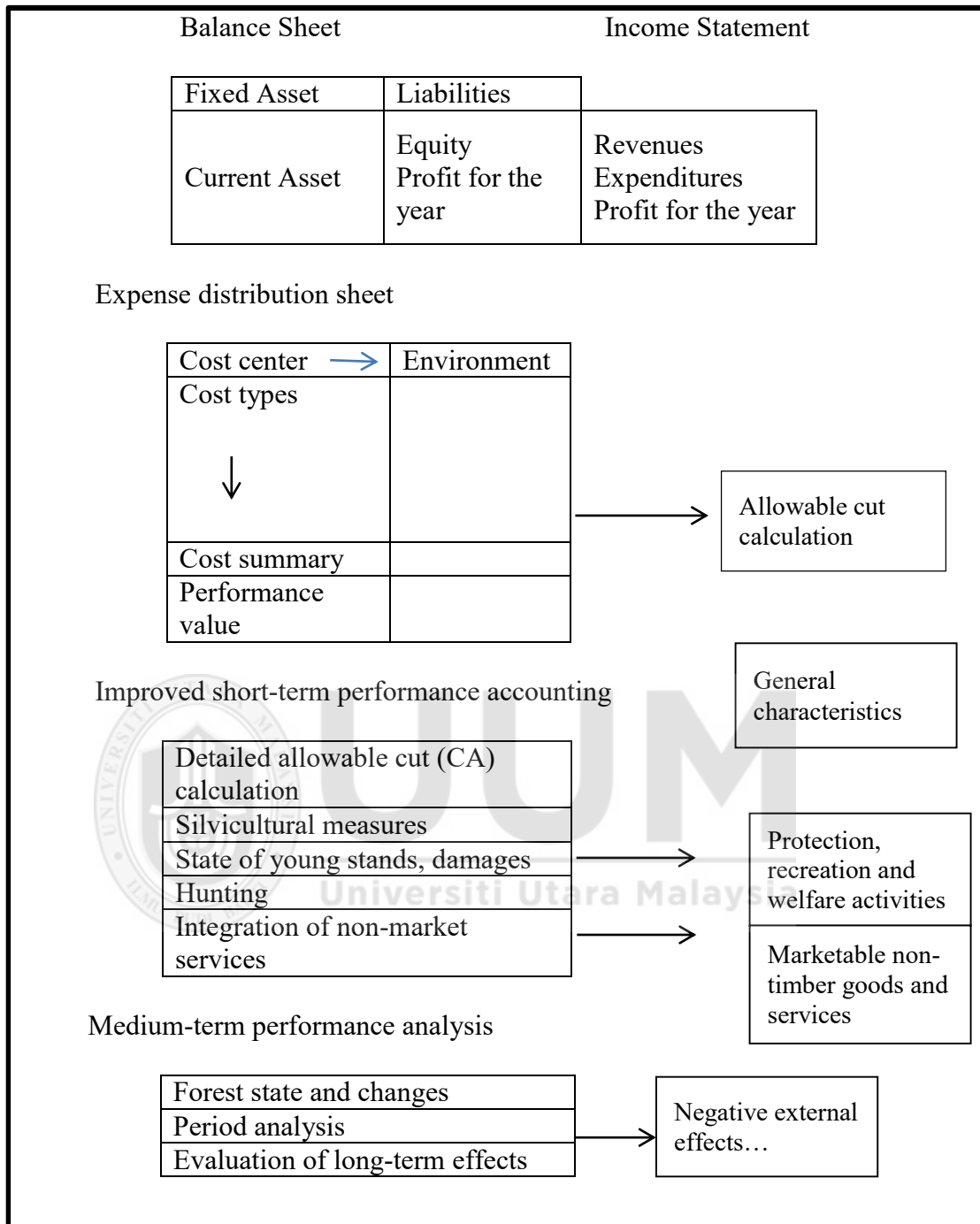


Figure 2. 2  
*The Framework of EA Accounts in Accounting System in Forestry Company*  
 Source: Jobstl & Hogg (2005, p.86)

The incorporation steps of EA for environmental accounting can be started by using a simple approach proposed by Merlo (1996). Merlo's approach has been adopted by Jobstl and Hogg (2005) as shows in Figure 2.2. For instance, in a forestry company

that follows conventional accounting principles, the first step is to start with the main financial statements: balance sheet, profit and loss account of the particular company (see Figure 2.2). The second step is setting accounting discretion for recreational activities from conventional ones, such as agricultural products and timber and from recreational environmental services. The third step is outlining market values as perceived by the management; assets and liabilities, such as changes in stock and risks due to natural hazards which are hidden values. The fourth step is incorporating non-market benefits and costs (externalities), or at least, providing a framework for their incorporation, as far as they are counted in monetary terms or by other means.

Also, Negash (2012) presented the statement of environmental assets and liabilities which are consistent with IFRS (see Table 2.2). Firoz and Ansari (2010) stated that most of the corporations deal with trans-boundary and non-trans-boundary environmental issues in disputing earnings quality. It is because of the absence of provisions for the various environmental laws and national accounting standards (Farouk, Cherian & Jacob, 2011; Negash, 2012). The same situation is applicable with the reserves which set aside contingent liabilities (Firoz & Ansari, 2010; Jorgensen & Soderstrom, 2006) for activities that are related to the company's past and present activities. Moreover, Firoz and Ansari (2010) stated that this condition will cause earnings inflation of domestic and multinational companies as a consequence (Frost, 2007).

Table 2.2

*Environmental Assets and Liabilities*

<b>Financial information</b>	<b>Comparative year</b>
Environmental assets	<ul style="list-style-type: none"> <li>*Cash and cash equivalents in hand</li> <li>*Investments in trust funds at fair value</li> <li>*Emission/mining/extraction rights held</li> <li>*Emission/mining/extraction rights held for sale (at fair value)</li> <li>*Insurance and similar products held against environmental risks (actuarial value)</li> <li>*Contributions to other voluntary and mandatory schemes</li> <li>*Inventory of natural and biological assets, less accumulated depletions/amortization</li> <li>*Investments in air and water quality improvement</li> <li>*Capitalized environment-related research and development</li> <li>*Capitalized site preparation, decommissioning and restoration costs.</li> </ul>
Environmental liabilities and certain liabilities	<ul style="list-style-type: none"> <li>*Present value of terminal (Provisions or contra-asset accounts) decommissioning, restoration and rehabilitation costs</li> <li>*Legal and constructive liabilities arising from past events (e.g., 50 years)</li> <li>*Deferred income from government allocations of emission/mining/extractive rights.</li> </ul>
Uncertain liabilities	<ul style="list-style-type: none"> <li>*Provision for decommissioning, (Provisions or contra-asset accounts) restoration and rehabilitation (current projects)</li> <li>*Provision for decommissioning, restoration and rehabilitation (past projects)</li> <li>*Provision for contingent liabilities from past events (e.g., 50 years)</li> </ul>
Net adjustments to retained earnings for the past	
Errors and material omissions	
Net surplus (deficit) for current year	
Estimate of net environmental assets (liabilities)	

Notes: The statement can be accompanied by the disclosure of minimum non-financial information, such as actual and ISO permissible standards of emissions, production and disposal of waste, depletion of natural resources and replacement (forestry), major capital projects that lead to deterioration of air and water quality and habitat and urbanization; weather changes in the identity of the polluting entity (mergers, unbundling, foreign listing, name change, bankruptcy and related opportunistic activities) as grounds for escaping environmental liability need to be examined, and may require international treaty; transitional arrangement (prior period of adjustment); net surplus (deficit) is arrived at after consideration of recurrent income and expenditure, such as interest and dividend incomes from environment-related investments, tax rebates and dues, recurrent expenditure on environmental protection, current charges for normal provisions for decommissioning and rehabilitation, past errors and omissions, current contribution to independent environmental rehabilitation fund and tax gains and losses arising from hedge activities on environment-related products, etc. The figure can be disaggregated for each reported segment as per IFRS 8

Source: Negash (2012, p. 589).

Yakhou and Dorweiler (2004) included environmental cost as environmental cost accounting that directly assesses costs for process and product. The arbitrary environmental overhead can be absorbed by the cost of manufacture and the real cost of the product can be determined. Yakhou and Dorweiler (2004) concurred with the idea and cited Lally (1998) on the framework of environmental cost that includes the cost to reduce and prevent the environmental impact. The cost to reduce environmental impact can be the first settlement of past approach in the provision for decommissioning, restoration and rehabilitation (contra-asset account in Table 2.2), while the cost to prevent environmental impact can be the current approach in the provision for decommissioning, restoration and rehabilitation (Negash, 2012).

The fundamental changes in accounting standards are based on the principles. Technically, IFRS consistently does not regulate EA (see Table 2.1). That is what has led to the emergence of various interpretations and various forms of EA standards used by different countries.

Standards used by countries for the implementation of environmental reporting are:

1. Global Reporting Initiative (GRI)
2. United Nations Framework on Climate Change (UNFCCC)

Other countries use their own standards, for example, the USA uses EPA, South Korea uses Environmental Cost Accounting Guidelines (ECA) and Europe uses Eco-Management and Audit Scheme (EMAS).

It is important for standard-setters, policy-makers or regulators to develop sustainable reporting and accounting standards to achieve high quality and comparable reporting

practices (Bewley, 2005; Hail et al., 2009). Comparability information arising from multiple reporting is treated in a separate section (Krisement, 1997). Even the adoption of a single set of accounting standards (IFRS) does not systematically ensure comparability of financial statements (Barbu et al., 2011; Negash, 2012). Therefore, environmental requirements may differ across countries because of differences in the national regulations on ED, and across firms because of differences in the reporting practices concerning environmental information (Barbu et al., 2011).

### **2.3.2.1 Global Reporting Initiative (GRI)**

The current guide commonly used for reporting the sustainability of the environment is the GRI, which is a NGO formed by global networking. Early in 2008, GRI recorded 507 organizational stakeholders in 55 countries. There are hundreds of private companies that have adopted the GRI guide for reporting performance. Organizations can disclose their sustainability performance using the GRI as a guide. Reporting guidelines are developed based on processes of seeking a consensus among all stakeholders, including global corporations, civil society, unions, academics and professional institutions. GRI's main goal is to make disclosure of environmental, social and governance performance of companies as the new mainstream in corporate reporting.

The Sustainability Reporting Guidelines developed by the GRI have entered into the fourth generation (G.4 Guidelines). In these guidelines, there are Performance Indicators and Management Disclosures that can be adopted by organizations as a voluntary, flexible and gradual disclosure to make an organization's sustainability transparent. The latest guidelines are the G4.1 Guidelines. These guidelines use G.4

Guidelines as the basis which expand the report to include the influence of the organization on the surrounding communities, human rights and gender.

There is a disclosure standard that must be present in the sustainability report compiled by the GRI. The information requested is material and relevant information for most organizations and stakeholders. Disclosure standards are divided into three groups:

1. **Strategies and Profiles:** The Company is required to reveal how the organization determines the strategy, sets the profile and applies good governance.
2. **Management Approach:** The Company is required to reveal the approach in response to a particular set of problems or issues to understand the context of performance.
3. **Performance indicators:** Indicators of achievement of the organization will provide information that could be compared. It consists of economic dimension, environmental dimension and social dimension (www.globalreporting.com).

### **2.3.2.2 United Nations Framework on Climate Change (UNFCCC)**

The 21 March 1994 Convention of Earth Summit in Rio de Janeiro set an overall guide for intergovernmental efforts to set a framework as a starting point to address climate change. The UNFCCC has more than 200 governmental members . They have three commitments, i.e:

1. gathering and sharing information on greenhouse gas emissions, national policies and best practices to measure and reduce it;

2. launching national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support for developing countries; and
3. cooperating in preparing to adapt to the impact of climate change.

Ever since the UNFCCC became effective, the parties have been meeting in the Conferences of the Parties (COP) to assess progress in dealing with climate change. The COP is seen as the supreme body of the Convention.

The UNFCCC focuses on the things that are the ultimate environmental issues related to the world. Currently, their focus is on the greenhouse effect. This focus is embodied in a protocol called the Kyoto Protocol.

### **2.3.3 Relevant Theories**

Both legitimacy theory and stakeholder theory are a function of perceived pressure on firms to shed light on environmental matters (Deegan, 2002; Freedman & Stagliano, 2004; Tilling, 2004; Eugenio, 2009).

#### **2.3.3.1 Legitimacy Theory**

Environments can endanger local and global communities' survival; this has forced governments to reform environmental regulations (Mccarthy, 2000). Based on statutory law, all parties are required to comply with it, including the business world. Therefore, the legitimacy theory is relevant to environmental activities in the business world (Kent & Stewart, 2008; Othman & Ameer, 2009; Peters & Romi, 2011; Mahadeo, Oogarah-Hanuman & Soobaroyen, 2011). Kent and Stewart (2008) examined the association between the level of disclosure and corporate governance



quality on Australian companies and found the quantity of disclosure was positively related to some aspects of superior corporate governance, such as the frequency of board and audit committee meetings and the choice of auditor, whereas legitimacy theories also provide explanations for variations in the level of corporate disclosure. Legitimacy theorists believe that business entities provide environmental information to show that they have been good stewards of the earth (Freedman & Stagliano, 2004). According to Tilling (2004), business entities are motivated to do this as a means of legitimization.

Campbell (2003) explained that industry response signifies different perceptions on the need for voluntary disclosure, and at the same time, to maintain legitimacy (notably by O'Dwyer, 2005). Thus, the occurrences in intra-sectorial or multi-national companies, at a particular point in time, provide a basis for the theory of legitimacy. More than one company has felt the necessity to change their counter-intuitive behavior toward voluntary disclosure in order to maintain legitimacy and counterproductive impact on their accountability (Elijido-Ten, 2004; Cho, 2007; Lungu et al., 2011). Regarding the relationship of disclosure to environmental interest, the legitimacy theory predicts that firms use disclosure as a means of legitimizing their operations (Elijido-Ten, 2004; Clarkson, & Overell et al., 2011).

Therefore, legitimacy gives necessary exposure to businesses for implementing EA (Cowan & Deegan, 2011). Mahadeo, Oogarah-Hanuman, and Soobaroyen (2011) assert that corporations maintain and restore their legitimacy through public relevance. To conform to the existing social expectations, adapting (not adopting) method or standard or operation is chosen regarding of the public acceptance of changing social

norms. Thus, the standard conforms to the existing corporate activities (Yakhou & Dorweiler, 2004). Mobus (2005) stated that legitimacy could help to internalize the social costs of organizational actions and to induce organizational compliance with regulatory regimes. Moreover, Mobus (2005) conveyed that mandatory accounting disclosure is a potential tool of public policy for governance of the commons in a social and political environment where public exposure for poor environmental performance (EP) is considered as an increasing the risk for the entity.

Legitimacy is viewed as a potential benefit or resource of the organization (Elijido-Ten, 2004) which is conferred by parties external to the entity (Esty, 1999; Lungu & Dascalu, 2010). Sometimes, the practice raises a difference between the values of the corporation and the values of the community, where the corporation operates at the time corporate legitimacy is threatened (Campbell & Beck, 2004; Clarkson, Overell & Chapple, 2011). The difference in values is the legitimacy gap (Brown & Fraser, 2006; Yusoff & Lehman, 2009) and may affect the continuance of the corporation's operations (Mobus, 2005; Othman & Ameer, 2009). Brown and Fraser (2006) suggested that whenever a legitimacy gap exists, the corporation would need to evaluate its social values and then align them with those held by the society in which it operates to avoid redistribution of wealth and power to non-shareholder constituencies. In addressing the legitimacy gap, corporations have to identify those activities that are within its control related to fair corporate accountability (Bewley, 2005; Brown & Fraser, 2006) and identify the relevant parties that have the power to provide the entity with legitimacy (Elijido-Ten, Kloot & Clarkson, 2010; Martinez, 2012). In maintaining legitimacy, corporations must keep abreast of the changing and differing values of the people (Elijido-Ten, Kloot & Clarkson, 2010). Corporations

might also need to adopt legitimate techniques to repair or defend their legitimacy through communication (Campbell & Beck, 2004).

From another perspective, sometimes, environmental regulations become tighter and various aspects of sustainability have to be internalized. Regulations regarding CO2 emission, in particular, have recently become stricter in many countries; thus, companies have no other choice but to address the issue (McKinsey, 2007). Although the importance of the topic is still increasing, some companies are only trying to comply with legal requirements to avoid fines or loss of license to operate (Barbu et al., 2011; Beck, Campbell & Shrivess, 2010). However, other companies are tied up in actively managing carbon emission beyond legal compliance (Rugman & Verbeke, 1998) for gaining a competitive advantage (Zhu, Zarkis & Geng, 2005).

Moreover, the two perspectives differ mainly on how corporate entities acquire legitimacy. The legitimacy theory focuses on the society to assess the validity of corporate actions to gain legitimacy (Elijido-ten et al., 2010). Surprisingly, legitimacy appears to play an important role in how Indonesia's chief executive officers (CEOs) view the importance of EA (Lindrianasari & Adriyanto, 2010; Andayani & Riduwan, 2011). Whilst there is nothing wrong in taking this view, sometimes, it is difficult to test it empirically. Researchers can use the legitimacy theory effectively to identify specific events that potentially threaten a firm's legitimacy (Mobus 2005), like the case of BP oil spill or Lapindo mud flood (Indonesia).

### **2.3.3.2 Stakeholder Theory**

The basic proposition of the stakeholder theory is that a firm's success depends on the successful management of all the relationships a firm has with its stakeholders. The

stakeholder theory offers a useful framework, given the increasing stakeholder involvement in the reporting process (Elijido-ten, 2004). Freeman et al. (2004) stated that today's economic realities underscore the stakeholder theory where people who voluntarily come together and cooperate to improve everyone's circumstance, create economic value. Nevertheless, the stakeholder theory is still a trivial issue to be examined in EA (Fraser & Brown, 2006). Furthermore, Brown and Fraser (2006) conveyed that accountability and stakeholder theory in EA have important implications for the social realities (trivial issue) on their conceptual framework. They had mixed the EA with social aspect for the reason belonging to the pluralist nature of community and the environment.

Companies must be able to build a relationship with stakeholders because it can extent the value of the company; Benoit-Moreau (2011) called the value as intrinsic value. In addition, they must be able to build interests of the shareholders as an important constituent and profit from this activity (Hook, Coy & Davey, 2004). Concern for profits is as a result rather than as a driver in the process of value creation. Yakhou and Dorweiler (2004) mentioned that an environmental manager is a key person in environmental management. There is a need for stewardship between a senior manager and environmental manager at the operational level to contrive the environmental policy.

It would be ideal for companies to take the initiative to promote environmentalism, but the reality is that companies are not likely to take this matter seriously every though when there is a demand of disclosure from their valued stakeholders. Hence, Elijido-

Ten, Kloot and Clarkson (2010) conveyed that the stakeholder theory is employed in literature as a legitimate strategy to help firms manage their stakeholders.

Paz-vega (2008) (in his dissertation) expressed that in the organization, the theory stands as the social behavior of the individual management that often struggles to take a position as a policy-maker in the form of environmental determinism versus strategic choice. Management is regarded as an agent for environmental-related issues (Yakhou & Dorweiler, 2004). Critical realists make a categorical distinction between human action and social structure (Jerrett et al., 2003; Paz-vega, 2008, p.24); or between people and the social system (Lungu et al., 2011; Setiawan & Hadi, 2007), and consider them as belonging to different strata of reality. Social structure and agency are independent variations (Paz-vega, 2008, p. 93-105); therefore, as independent factor can be influenced by each other, they can be out of phase with one another in time.

#### **2.3.4 The Substance of Environmental Accounts**

To understand the importance of the environment for humans and its link to related issues which arise in business, the International Union for Conservation of Nature or the IUCN (2010) determines that EA is a set of national data aggregates which link the environment to the economy and which has a long-run impact on both economic and environmental policy-making.

Considering the substance of EA in the financial structure, it is not an easy job to evaluate EA (Kang & Lin, 2011). People who participate in financial activities are only on a segmental or partial basis and belong to many organizations (Belkoui, 2004, p.132). They, who might be financial executives, accounting firm partners, analysts,

broker-dealers or on pension funds, university professors, government regulators and others, influence the policy-making with their own different interests (Belkoui, 2004, p.132). Jobstl and Hogg (2005) noted a special reference in financial accounts that is derived from accounting as prescribed by regulation or law, and then it becomes a legal obligation of accounting.

Kang and Lin (2011) described that the tendency of auditors to use the principle of substance over form is because they want to avoid the aggressiveness of reporting activity. It is associated with the risk of the field at the time of affirmation in which the more are the reports made by the auditor, the higher is the level of risk they face. The risk itself is primarily related to public policies and the items of report (Smith, 2003, p. 184).

Kothari, Ramanna, and Skinner (2010) asserted that there is a need for an initiative to scope more on enlightened format of disclosure and substance of accounts based on economic consequences. The initiative includes considering risk of "doing or not doing" as part of the responsibility of individuals and corporations. Initiatives are related to enhance profitability. Meanwhile, Firoz and Ansari (2010) mentioned that environmental liabilities can be accounted for according to their substance and economic causes. This is applicable to the environmental problems encountered by Indonesian firms (Setiawan & Hadi, 2007); they find a lack of government guidance on the environment. It gives rise to favorable legal loopholes as a chance to avoid disclosing environmental items as information data of the economic substance which is expected to provide a clear view of the consequences on the environment treatment.

#### **2.3.4.1 Determining Sustainable EA**

Burritt and Schaltegger (2012) revealed that sustainability accounting for EA is an important practice to capture the elements of the natural environment into accounting. Moreover, the social problems caused by negative environmental impact that should be determined (accountable) are not always sustainable (Gurtvitsh & Sidorova, 2012; Martinez, 2012). There is a need for its identification and classification. Lee (2011) and Martinez (2012) expressed that a company must have guidelines for measuring and reporting environmental cost with noticeable benefit.

Farouk, Cherian, and Jacob (2012) criticized that many kinds of literature consider sustainability on EA without persevering performance measurement in accounting system that should be settled by the organization. Furthermore, Negash (2012) noted that the indices produced from EA are related to the credibility gained from the published sustainability disclosure. Markandya and Tambora (2005) emphasized on sustainability norms in which environmental cost is inclusive of specific environmental standards. The reason for this approach is to ensure the pertinence of various conditions of the economy from time to time.

Progressively, sustainability brings innovation to the pursuit of strategies of wealthy business goals and competitive position in the market in the long-term. Innovation in sustainable term is part of a strategy to achieve long-term prosperity (Jerrett et al., 2003). Mahadeo, Oogarah-Hanuman and Soobaroyen (2011) stated that the syncretism between sustainability reporting and TBL is derived from the west; Asian countries face uncertain future development of environmental interaction and will not withstand the use of environmental and natural assets which support most of their

national economy (also established by McCarthy & Zen, 2010; Warr & Yusup, 2011). Nevertheless, the sustainability for EA requires independent verification in annual reports or management support reports (Othman & Ameer, 2009).

#### **2.3.4.2 Environmental and Social Accounting Precincts in Practice**

There are some overlaps between the objectives of environmental and social accounting. There are more conflicts here than generally recognized (Smith et al., 2007). Most reports tend to contain elements of both objectives (Deegan, 2002). The confusion between social and environmental perspectives is due to the socio-psychological aspects of external factors, often called 'externalities' (Farouk et al., 2012; Santos, 2012).

Before applying EA, there is a deep need to understand the establishment of its elements and parameters so that companies can report and analyze its effects on the company (Farouk et al., 2012; Firoz & Ansari, 2010; Negash, 2012). The report is used by investors and other external stakeholders as a financial prospectus, and also for other information (Clarkson, & Overell et al., 2011).

Practicing EA requires guidelines that will help the reader to assess the completeness of a report based on the set objectives (Dwyer, 2001). There require to identify EA objects. Thus, Merlo (1997) distinguished between EA and social accounting based on the nature and objects in accounting terms. Social accounting object refers to the achievement of the performance of the human and its nature (Jobstl, 2005). In the current scenario, the scope of social accounting is related to the quality of life and welfare of human resources (Othman & Ameer, 2009). Usually, it consists of a social report, value added statement and social balance sheet (Jobstl & Hogg, 2005; Mook &



Quarter, 2006). Social accounting applies and is closely tied to a business in a regressive role to the economic base of society (O'Dwyer, 2005).

Benoit-moreau (2011) expressed that EA differs from CSR, and could be determined from the typology of customers' claim efficacy. The typology of environmental aspects are presented as a second attribute after CSR (Clarkson, & Overell et al., 2011; Siregar & Bactiar, 2011); otherwise, consumers will perceive the assimilation by the words used in advertisements, when a green product does not have good performance (Pickett-Baker & Ozaki, 2008). When that happens, the environmental attributes became the main claim (Benoit-moreau, 2011).

Consistent with Laughlin (1999) that stated about societal and EA as a two-way traffic. Yakhou & Dorweiler (2004) stated that the role of EA and environmental issues are fundamental to human survival. Yusoff & Lehman (2009) emphasized on the semiotic definition that the word, "environment", is often interpreted as something green and related to nature.

The objects of EA are natural resources that are used by the enterprise or business and convinced on obsolete waste products and forest reservation by the wood industry (Clarkson et al., 2011). Though, in EA reports revealed the companies use the natural environment as a provider of environmental goods (material and energy flows of all kinds), and a receiver of companies' pollution or undesired outputs (Merlo, 1997; Earnhart & Lizal, 2010).

As a part of economic data, EA is often grouped under social accounting (Brown & Fraser, 2006; Siregar & Bactiar, 2011). This is because the two concepts have the same

goal, namely to internalize externalities (social and ecological environment) of both positive and negative economic impacts into a company's financial statements (Kothari et al., 2010). Brown and Fraser (2006), Othman and Ameer (2009), Webb et.al (2008), and Hirschey (2001) suggested that social and environmental accounting should produce similar result on social marketing reputation and good relations with employees, which ultimately will provide additional wealth. Martinez (2012) described syncretism as a term that is used to translate an idea into divergent objectives (social and environmental-related). Therefore, it is necessary to lay more emphasis on the shift to a broader array of social concerns which are treated as social accounting and EA.

Many countries have applied accounting standards without specifically stating anything on EA in their reporting or only offer a little information (Brown & Fraser, 2006), even though the environmental aspects can be understand more deeply (Boyd, 1998). Conceptual frameworks and standardized clauses initiate the evaluation, measurement and disclosure as elements of the accounting report on environmental matter. This becomes an issue for discussion (Boyd, 1998, p.22; Hook, Coy & Davey, 2004; Peters & Romi, 2011).

There is no explicit support for the technical definition that distinguishes the main outcome of environmental reporting (in general) from EA. The environmental report, in general, refers to company activities that are related to environmental improvement efforts (Clarkson, Overell & Chapple, 2011; Govindarajulu & Daily, 2004). Besides, EA also refers to the reporting of assets and liabilities that arise as the consequence of

activities or policies chosen by companies related to the environment (Burritt & Schaltegger, 2012; Jobstl & Hogg, 2005; Negash, 2012).

In a ten-year perspective on positive accounting theory, Kothari, Ramanna & Skinner (2010) reviewed literature that explains accounting as an association of social, political, economic and environmental contracts, in which individuals rationally make decisions based on their own self-interests. The positive accounting theory has generated a lot of empirical research by providing evidence that supports the understanding of actual managerial behavior in judgment choices. The prospect theory adds a psychological or behavioral element to the positive accounting decision-making theory. Wilkins (2010) pointed in the empirical research that supports the positive accounting theory; researchers observe that individuals may not always act in a rational manner based on known information, particularly when there is uncertainty in outcomes.

The outcomes are a nexus of accounting for any costs and benefits arising from the changes of a firm's products or processes that also involve changes in environmental impact. As discussed later, improvement of accounting for non-environmental costs and benefits, input costs, consumer demand, etc. could lead to changes in decision-making that have environmental consequences. Thus, there is a need to identify demarcation definition between environmental accounting and the general accounting practices (Boyd, 2008).

In financial accounting (accounting as prescribed by accounting regulation), special references are made to fulfill the legal obligations of accounting. The legal aspect in

EA-related accounts set by various external stakeholders needs to be applicable in accordance with the interests of management (Roxas & Chadee, 2012).

#### **2.4 Environmental Accounting Practices in Indonesia**

Many countries prefer to use the voluntary system to report environmental information (Yusoff & Lehman, 2009). There is this belief that it can give flexibility to the incorporation of evolving complexities of environmental activities (Berger, 2011).

Indonesia generally still prepares EA (CSR) on a voluntary basis; this has resulted in firms disclosing different items using diverse disclosure forms (McCarty & Zen, 2010). Consequently, it becomes difficult to compare social activities among firms (Siregar & Bachtiar, 2010). Even so, the practices still use the combination of reporting on social and environmental information (Gumilang et.al, 2011). It is found in companies that the disclosure of environmental features score a lower ratio than the other features in CSR reporting (Nuraini, 2010, p.35; Siregar & Bachtiar, 2010); it means it has a lower level of awareness about the importance of information on environmental activity in corporations (Mobus, 2005; Berger, 2011).

Siregar and Bachtiar (2010) revealed Indonesian firms' lack of awareness of environmental issues, which have caused many national-level tragedies. For instance the Teluk Buyat or Buyat Bay case, when PT Newmont Minahasa Raya (NMR) began to dispose of all waste water through the pipe into Buyat Bay. This caused health problems for citizens living in the surrounding areas. Another case is the Lapindo case of mud floods covering a huge area in Sidoarjo. This forced thousands of people living in that area to evacuate due to uncontrolled drilling of oil by PT Lapindo Brantas.

These incidents have had a negative impact on the companies, such as decline in market-share value (Markandya & Tambora, 2005); paying the fine for the environmental damage they caused (Markandya & Tambora, 2005; Wood & Ross, 2006); facing the community's anger (Cho, 2007) and losing the trust of investors (PRI, 2010).

In response to this, the Indonesian government gradually completed its product regulations without much information or discussion relating to EA as one of the terms or special environmental assessment systems in Indonesia (Anggraini, 2006). Andayani and Riduan (2011) revealed that Indonesia does not have accounting standards yet to guide organizations on reporting and measuring environmental-related issues. Aulia (2011) as cited by Nurhayati, Brown, and Tower (2006), said that the disclosure of environmental issues in the financial report of corporations in Indonesia is still very low. This statement is strengthened by the findings of Suhardjanto (2008) that the level of environmental disclosure practices in Indonesia is only 53.75%. It means that half of the companies listed on the Stock Exchange have reported their environmental activities, but only about 10% have monetized environmental conservation, in addition to the financial statements or notes to the annual financial report (Suaryana, 2011; Ariesanti, 2012).

Wiyantoro et al. (2011) also found evidence of a wide audit expectation gap in Indonesia in concepts, measurement and disclosure of EA. Furthermore, Warr and Joseph's (2011) study reveals the difficulties in measuring EP due to the absence of a social accounting matrix (SAM) data. This is the consequence of the absence of effective cross-sectorial coordination and anticipatory principles found in spatial

planning and environmental assessment procedures by the regulator (McCarthy & Zen, 2010).

A cross-sectorial coordination in Indonesia about environmental reporting is still at an immature level. A bold step was initiated by the Ministry of Environment and Bank Indonesia (BI) in the memorandum of understanding (MoU) between the Ministry of Environment (KLHK) and BI (Central Bank of the Republic of Indonesia) in 2005. This agreement is a follow-up and a back-up for BI Regulation number 7/2/PBI/2005 on the rank determination of the quality of assets for commercial banks. The regulation sets a credit to productive assets, including the capacity of credit. Environmental aspects are a factor in the credit assessment. BI agreed to accept PROPER (the rating institution of the company's performance in Environmental Management)-KLHK in assessing credit worthiness (Tempo Interactive, 8 April 2005).

PROPER relates to the environment. It is an annual program of the Ministry of Environment and Forestry for the assessment of corporate responsibility to the environment. Environmental impact that can affect the determination of the credit quality of the company and the feasibility of the company are looked into by this initiative. PROPER is stipulated in the Decree of the Minister of Environment and Forestry (KLHK) No. 27/MenLH/2002. For instance, banks are expected to give lower credit terms to corporations (as a customer) except those rated with low and poor environmental performance (EP) (Ariesanti, 2012).

PROPER-KLHK provides a provision in the ISO system (Organization for Economic Co-operation and Development, 2007). ISO systems allow corporations that are committed to subsequently improve their EP by awarding them the ISO certification

(National conference on environmental management of green strategy - the passport to facing global competition, menlh.go.id, 2006).

Another cross-sectorial ministerial is KLHK and the Indonesian High Court (the issuance of the Law of the Republic of Indonesia No.32 Year 2009) which establishes the application of minimum criminal penalty in addition to the maximum penalty. In the event of a crime due to pollution and environmental destruction, the penalty is imprisonment for a minimum of three years or a fine of five billion rupiahs (KLHK, 2009). The law is a platform for the government to order a factory or a corporation to comply or close down (Setiawan & Hadi, 2007). It is enough to give legitimacy to the business and professional accountants in Indonesia to implement EA.

Unfortunately, Indonesia currently has no a cross-sectorial coordination between accounting standard setting agencies and the environmental regulator (KLHK) about EA related matters (McCarty & Zen, 2010; Setiawan & Hadi, 2007). Moreover, McCarty and Zen (2010) stated that regulatory enforcement in Indonesia has yet to ensure effective compliance. Conversely, the IUCN (2010) reports that Indonesia is a pioneering country for calculating and integrating forest depletion into the GDP, which is known as green GDP. This is a bold effort, using parameters of the World Resources Institute (WRI), to get the attention of both economists and environmentalists to the necessity of changing this aspect of the Social National Account (SNA). Since then, the Indonesian government has been exploring options for establishing its own system of EA. Instead of the Indonesian government setting a comprehensive and thorough legal framework that provides the details, prescriptive form of bureaucratic regulation is under command and control. Indeed in practices,

internal management is relatively unaware of the substantial mistake in operational business which can lead to a factory being closed down for infringing these laws (Setiawan & Hadi, 2007).

Catasus (2008) noted that the EA standard is within the GAAP framework, as a way to legitimate its activities in the financial system. Absenteeism of accounting is often associated with the prevalence of conservatism (Negash, 2012; Berger, 2011). Conservatism emphasizes concentrating on the extent to which the accounting system is within that framework, where economic losses could be recognized on a timely basis (Holthausen, 2003). The prevalent characteristic of accounting information is conservatism for a higher degree of verification for gains than for losses (Beyer, Cohen & Lys et al., 2010).

Indonesia emphasizes on the process of convergence rather than adoption. Not all IFRS standards can be adopted by Indonesian GAAP. The global convergence of reporting practices have different ways to apply IFRS; it is related to a national convergence process which is influenced by the mass media, citizens, governance policy, cultural values, financial market and capital mobility (Horton et al., 2010, p.3). Due to this, the standard-setter has chosen the convergence process rather than full adoption (Kolk, 2005).

The IFRS (2011) in the Interpretation and Application section, i.e., IFRIC 5 on Rights to Interests Arising from Decommissioning, Restoration and Environmental Rehabilitation Funds, contains a series of vague sentences (Kang & Lin, 2011). Under IFRIC 5 is IAS 27 Consolidated and Separate Financial Statements, SIC 12 Consolidation - Special Purpose Entities, IAS 28 Investments in Associates and IAS



31 Interests in Joint Ventures, to determine whether decommissioning funds, are proportionately consolidated or accounted for under the equity method. IFRIC 5 is also mentioned in IAS 37 and IAS 39, relating to how to recognize and measure the accounts of non-financial companies, how companies use it to meet the costs of decommissioning or environmental rehabilitation (notably in Table 2.1).

Hence, Indonesia GAAP (The Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) has few references to EA. They are:

1. The Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) 1 (para. 12) provides a description of the presentation of the environmental impact as follows.

"The company should present additional environmental reports on the environment (or value added), especially in industries with key resources related to the environment (or employees and other stakeholders as users). The additional reporting is beyond the scope of Financial Accounting Standards."

2. The Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) 57 states the aims to regulate the recognition and measurement of provisions, contingent liabilities and contingent assets and to ensure that sufficient information is disclosed in the notes to the financial statements. It states that:

"Example for this obligation is a fine or cost recovery of environmental pollution, resulting in an outflow of resources to complete those obligations regardless of how the entity acts in the future. Similarly, the entity recognizes

the estimated liability for the costs of decommissioning oil installations or nuclear installations, limited to the amount to be borne by the entity to repair the damage caused”.

Thus, these weak regulations under the EA guideline, make it open for criticism in Indonesia, which the reduction emissions become a prestigious targets of the government achievable by 2020 (McCarty & Zen, 2010). Indonesia still has minimal understanding of and conformity to the principles and standards on EA (compared to IFRS - see Table 2.1); this leads to neglect of environmental activities by businesses (McCarty & Zen, 2010). Ariessanti (2012) stated that although there are regulations for environmental liabilities in Indonesia, the regulations allow voluntary environmental disclosure. Thus, a company will disclose it in the financial statements if the environmental information gives a positive image for the company.

Andayani and Riduan (2011) found in their multiple case study on three companies in Surabaya that all are concerned with EA (using Global Environmental Management Initiative score), but still face the problem of internalizing environmental cost in their annual report. Suryono and Prastiwi (2011) stated that the sustainability report (relating to social and environmental disclosure) in Indonesia depends on governance and company characteristics, like company size, but not correlated with liquidity performance (financial performance). Conversely, Febrina and Suaryana (2011) found that the sustainability report of Indonesian listed companies does not depend on governance and company characteristics, but is correlated to company size. This research shown the internal factors that have an association with environmental-related sustainability report but the results are still ambiguous.

EA in Indonesia also encounters difficulties when measuring the cost and benefit of environmental activities in the company (Andayani & Riduan, 2011). While under Financial Accounting Standards, the measurement of the company's activities should be in monetary terms, but the accounting, financial and capital investment systems do not identify and quantify environmental costs (Ariesanti, 2012; Jones & Solomon, 2013).

#### **2.4.1 Performance Measurement EA under Limitation Standard**

Gumilang, Mukhopadhyay and Thomassin (2011) examined the relationship among environmental impact, economic impact and liberalization trading; stata-statistic regression or descriptive analysis on nine regions (include Indonesia) macroeconomic variable estimates and six physical indicators of environmental impact in Indonesia; the results indicates that the tariff reduction has varying impacts on the different pollution indicators under different scenarios and towards trade liberalization among developing nations has increased the concern that it will have a negative impact on the environment, especially given the lack of environmental standard in most of these countries (including Indonesia). International pressure does not so influence to environmental policy in Indonesia as found by Gumilang et al. (2011). Indonesia's participation in ASEAN free trade area (AFTA) and Indonesia-Japan economic partnership agreement (IJEPA) as part of its trade policy is unlikely to have a huge impact both economically and environmentally. The lack of environmental standard is related to structure of EA accounts as well.

According to Lange (2003), costs can be classified into two sources, namely: conventional costs and environmental costs. Jobstl and Hogg (2005) stated that

conventional costs generally do not take environmental costs into account, even if the costs are clearly revealed, such as land acquisition, equipment and machinery, construction costs, installation of equipment and machinery costs, operational cost, procurement of raw materials, labor, sales, administration, maintenance, and research and development costs (also cited by Lee, 2011; Farouk, Cherian & Jacob, 2012).

Environmental costs are closely related to the environment or nature (Yusoff & Lehman, 2009). Hidden costs can be counted and recorded as environmental costs and the expenses should not be included in conventional accounting. Environmental costs consist of land degradation costs, environmental pollution costs (waste disposal or neutralization of chemicals used in water) (Markandya & Tambora, 2005); depletion of water costs, recycling costs, fines, interest and damage charges due to environmental damage (Clarkson, & Overell et al., 2011); costs of forest reservation and the loss of flora and fauna (Jones & Solomon, 2013).

Merlo, and Jobstl and Hogg (2005) mentioned the specific cost centers where each type of environmental expenditure should be grouped, for instance, future expenses for restoration, meeting more stringent legislation or to prevent future environmental damage, as well as the imputed costs necessary to provide environmental goods and services. Rugman and Verbeke (1998) stressed that many companies are alleged of committing environmental malpractices because the free market environmentalism sets narrow rules for them. An example is the refrigerator manufacturers that have been forced to avoid chlorofluorocarbon or CFC in their products; as a practice, the company calculates and reports product innovation as environmental goods.

Environmental allowance, known as D1 Emissions Right, was issued by the International Financial Reporting Interpretations Committee (IFRIC) No.3 before it was repealed in 2005 and replaced by IFRIC No.5. This international accounting standard had not been convergence to Indonesian GAAP. It covered four key questions regarding emission treatment in accounting:

1. Does an emission allowance scheme give rise to a net asset or liability or an asset (for allowances held) and a liability, a deferred income and/or an income?
2. If a separate asset is recognized, what is the nature of that asset? Is it inventory? Is it an intangible asset? Or is it a government grant?
3. If a separate liability, deferred income, and/or income are recognized, what is the nature of that item and how is the measurement?
4. When should a potential penalty for failure to deliver sufficient allowances to cover actual emissions by a participant be recognized? In addition, what will be the measurement?

After considering a number of alternative treatments, IFRIC 3 proposed that emissions trading schemes give rise to the following consequences:

1. An asset for allowances held: Emission allowances, whether allocated by the government or purchased in the market, are intangible assets and would be accounted in accordance with IAS 38, Intangible Assets. Allowances that are allocated for less than fair value shall be measured initially at their fair value. Allowances shall not be amortized but may be impaired.
2. Government grant: When the allowances allocated by the government for less than fair value, the difference between the amount paid and fair value is

government grant that shall be accounted for in accordance with IAS 20, Government Grants and Disclosure of Government Assistance. Accordingly, the grant is initially recognized as deferred income on the balance sheet and subsequently recognized as income on a systematic basis over the compliance period for which the allowances were allocated.

3. A liability for the obligation to deliver allowances equal to emissions: As an emission is made, a provision is recognized for the obligation to deliver allowances to cover those emissions (or to pay a penalty). The provision is accounted for under IAS 37, Provisions, Contingent Liabilities and Contingent Assets. The liability shall be measured at the best estimate of the expenditure required to settle the present obligation at the balance sheet date. This will normally be the present market price of the number of allowances required to cover emissions made up to the balance sheet date if the organization/participant's best estimate is some of, or the entire, obligation.

Ho and Shun Wong (2001) stressed that corporate governance has not totally resolved or redeemed the conflict of viewpoints on the impact of environmental problems because environmental matters are rarely mentioned in the statement of the chairman or CEO (Beck, Campbell & Shrives, 2010). Measuring voluntary disclosure through the disclosure index gives several potential threats and limitation of evaluation, as the very items to be indexed depend on company size (Eng & Mak, 2003; Ho & Shun Wong, 2001; Cheng Chee Mun, Courtenay & Rahman, 2011; Clarkson, & Overall et al., 2011; Siregar & Bachtiar, 2010; Webb, Cahan & Sun, 2008).

Mobus (2005) criticized that the content in voluntary environmental performance (EP) standards and reporting represent elaborate greenwash practices, which largely measure the performance of a company, industry or business by using an intricate of substance over form or form of outcome-based substance in accounting terms. Mobus (2005) stated that mandatory accounting disclosure provides information on EP that can inform public sentiment, help to internalize the social costs of organizational actions and induce organizational compliance with regulatory regimes (Wood & Ross, 2006).

Webb, Chan, and Sun (2008) revealed that in a social and political environment where public exposure is weak, environmental performance (EP) would increase the risk for the entity. Accounting disclosures can reveal departures of organizational actions from the norms of expected behavior. Mobus (2005) mentioned that mandatory accounting disclosure is a potential tool of public policy for governance of the commons. Conversely, the mandatory approach tends to make the environmental information to be more external than internal because of the long-term misconception of functional pressure that is experienced by corporate entities (Ball, 2005). The flexibility approach avoids environmental risk by considering the company strategy and capital structure (Saedy & Kazemipour, 2011). The flexibility provides sufficient evolving complexity principle and standard of EA to be incorporated without the need for changes in the regulations (Berger, 2011).

Implementing a new standard requires consideration of efficiency (Gelb, Holtzman & Mest, 2008; Blanco, Rey-Maqueira & Lozano, 2009). Efficiency makes it easy for regulators and companies to apply sustainability (Markandya & Tambora, 2005).

Applying a new standard properly also requires cost and time (Blanco et al, 2009); so, the alternative is to adopt the existing standard. Nevertheless, the adoption of a standard also needs to pay attention to local conditions, such as public policy, social and semiotic-interpretive in order to avoid practical ambiguity (Abd-Elsalam & Weetman, 2003; Setiawan & Hadi, 2007; Warr & Yusuf, 2011; Yusoff & Lehman, 2009; Fleischman & Schuele, 2006). There are several main challenges faced by a company and auditor when adopting a new standard. The auditor would face the risk of assessment, methodology approach to assessment, assessment procedures, documentation and cost (Harto, 2010; Wüstemann & Wüstemann, 2010; Farouk, Cherian & Jacob, 2012; McCarthy & Zen, 2010; Love & Eickemeyer, 2009; Mccarthy & Zen, 2010; Blanco, Rey-Maqueira & Lozano, 2009; Byard, Li & Yu, 2011). Similarly, human resources have to face challenges of knowledge, skill, judgment and attitude (Govindarajulu & Daily, 2004; O'Dwyer, 2000; Jones, 2003; Trotman, Tan & Ang, 2011; Alexander & Jermakowicz, 2006; Adelopo, 2011).

As stated by Harto (2010), a company's challenges from the socio-economic aspects are organizational arrangements, human resources, methods and social factors. If the challenges do not become a barrier for management and auditor's effort, it is necessary to develop a strategy before fully applying the adoption of IFRS in the application of EA.

#### **2.4.2 Environmental Disclosure Format**

Suhardjanto and Miranti (2008) examined relationship between company characteristics and environmental disclosure (ED); using Indonesian Environmental Reporting (IER) Index to the annual report of 80 selected listed company in the Capital



Market Reference Center at the Indonesian Stock Exchange. Suharjanto and Miranti (2008) used the indexes method that adopted from Eng dan Mak (2003) which the index is applied in Singapore. They found that board size, company size, regional operations of firm and leverage level did not influence on level of environmental disclosure (ED), but profitability level has influential to ED which only 4.35% company disclosed the environmental aspect. Suhardjanto and Miranti (2008) do not mention how and what part of firm profit can explain to ED.

Conversely results showed by Siregar and Bachtiar (2010). Siregar and Bachtiar (2010) examined relation among company size, board size, fundamental financial analysis to corporate social reporting and relation to future firm performance; they used modelling test and content analysis on annual report of 87 listed company in Indonesia stock exchange by emerged on phrase “corporate social responsibility”. They found company and board size have relationship with corporate social reporting, but fundamental financial analyses have not, then the relationship between CSR and future firms performance revealed the environmental disclosure especially related to energy disclosure has more consistent positive affect on stock return. They use content approach only emerged from one phrase which did not specifically mention to what and how companies report firm’s expenditure related to social and environmental aspect.

Disclosure of EA information is a key process in accountability (Bewley, 2005; Brown & Fraser, 2006; Firoz & Ansari, 2010). Akbar, Pilcher and Perrin (2012) examined on two pivotal aspects in the public sector – accountability and performance measurement, in further concept is relationship four organizational factors (metric

difficulties, technical knowledge, management commitment, and legislative requirements) to the development of performance indicators; surveys to senior finance officers; 457 local governments in Indonesia. Akbar et al. (2012) found that the metric difficulties have a negative association with the use of performance indicators. It comes to the questions about how indicators were developed and why indicators are only used for formal reporting (legislative requirements). Their further findings revealed managerial using indicators positively associated with legislative mandates, but that was not the case for higher level (headquarters level) use. It supported their findings about accountability influences that organizational capacity had a strong relationship (central government, parliaments and citizens) with external accountability but not with internal accountability. It is resemble of legitimacy conditions on public sector level which should give properly example of good corporate governance practices. Consequently, EA helps companies and other organizations to enhance public trust and confidence, which are associated with receiving a fair assessment (EPA, 2005).

Emphasizing the terms of reporting and disclosure refer more to firms' practices than a standard financial statements that governs it (Hail, Leus, & Wysocky, 2009). Hence, the statement raises different assumptions and references. For instance, under IAS 1 about Presentation of Financial Statements can be found in the Indonesian Statement Of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) (Indonesian GAAP) No.1-Revision 2009 about Reporting Financial Statements, it can be seen there that the statement does not explicitly mention that the environmental expenditure should be reported as reimbursement or

liability in comprehensive financial statements which related to IFRIC 5 (see Table 2.1).

Many researchers have emphasized on environmental reporting when they discuss EA (Gray, 2002). Lindrianasari and Adriyanto (2010) examined relationship between managerial perception and environmental accounting disclosure; data collected by mail surveys design which analysis used for testing was simple regression test on the annual report of 500 listed companies in the Capital Market Reference Center at the Indonesian Stock Exchange. Lindrianasari and Adriyanto (2010) found the content of the annual report prepared by corporate managers is deeply influenced by perceptions of the manager. They adopted the perceptions items from Jaggi and Zhao (1996) whose conducted to managers from China's firm and also from Deegan (2002) whose conducted to managers from Australia's firm that may have different culture and corporate governance (Haniffa & Cook, 2005) with Indonesia. In determining the quality of disclosure, Lindrianasari and Adriyanto (2010) conveyed that justification subjectivity factor is affected by corporate activity which they do not understand.

Thus, many countries have applied environmental reporting without specifically stating anything on EA (Brown & Fraser, 2006). Zhu, Zarkis, and Geng (2005) insisted on reporting the environmental performance (EP) of green supply chain management (GSCM), which is divided into three sections, namely: environmental performance (EP), operational performance and EcP. Furthermore, Negash (2012) explored the environmental perspectives on IFRS through EA practices and found that a clearer and mandatory standard is necessary to achieve market reputation. The standardized conceptual frameworks consist of valuation, measurement and disclosure

of elements of accounting report on environmental matters (Bromwich, Macve & Sunder, 2010; Lange, 2003; Firoz & Ansari, 2010; Negash, 2012). Further, Bromwich, Macve and Sunder (2010) set a conceptual framework based on theories of Hicksian income equation, but it do not related to EA account. It becomes discussion topics in environmental reporting (Hook, Coy & Davey, 2004; Peters & Romi, 2011). Govindarajulu and Daily (2004) asserted that companies should be well-known how to value EP under the current performance evaluation system.

There is no explicit support for technical definitions that distinguish environmental reporting from environmental disclosures (ED). The environmental report refers to company's activities to improve the environment through environmental management programs (Delmas & Toffel, 2003; Ienciu, 2012). The content of the report may vary each year, depending on the corporation's needs without a legitimate standard (Kolk, 2005; Lungu et al, 2011; Mccarthy & Zen, 2010).

Herein, the data should be shown in the disclosure of EA as the key elements in an environmental reporting that will enable stakeholders to utilize and understand the information about the company's stance on environmental conservation and how it specifically deals with business continuity (Yakhou & Dorweiler, 2004; Machado et al., 2011; Negash, 2012, Bicalho, 2012). Meanwhile, Bewley (2005) found that investors use ED to differentiate one company from another company, gain a signal of financial information on the company's future and enhance brand imagery through ecological association (Benoit-moreau, 2011; Raska & Shaw, 2012). O'Dwyer (2005) stated that level of stakeholder democracy has placed a great responsibility on organizations because a successful stakeholder democracy is based on stakeholders'

ability to hold organizations accountable for decisions impacting on their welfare (also noted by Everett, 2004; Brown & Fraser, 2006).

Relating to timeframe of ex-ante and ex-post data in disclosure, Beyer, Cohen, Lys, and Walther (2010) examined the impact of a new standard on the information content of earnings as some of the disclosures of US listed companies from 1994 to 2007 revealed that the ex-ante and ex-post demands for accounting information may not always result in the information being voluntarily supplied.

ED has some guidelines on the contents to report. Burritt, Schaltegger, and Zvezdov (2011) highlighted several categories. The first category is corporations that manage carbon emission by investing in energy-saving to cut-off cost and achieve a market advantage by green labeling for getting a good image (Berger, 2010; Benoit-moreau, 2011; Raska & Shaw, 2012). The second is corporations that engage in carbon management as the pressure on industry to provide information on their emission and reduce these emissions as an act of environmental commitment (Negash, 2012). From this, we can deduce that there is a difference in approach because each company has a different motivation and interest towards EA and reporting. Burrit et.al (2011) emphasized what works well for one company may be of little use to another, or in other words, not worth the effort invested or engaging in applying EA and reporting. This indicates the tentency of companies to avoid this activity.

Research has demonstrated how a company's disclosure practices are influenced by a host of internal organization and external environmental factors, such as firm size (Smith et al., 2007; Mahadeo et al., 2011); and market uncertainty, technology, culture, stock market listing and corporate governance (Elsayed &Hoqueb, 2010). ED contains

a segregated section within the annual report commonly titled, 'the environment' (Beck, Campbell & Shrives, 2010).

Besides that, EA is based on analyzing environmental cost information, assets and liabilities arising as a consequence of activities or policies chosen by corporations about environmental issues, which then are disclosed in the financial annual report. Yakhou and Dorweiler (2004) and Burritt and Schaltegger (2012) stated that EA includes the application of techniques and procedures to support management for making decisions, performance measurement, recognition and reporting of liabilities and contingencies, capital market reactions to accounting disclosures and taxes.

Meanwhile, Lindrianasari and Adriyanto (2007) and Ariesanti (2011) found that the average corporations in Indonesia that pay attention to conservation scored 1.89 (from a score of 1 to 3) only. It can be concluded that less than 50% of Indonesian corporations listed on the Stock Exchange voluntarily allocate funds for environmental conservation. The content of reporting is limited to allocating the cost of environmental conservation (compared to Suhardjanto's (2008) results of about 53.75%). About 90% could not reveal how much they contributed to the environment and only about 10% included the monetary amount of environmental conservation in the financial statements (Suaryana, 2011). This means that the disclosure uses more of a qualitative methodology than quantitative. The qualitative methodology is preferred by corporations in Indonesia and is an indication of weak regulation to support EA (Webb et.al, 2008; Mccarty & Zen, 2010). Siregar and Bachtiar (2010) noted that boards of directors in many Indonesian companies are more concerned with

the length of disclosure or qualitative methodology, while boards of commissioners are more concerned with items to be disclosed or quantified data.

Almilia and Wijayanto (2007) and Nuraini (2010) measured environmental performance (EP) using the PROPER-KLHK ratification, but with different scale of 1 to 5 and 1 to 7, and have different results. Lindrianasari and Adriyanto (2010) also measured EP using control variables, such as size, export, margin, age and risk, to find a significant correlation with manager's perception about ED. Almilia and Wijayanto (2007) measured the ED variable using the proportion of disclosures made by the company and the disclosure requirement by Indonesian GAAP (The Indonesian Statement Of Financial Accounting Standards (Pernyataan Standard Akuntansi Keuangan/PSAK) 32 about forestry accounting and PSAK 33 about mining accounting), but it has a limitation after PSAK 32 was repealed on 1 January 2010 from the Indonesian GAAP. All measurements were not related to environmental aspects (Ariesanti, 2012). Uncertainties related to a measure of both EP and ED affects EcP measures and efficiency of practices (Jones & Solomon, 2013).

#### **2.4.3 State-Owned Enterprises (SOEs) in Indonesia**

State-owned enterprises (SOEs) in Indonesia are divided into three types based on Law No. 19 Year 2003 as *Perseroan Terbatas* (limited-liability company/P.T.), *Perusahaan Umum* (public sector company/Perum) and *Perusahaan Jawatan* (public sector company/Perjan). Of the three types of companies, only *Perseroan Terbatas* (P.T.) is treated the same as private companies and multinationals (operating in Indonesia) with regard to environmental regulations and accounting regulations. Sokarina (2011) suggests that State-Owned Enterprises-*Perusahaan Terbatas* (SOE-

PT) can be changed to private company by law. The privatization of SOE-PT is part of listed procedure and limited under law. Hence, there two kinds of SOE-PT are *Perusahaan Terbatas Terbuka* (PT-Tbk) as listed status (listed in Indonesia Stock Exchange), and *Perusahaan Terbatas Pesero* (PT-Pesero) as not the listed company.

Besides generating profit (profit function), SOE-P.T. has social function based on Law No.14 Year 2008 regarding public disclosure requiring SOE-P.T. to open access for public to offer the information needed. State-Owned Enterprises-*Perusahaan Terbatas* (SOE-P.T.) is a business entity that acts as per commercial law. In most instances, business entities are formed to sell products or services; however, business entities also exist to perform charitable acts or other allowable activities.

#### **2.4.3.1 Legitimacy Policy and Legality**

Merdekawati and Arsjah (2011) conveying on their quantitative research on 700 yearly data from Indonesian listed companies (P.T.) found that legitimacy power of limited-liability companies (Perseroan Terbatas/P.T.) in Indonesia depends on the structure of ownership. Generally, the organizational structure of a limited-liability company consists of shareholders, directors and commissioners. In State-Owned Enterprises-*Perusahaan Terbatas* (SOE-P.T.), the shareholders, through the trustees, delegate authority to the directors to run and develop the company in accordance with the objectives of corporate business.

In accordance with Article 14 of Law No. 1 of 1995 on Limited Liability clause (1), changes in the Articles of Association set by the General Meeting of Shareholders (GMS), and the proposal for the amendment is set out in the summons or notice to convene the GMS. State-Owned Enterprises or Regional-Owned Enterprises in the



form of limited liability companies (P.T.) are companies where the capital or shares of at least 51% are owned by the government, and whose purpose is the pursuit of profit. The purpose and objective of setting up SOEs is to provide goods and services of high quality, strong competitiveness, and to maximize profit to enhance shareholder value.

In spite of the government being the largest owner in the SOE, SOEs (Perseroan Terbatas or PT) are required to follow the same business regulations that apply to private companies as well, including accounting regulations and environmental regulations. Utama (2011) examined the practice of reporting on CSR seeing whether the practices are under the same regulation and found that general public (PT-Tbk) SOEs' disclosure related to CSR is 15.532% higher than other types of SOEs or than that as a private company. This is what makes SOEs a real example of praise worthy corporate governance and specific policies related to EA for other types of business entities practicing EA whose numbers is still low. As revealed by Trireksani and Jajadikerta (2016) examined 38 listed-mining companies in Indonesia and found only 37% addressing environmental aspects.

## **2.5 Conceptual Framework of EA**

Based on the gap, the study develops a conceptual framework. This conceptual framework is designed as a guide to understand current practices and explain practical EA practices that conform to the accounting regulations from the Indonesian environmental perspective.

Farouk, Cherian and Jacob (2012) stressed in their research framework that government (regulator) and business organisations have the environmental responsible

behavior. Farouk et al., (2012) use literature analysis to set a conceptual framework of EA that EA is associated with environmental reporting. The framework also aims at presenting debates related to the identification of corporate attitude towards environmental sustainability. Environmental sustainability is very less common practices in Indonesia, revealed by Suharjanto and Miranti (2008) who found that listed companies in Indonesia who practice environmental reporting was 53.75% whereas the overall level of environmental disclosure (ED) was 4.35%. It gives evidence that attention to environmental aspects by the businesses in Indonesia is still very alarming. Also, Utama (2011) found the average level of social and environmental disclosure by Indonesia SOEs from 2007 to 2009 to be at 42.11%, and discovered a significant gap of the level of social and environmental disclosure between listed public entities and non-listed public entities. Sakumoto (2004) suggests that the ED practice in Indonesia is not supported by a legal basis (accounting regulation). Accordingly to McCarty and Zen (2010), although legislation in Indonesia gives basic rights to people affected by pollution, this does not readily translate into effective procedural rights. This is to accommodate the actual perception of regulators on EA, as stated in the research questions in Section 1.4. as such, in the first step, this research seek to gain regulators' perspective for answering Research Question 1: What are the regulated EA treatments in Indonesia?

Mook and Quarter (2006) assert that conventional accounting for social economy organizations creates certain perceptions when it comes to the environmental aspect. Further explaining, they suggested to capture the value and show the impact of social economy organization in different accounting framework based on organization in context. Lindrianasari and Adriyanto (2010) examined Indonesia listed companies

using quantitative method on manager perceptions, age, export, margin, assets, risk as independent variables looking for the significant relationship with EA disclosures (ED). They found that manager perceptions do not have positive relationship with ED and it showed that companies tend to give only such information which gives a positive impact on company image. Lindrianasari and Andriyanto (2010) measured management perceptions using Deegan's (2002) questionnaires about legitimacy. But those researchers do not mention what is actual perception of internal management on EA practices. The second step of this research is to look at EA practices of SOEs as the organization in context. In this step, the researcher seek to develop the internal management perspective and the accounting procedure of SOEs for EA to answer Research Question 2: How do SOE companies apply EA in Indonesia?

In the diagram below (Figure 2.3), to describe the present practices of EA, the EA practice is associated with cost structure and performance measurement that are used as supporting information in EA disclosure. It is mentioned in conceptual framework, that recognizing the cost of information is important for structuring EA practices. Recognizing them includes identification and classification of accounts. Information on cost structure is useful for companies to sustain their productivity and profitability.

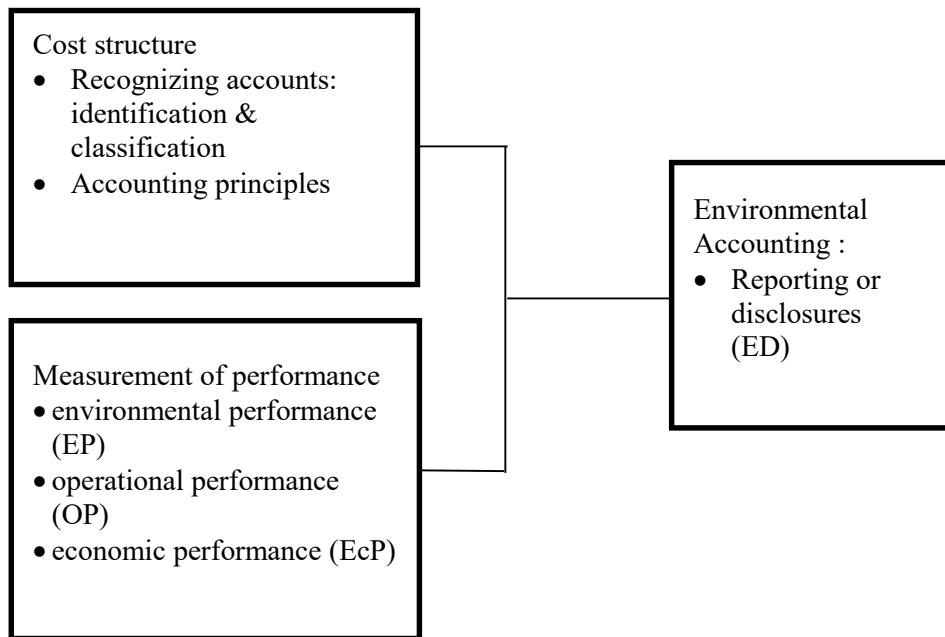


Figure 2.3  
*Conceptual Framework of EA Practices*

Lack of accounting data means a lack of information that users need for decision-making; such as investors get information about their investment is free from hidden risk that will reduce their opportunity to get investment return which information about the environmental sanction, information about products do not harm the environment or safe for consuming, and information on management strategy to increase sales rate (see section 1.3 Problem Statement).

Specifically, Negash (2012) suggested cost structure in EA as part of sustainability report. He used modeling perspective (SEM) to set useful conceptual and practical frameworks for monitoring firms that are operating in environmentally sensitive industries in US. Then, Negash (2012) employed case study method on three mining companies in US to explore the EA practices under US GAAP (full convergence to IFRS) and found the costs of decommissioning, rehabilitation and restoration of the environment not disclosed.

The cause of some undisclosed items of EA accounts were the lacking of technical issues of recognition, measurement and disclosure on the other hand. It is supported in the research by Jobstl (2005) in his joint research on forestry accounting with researchers from mediterrania region and south-america region. His research set the flow of accounting data on EA that related to another field of study in accounting (see Figure 2.1), whereas he found that measuring monetary values for providing integrated information in forest assets had a challenge related to improve technical method to measure cost reductions. Cost reduction is an effort to set standard cost (as part of management accounting field of study); which the standard cost is based on the expected annual revenues (as part of financial accounting field of study).

The identification process and classification cost are the important steps to establish cost structure of EA. Jones and Solomon (2013) examined the accounting aspect on companies practices in Denmark, Sweden, New Zealand, Bangladesh, and Kenya using case study method and explored man-made severity on biodiversity forms. And later, his work was called as biodiversity accounting. He found that many companies were facing difficulties in accounting practices pertinent to recognizing the environment as an asset.

The difficulties to recognize and classify cost structure of EA are noted in the problem statement section. It is mentioned that lack of accounting standards for EA practices (section 1.3, para.1). It causes of difficulties to identify and classify environmental factors associated with costs (mentioned in section 2.3) that should be recorded in the business activities. Webb, Cahan and Sun (2008) examined both mandatory and voluntary disclosures using the CIFAR ratings (Center of International Financial

Analysis and Research). They captured differences in mandatory disclosures across 30 countries, and found that mandatory disclosures in the index is inappropriate because mandatory disclosures and legal system have been highly correlated; since mandatory disclosures reflect accounting standards and common-law countries have more rigorous accounting standards. Indonesia is a civil-law country attempting to show that the Civil Law is essential for establishing a civil society based on contracts and also as a legal basis for developing private laws (Sakumoto, 2004, p. 221).

Similarly, to include EA in the financial structure is not an easy task to seek the substance of the EA accounts (section 2.3.4). Therefore, it can be referred back to Indonesia GAAP, because even in GAAP, technical matters of EA are not implicitly cited (Section 1.3, para. 2). In view of this, best practices are needed as an improvement over the existing system (Bragg, 2004, p.12). Accounting practices refer to accounting principles to recognize the realization the environmental cost, though the process of recognizing the account collide with the accounting absence (stated in Section 2.3.1). Catusus (2008) emphasis on the background of accounting absence is adherence of performative aspect and ostensive aspect. A performative definition of accounting suggests that the fate of any account lies in the practioner's translation; Everett (2004) called performative aspect as social dimention. An ostensive definition of accounting includes a natural and unambiguous effect. Ostensive definitions of accounting take for granted the abilities of accounting, abilities that are drawn from the original source, for example account of depreciation expense is drawn from assets. It is a phenomenon of how does internal management of SOEs to perform cost structure of EA in limited guidelines.

Performance measurement is also necessary (section 1.3, para. 1) because it should be used in EA to examine the effect of EcP, which is due to the questionable present EA practices measurement in Indonesia that do not relate to environmental aspects.

(Beyer et al. 2010; Ariesanti, 2012). Ariesanti (2012) criticizes on EA practices in Indonesia that are still in voluntary approach, while the Financial Accounting Standards (Indonesia GAAP) do not take for granted the performance measure, that the measurement of the company's activities should be carried out in monetary terms.

Consequently, the uncertainties that are related to a measure of both EP and ED affect EcP measures and lead to inefficient practices (Earnhart, 2010; Jones & Solomon, 2013). Earnhart (2010) examined corporate economic performance (EcP) as measured by added value on Czech firm level-environmental performance and found successful EcP, in the form of added value, degrades EP. However, the result is opposed to the commonly-used measures of financial performance. Jones and Solomon (2013) summarize the problematizing of EA globally, wherein technical accounting problem is related to account, measure, value, and EA report. The association of each performance can be seen and is explained further in section 2.4.1. Here, measuring performance is expected to set before (ex-ante) and after (ex-post) implementation of EA (Bragg, 2004, p.24). Also, there are many reasons to divide it.

Firstly, it is to prevent poor implementation of best practices in accounting. Moreover, Bragg (2004, p. 24) stated that a missing post-implementation review can cause the failure the projects to continue. This relates to sustainability matter as stated in Section 2.3.4.1. Beyer et al. (2010) noted that ex-ante data is for valuation role of accounting information. Beyer et al. (2010) examined the relative contribution of management

forecasts (voluntary disclosures), analyst forecasts (information provided by information intermediaries), SEC filings (mandatory disclosures), issuance of earnings guidances (voluntary disclosures), and actual earnings disclosures (mandatory disclosures) to the information reflected in security prices from U.S firms data and found the voluntary disclosure is related to unwilling firms to report ex-ante specific disclosure policy.

Secondly, it is useful to seek the context performance of the accounts as Beyer et al. (2010) referred to ex-post data as having a stewardship role in accounting information such as for earnings forecasts. Mostly, analysts use proposition of performance changes to calculate the real value (Arbor, 2011). Gaining the context measurement from case study to see how operationalizing of EA is done by SOEs was suggested by Mook and Quarter (2006).

## **2.6 Developing a Plausible Conceptual EA Practice Framework**

Research Question three about what is the plausible conceptual framework of EA practices for SOE. The studies on EA give only two requirements: EcP on EP and syncretism between ED and EcP (Blanco, Rey-Maqueira, & Lozano, 2009; Earnhart & Lizal, 2010). Blanco, Rey-Maqueira and Lozano (2009) examined management performance (EcP) and environmental performance (EP) in US firms to evaluate empirical data on the characteristics differences in economic results from voluntary environmental initiatives, and they found that none of the EP significantly increased EcP. United States is a country which has a rigorous EA standard and an agency for monitoring the EA practices (Environmental Protection Agency/EPA); it is opposite with Indonesia. Hence, EcP data can be collected from the Council of Economic



Priorities (CEP) under EPA. A conceptual framework with environmental aspects does exist, wherein environmental aspects under Bicalho et al. (2009) are based on

US-GAAP. It is supported by Earnhart and Lizal (2010) studied EcP and environmental performance (EP) on Czech government's regulation on Clean Air Act and found the success of EcP, in the form of added value, degraded environmental performance, or capital investment (EcP) failing to influence EP. As such, this study postulates the concept of accounting procedure for answering how the company should do planning, and set the accounts to execute EA in their accounting system that would be displayed in reporting (Figure 2.3). The concept is adapted from both Jobstl and Hogg (2005) and Negash (2012). Jobstl and Hogg's framework refers to EA as an integrated reporting and Negash (2012) uses the stand-alone basis (partially reported from annual financial statements).

There are three steps for EA practices application. The environmental disclosures (ED) are set because of the basic accounting procedure of EA. As for the first step, this research develops the best approach and looks into what the best practices can do to record, classify and summarize economic transactions of a business relating to EA transactions. This study finds the category of EA transaction and separates it from general transactions that perhaps have similarity. The information about the category of EA transactions is obtained from the literature. To know whether or not it is a plausible accounting procedure, the researcher interviewed the accounting standard-setters and company's managers.

The second step is EP. This study develops the sustainability report on EA in detail. The stand-alone basis of reporting is necessary for the company to give information about their concern with and view on EA. This provides flexibility to the company in

The form of environmental reporting, for instance, if accounting regulations and the environment regulator ask for detailed information on environmental management in the CSR report. This step is from Negash (2012), but this study adds qualitative information besides quantitative information as the content of the EP report. Indonesia has no regulations about how the environmental reporting has to be, but KLHK (government) has its own criteria about EP (see section 2.3.2 PROPER-KLHK ratification).

The third step is to answer the question of many researchers earlier about how to develop the EcP of EA that has a link to ED and EP. This study examines the related technical matters about it. EcP is useful for the company to evaluate the benefit of EA practices (stated in Section 2.3.3). It is also useful for stakeholders and shareholders to get information on EA.

## **2.7 Summary**

It can be summarized from above literatures that motivation for current research is deemed high and adequate. Stated-owned enterprises of limited-liability type (SOE-PT) are viable example of EA practices because 1) company characteristic that has multiple function for Indonesia economy (profit function) and for performing charitable acts or performing other allowable activities (social function), 2) SOE-PT operates under commercial laws (without demarcation policies with other kind of

business entities). Thus, this study is to find and investigate the phenomenon under unavailable of EA standard (Indonesia GAAP). More so, when entities face the urgency of EA practices which when neglected have caused declining market-share value, leading to paying the fine for the environmental damage they caused, facing the community's anger, and losing the trust of investors.



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter explains the methodology employed in this study. It entails the research process carried out to fill the research gap. It contains several sections, including methods that convey the research approach and data collection. Furthermore, it presents the procedure used in the study, the analysis and interpretation, which include triangulation, validity and reliability.

#### **3.2 Methodology**

This study is conducted using a qualitative methodology. Qualitative methodology is appropriate for this study due to several justifications, which are the nature of the issues or ontology, and epistemology presented in this study. The nature of the issues is subjective as it relates to the complexity of issues presented (as described in chapter 1). The complexity of the issues is supported by Yakhou and Dorweiler (2004) who expressed that EA is an inclusive field of accounting, giving information to the internal and external users on environmental reporting; they claimed EA is a multiple discipline, providing a base for determination of environmental impact and related costs. According to Yakhou and Dorweiler (2004), the multiple perspective nature of EA relates to the understanding of EA from the perspective of the individual and organization. Further supported by Saldana (2009, p.27) that multiple minds bring multiple ways of analyzing and interpreting the data.

The focus of the study is on the process and interpretation of the meaning of the phenomenon. In that regard, Merriam (1998, p. 4) opined that focus on the process is

constituted from the knowledge and experience gained from an inductive study. This is consistent with the explanation in Section 2.3.2, that Indonesia still has no standards on EA (accounting regulation). This is a phenomenon that needs to be interpreted and examined from various perspectives to get the answer (in contrast to deductive approach). According to the Merriam (1998, p. 8), when one focuses on the process, meaning and understanding, qualitative research is appropriate to explain what is the actual motivation on EA practices and how are the processes of EA practices; hence, it only could be answered by the qualitative methodology.

In addition, this study examines the EA practices in Indonesia, for which there were limited studies. Merriam (1998, p. 7) stated that, “Often, qualitative studies are undertaken because there is a lack of theory or existing theory fails to adequately explain a phenomenon”. Also, as claimed by Jones and Solomon (2013), accounting itself is not a new field of study but EA is very rare as a research topic and still needs further exploration on technical matters (stated in Section 1.3 and 2.3.1).

### **3.3 Research Design**

This section explains the research design employed in this study. Figure 3.1 depicts the entire research design of this study. Generally, the research design comprises of four main stages, designed to provide an elaborate and rich description in understanding the EA process (see research questions in Section 1.4). Specially, there are four stages of designed for this study, which are; method, data collection method, data analysis and making the interpretation on the analyzed data and obtained findings.

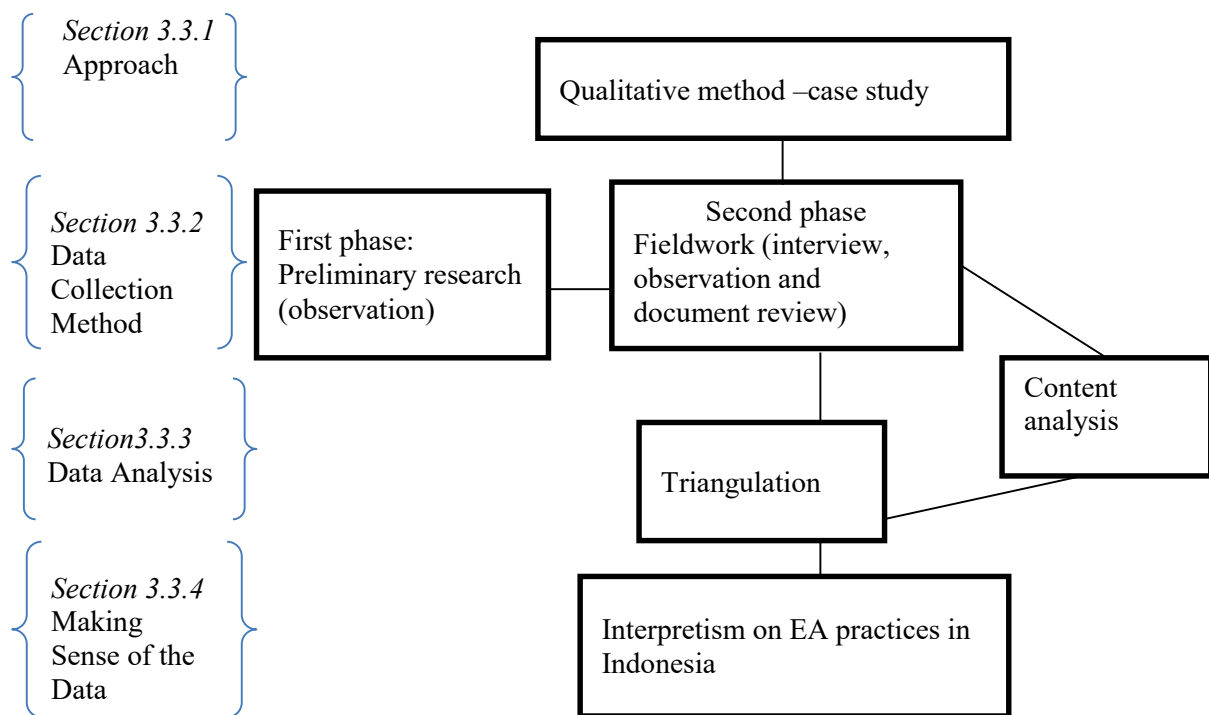


Figure 3.1  
*Research Design*

Specifically, each stage involves a thorough and rigorous procedure which is described separately in this chapter. Figure 3.1 gives an overview of the research design undertaken by four terms: (a) multi-case study approach, (b) data collection, (c) data analysis, and (d) making sense of data.

### 3.3.1 Method – Case Study

A case study method is used for this research. The justifications for employing case study as a method are delineated as follows. Firstly, the history of case study research is marked by periods of intense use and disuse. Yin (2011) suggested that case study is done by giving special attention to completeness in observation, reconstruction and analysis of the cases under study. A case study is conducted in a way that it incorporates the views of the "actors" under the case study. Based on the nature of the

research questions, clearly, multiple actors' views and contexts are required. Section 1.3 Problem Statement has denoted that there is a need to further research on technical matters, indicating that this research must be understood through many institutions or organizations: government and corporations, to find out the dimensions of the problematic EA practice and suggest a plausible framework of EA in the accounting system.

Secondly, case study as described by Yin (2013) should satisfy the three tenets of the qualitative method: describing, understanding and explaining. Based on the description of the research issue and problem (see in chapter 1). It emphasizes on describing the EA practice in the Indonesian context (see research question 1). In addition, the understanding of the EA process is essential for developing the EA practice (see research question 2), and the framework developed explains the whole EA process, measures, reporting and disclosure (see research question 3).

#### **3.3.1.1 Multiple Case Studies**

More importantly, this study uses a multi-case study approach. Multiple case studies are proposed because the in-depth understanding of multiple case studies, rather than single focus, would provide deeper insights to make sense of EA practices. As mentioned by Yin (2004), multiple cases could strengthen the findings and make an interpretation more robust. Hence, based on the justifications above stated the researcher opted for the multiple case studies; the researcher observed two companies that have different cases of EA practices in Indonesia (see in Section 4.4).

This study adopts all the five sections of the protocol as recommended by Yin (2004), aiming to support the rigor regimen of the research design. The five sections are: theoretical perspective and case selection, the strength of multiple cases, embedded units of analysis, more illustrations of case study evidence and analysis and conclusions.

Firstly, it is the theoretical perspective and case selection taken for the elaboration. EA practice, as a case study, has been developed through a previous study. The study contains numerous examples of applications of the case study methodology. Even the body of literature in case study research is under-developed and inadequate (Yin, 2002) in comparison to that of experimental or quasi-experimental research. In an experimental prototype, the literature provides some insights into the acceptance of the test to perceive the singularity of the object of study, but it does not use the test in the case study. Related to EA, there are some areas that have used case study techniques extensively, particularly by the company and regulators and in evaluative situations, where EA practices in Indonesia still have no standards regarding recognition, measurement, record and report in a company's annual financial statements.

Secondly, it is the strength of multiple cases for a discussion. Based on the above considerations, this research attempts to understand a multiple-case study, whereas Utama (2011) revealed different performance between listed SOE and non-listed SOE. Yin (2004) noted two or more cases of single case study would be called “multiple case studies”. The study of EA-related research in Indonesia (Setiawan & Hadi, 2007; Siregar & Bactiar, 2010; Aulia, 2011; Andayani & Riduan, 2011; Suryono & Prastiwi,



2011; Febrina & Suaryana, 2011; Ariesanti, 2012), have raised many questions regarding Indonesia's ability to adapt EA-related standards in her practices. This research is conducted to find and make recommendations about the problems on EA practices in Indonesia, which can be made stronger to support the companies and the national economy through sustainability of reporting (Mccarthy & Zen, 2011; Jerrett et al., 2003; Markandya & Tambora, 2005, p.22; Farouk, Cherian & Jacob, 2012; Negash, 2012). Based on previous studies, this study seeks to understand many institutions, the regulators and corporations, to examine the magnitude of their EA problems and suggest a plausible framework of EA in the accounting system. Thus, this study used multi-case over a single case study approach because it had to understand two companies. Specifically, this study focused on two cases taken from two companies that have different conditions about their EA practices (listed of SOE and non-listed of SOE). From these two companies, the study obtained knowledge on the obstacles (technical and non-technical) as well as management and employee perceptions.

Thirdly, it is the embedded unit of analysis. The unit of analysis is a critical factor in the third section of developing a case study (Yin, 2004). It is typically a system of action rather than an individual or group of individuals approach. Case studies tend to be selective, focusing on one or two issues that are fundamental to the understanding of the system being examined. As seen on Figure 2.3 is the conceptual framework as the system of thinking and as the unit of analysis.

Fourthly, in the conceptual framework, this study sets a systematic research framework which gives an understanding from the theoretical perspective to enable

this study to control the research outcome in line with the research inquiry (research objectives stated in Sections 1.5). Each data is supported with evidence as the fourth requirement of a case study that needs illustrations of the case study as evidence (Yin, 2004). Therefore, it is an important study on the practices of EA that is learnt from many studies done in other countries and the existing international EA standards (stated in Section 2.3.2). However, the most important way to do case study is through the observations of the object, as well as from interviews. The results of the observation are the most significant evidence for qualitative research with a case study approach (Berg, 2000, p.123). Berg (2000) stated the main methods for gathering data are from interviews and observation.

In this study, data-gathering techniques are intentionally linked to a method and theory. Therefore, this research adopts this method to obtain data on EA practices coupled with relevant theories in the accounting area. Data gathering, therefore, is not distinct from theoretical orientations. A case study is known as a triangulated research strategy. Yin (2013, p. 323) asserted that triangulation can occur with data, investigators, theories and even methodologies. Stake (2010) mentioned that the protocols that are used to ensure accuracy and alternative explanations are called triangulation. The need for triangulation arises from the ethical need to confirm the validity of the processes. In the case of case studies, this could be done by using multiple sources of data (Yin, 2002). The objective of a case study is to “obtain an interpretation of what happens and how it happens more directly and to be able to gain insights into all the relevant aspects of the phenomenon under study” (Berg, 2000, p.5).

Finally, it is the analysis and conclusion. The present study investigates the “how” and “why” of a phenomenon based on contemporary events within their real-life contexts, i.e., EA practices in the Indonesian context. Threats to validity and reliability issues in case study research are generally addressed with a process of triangulation of multiple sources of evidence based on converging lines of inquiry (Yin, 2003). This process allows the researcher to address a broader range of historical, attitudinal and behavioral issues (Yin, 2003) and improve the clarity of research findings. In line with these research methodology guidelines, four types of evidence sources (namely documentation, archival records, interviews and observation) were used to provide corroborating evidence and help enrich this case study. In addition and consistent with Berg (2000, page 166), two approaches were applied to offer combination of: (1) document analysis (content analysis), which provides an internal perspective; and (2) semi-structured interviews, which provide both internal-retrospective and external-retrospective views, thus giving a rich and in-depth “multi-faceted picture” of a specific case.

### **3.3.1.2 Sample Selection**

As mentioned above, this study adopted multiple case studies. On this note, two groups of participants, namely: experts and internal management from companies were selected purposefully to understand the phenomenon. In a semi structured interview the questions were asked and the answers were recorded to form the participants’ opinions and reactions regarding environmental issues/events, which are important data received from the purposive sample participants who were not selected randomly.

Miles and Huberman (1994), and Kuzel (1992) among others, argued that “qualitative samples tend to be purposive rather than random” (Miles and Huberman, 1994, p. 27).

The resources are the experts. Two basic things prompted the need for gathering data from experts. First, to understand the external interests as embodied in the theoretical basis for the existence of EA as part of the process incorporated for external interests (Section 2.2). This was done by directly asking experts or external parties who have an interest. This understanding is necessary to measure the company's success in controlling the level of business risk associated with environmental issues to the interest of external parties. Secondly, to know the benefits of definite EA practices for the company; however, the company has a profit motive to ensure business continuity. Therefore, the experts in this research comprise legal and accounting external regulators who are associated with environmental agencies, financial institutions and institutions of accounting standards and internal experts from companies. The experts are from:

### ***Indonesian Financial Authority Services (Otoritas Jasa Keuangan or OJK)***

Supervision of the current accounting standards and public accountants institute was formerly part of the responsibility of the Ministry of Finance of the Republic of Indonesia, with the name, Capital Market Supervisory Agency - Financial Institution (Bapepam-LK). On 1 January 2013, this institution was reorganized by the government, whereby it was changed to the Indonesian Financial Services Authority (*Otoritas Jasa Keuangan/OJK-RI*) which is under supervision of the central

government. This institution has authority to supervise the process of accounting standard setting by Institute of Indonesia Chartered Accountants or IAI.

The supervision of the accountants firms and their compliance with Indonesia GAAP practices are still under the Ministry of Finance of the Republic of Indonesia in the Central Bureau of Accountants and Appraisal Service (*Biro Pusat Pembinaan Akuntan dan Jasa Penilai /PPAJP*).

Supervisory tasks of OJK-RI are related to the setting of current accounting standards and overseeing the accounting profession, the establishment of institutions of public accountants and current accounting practices in Indonesia. The institute is trying to address the needs, challenges and risks faced by firms, especially those listed on the IDX, at the same time these firms had to comply with government regulations related to the business and standard accounting principles. .

***The Institute of Indonesia Chartered Accountants (Ikatan Akuntan Indonesia or IAI)***

The IAI is a legal institution for the Indonesian accountant board and has the responsibility to maintain a register of accountants in Indonesia and set the Indonesian GAAP. The main office of IAI is in Jakarta and has 33 regional offices throughout Indonesia.

When there is a paradigm change in global accounting standards, Institute of Indonesia Chartered Accountants (IAI) has a role as mediator for companies, the government and public accounting firms. Accounting regulation is to be set under consolidation and coordination with the OJK-RI and the Ministry of Finance.

Based on the above statement, it can be understood that the Statement of Financial Accounting Standards (SFAS) refers to the interpretation and reasoning theories "applied" in practice in "financial statements" to obtain information about economic conditions.

***Ministry of Environment and Forestry (Kementrian Lingkungan Hidup dan Kehutanan (KLHK)***

The previous name of KLHK was the Ministry of Environment (MOE). Then, the two ministries were Ministry of Forestry and Ministry of The Environmental emerged into one official. The merger office became the Ministry of Environment and Forestry of the Republic of Indonesia.on 24 October 2014.

Related to environmental activities, these institutions set environmental regulations based on civil-laws in Indonesia. Every year, these institutions do assessment, data collection, monitoring and evaluating companies randomly in Indonesia to audit the compliance with regulations.

An expert from an external party was selected for preliminary research on the first phase (stated in 3.3). Experts were interviewed again in the second phase to perform in-depth data gathering. It is associated with the documents they promised to give. Meanwhile, the experts from company's internal organizational structure were chosen based on two ways. Firstly, it is a bottom-up approach with the line of authority from middle to the top manager. This is likely to occur when the company provides limited research opportunities to certain areas in accordance with the company's internal policies. Along with time, management will see prospects of the research for future

business benefits, and avail the area to a higher authority. The second alternative is the top-down approach. The study started from top to bottom line management if it had obtained authorization from the CEO directly. Despite getting authorization from the top management, there were technical barriers when doing fieldwork in the research. Therefore, it was necessary to use the snowball sampling method.

Snowball sampling (Patton, 1990) was used since this approach is useful for locating information-rich key informants. Once contacts were established, the participants were introduced to other prospective informants related to the accounting area. This research used a semi-structured interview. The kind of interview gave the participants a feeling of assuming the role of the stakeholder group that they closely identified with. All the participants who agreed to be interviewed confirmed their confidence to answer the questions based on their past/current experience.

The second set of resources are two companies as unit of analysis. Both companies, A and B, consented to consider the proposed framework of EA for this research. These companies are SOEs (*Badan Usaha Milik Negara* or BUMN) since: 1) the government is the legitimate representative on regulations related to the environment; SOEs adhere to the environmental and accounting regulations in Indonesia; and 2) EA is still a voluntary practice; not all companies are willing to support this study and accept the idea of EA in operational business, contrary to state-owned enterprises that should be aware of external demands related to environmental conservation.

Data of company data gathered from KLHK (related to list of company receiving the Gold award) and from OJK-RI (related to list of company reporting the CSR)

A description of the companies is as follows:

### *Company A*

Company A was selected because of its characteristics as a company that has published the disclosure of its EA-related issues for three consequent years. This is an indication that the company already has the EA-related guidelines. The published disclosure format has to be substantially related to the environmental activities in the use of natural resources and the development of preventive environmental impact. This company was also selected because it received the highest award from the KLHK for successfully managing the environment and decreasing the environmental impact from its production process. Profile of this company can be seen in its prospectus and in KLHK database.

- a. The company has a listed-company status. This shows that many parties are interested in the company that complexity interest is from external and internal stakeholders. External stakeholders from international market require company to provide information on the environmental issues. Especially on direct uses of natural resources for production that has an environmental impact.
- b. The company has received an award from environment-related international organizations and also from the government. This shows that the management already incorporates elements of the environment in its business strategy as an indication of EA practice.



- c. The company publishes the CSR report on an annual basis (minimum three years), in this case, from 2012 to 2014, in which the environment items are part of the report. Analysis of the contents of the report can show the extent to which elements of the environment are applied in a transparent and consistent way from year to year. Furthermore, this shows that the company knows how to measure the performance elements with regard to environmental matters.
- d. In the database of the KLHK in 2013, the company has never had a record of legal issues related to the environment in Indonesia since three years. It shows that the company has environmental-related standards that are acceptable to stakeholders.

Study demographics explain the identity of the participants to assist researcher in explaining the internal policies of the companies in pursuing the environment as part of the accounting practices. Table 3.1 shows detailed depiction of the actual condition of the legitimacy on EA practices in Indonesia.

Table 3.1  
*Company A's Identification*

Description	Company A
Legal Status	State-owned company
Capital Structure/ Ownership	Indonesian Government 51.01%, public 48.99%
Main product	Cement
Investment type	Holdings
Location main office	Gresik Indonesia

This case study describes the actions Company A has taken and the issues it has encountered in applying EA, which Company A refers to as, "Environmental cost".

The company was selected on the basis of tenure and investment and is a state company that has been listed on the IDX since 1998. Company A is a company that from its inception until now has engaged in cement manufacturing. Company A was inaugurated on 7 August 1957, by Indonesia's first President, Dr. Ir. Soekarno. During its initial inauguration, Company A had the status of NV (Naamloze Vennootschap) and evolved into *Perusahaan Negara* (State Owned Company) on 17 April 1961 and became a PT (after publicly listed company) on October 24, 1969. After the development of Company A in Gresik, on 24 September 1994, a new plant in Tuban area by the name of Tuban I was established, which expanded its business by setting up Tuban II on 17 April 1997 and Tuban III on 20 March 1998, with total capacity of 2.3 million per year from each factory in Tuban area.

The company during the period of 1998 to 2006 has witnessed a displacement of the company's shares 2 times. On 17 September 1998, the Government sold 14% stake in Company A to Cemex SA de CV and on 27 July 2006, Cemex SA de CV sold shares to Blue Valley Holding PTE Ltd. In 2012, the company changed its name to PT- A (Tbk) for ethical consideration on this research as becoming the Company A.

Expanding the business as global market requires competitive strategy. The company has a mission to be a market leader in the cement industry in ASEAN. It has opened a branch in Vietnam, the TL Cement Company by acquisition of 70% of its shares. Changing from local (Indonesian market) to global market forces a company to pay

attention to global stakeholders' demand. The concern about the environment issue as one of the external conditions is internalized by this company.

As a holding company, it has outside of the utility sector in Vietnam and Indonesia which should incorporate externalities into their accounting systems. However, Company A does intent to go further and look at 'externalities' in the future.

Subsidiary businesses - non-cement production:

1. PT United Tractors Semen Gresik (UTSG)
2. PT Industri Kemasan Semen Gresik (IKSG)
3. PT Kawasan Industri Gresik (KIG)
4. PT Swadaya Graha
5. PT Varia Usaha (VU)
6. PT Eternit Gresik
7. PT- SGG Energi Prima
8. PT- SGG Prima Beton
9. PT- Krakatau Semen Indonesia
10. PT- Sinergi Informatika Semen Indonesia (SISI)

Affiliations

1. PT Waru Abadi
2. PT Varia Usaha Beton
3. PT Varia Usaha Bahari
4. PT Varia Usaha Dharma Segara
5. PT Varia Usaha Lintas Segara

6. PT Varia Usaha Barito
7. PT Swabina Gatra
8. PT Konsulta Semen Gresik
9. PT Sepatim Satamtama
10. PT Bima Seraja Abadi
11. Universitas Internasional Semen Indonesia (UISI)
12. TLCC
13. APCC

#### Support businesses

1. Koperasi Warga Semen Gresik (KWSG)
2. PT Cipta Nirmala
3. Semen Indonesia Foundation (SIF)
4. Dana Pensiun Semen Gresik (DPSG)
5. Yayasan Wisma Semen Gresik (YWSG)

#### ***Company B***

Company B is a company that has applied EA differently. It also had a problem with the regulator relating to environmental issues in the past. Many national companies are still in this category. The data of companies which have problems with the environment can be seen in the KLHK database.

The main purpose of gathering data from this company is to understand its embedded problems and to solve it through the researcher's skills in the accounting area. The

involvement of the researcher in the company is required because it might need a longer time to achieve satisfactory results as the research questions are asked based on what is feasible in relation to the EA standards.

Contrary to Company A, Company B (summarized in Table 3.2) does not have all the criteria of Company A yet. However, some of the criteria in accordance with the purposes of the research are:

- a. The company is not a listed company yet or is going to be listed.
- b. CSR reporting has not been consistently reported for at least three years. The Annual Report that consists of the Sustainability Report was published only for 2010, 2012 and 2013 in its website, then stopped for 2014. The existence of the company's CSR report is still not a requirement but voluntary. The lack of consistency means the absence of sustainability reporting application, or in other words, the company does not have a standard size and shape of the environment, and how to report EA accounts and practices.
- c. The company received an award from an international accredited organization and the government related to its effort in managing the social cost and the environment.

Table 3.2  
*Company B's Identification*

<b>Description</b>	<b>Company B</b>
Legal Status	Government Company
Capital Structure / Ownership	Indonesian Government 100%
Main product	Vaccine
Investment type	Enterprise (Perseroan Terbatas or P.T.)
Location main office	Bandung, Indonesia

This case study describes the actions Company B has taken and the issues it has encountered in applying EA, which Company B refers to as "Social Cost".

Company B was established by the Governor of Netherlands Indies in 1890. During the Japanese occupation in 1945, it changed its name to *Bandung Boeki Kenkyusho*. At that time, all foreign companies under Government Regulation No. 26 Year 1978 had to be nationalized to become *Perusahaan Nasional* (PN) or State-owned Company. Even though Company B is not listed yet on the IDX, the government changed the organizational structure to *Perusahaan Terbatas* (PT) or limited-liability companies.

From 2004 to 2005, Company B suffered a huge loss when the World Health Organization (WHO) canceled the membership of the company and deregistered the company due to poor quality of its products relate to hygiene aspect. It became a big stroke for a company as it had to cut the production by 80%, including cancellation of exports to South America and India.

### **3.3.2 Data Collection**

The main goal of this case study is to obtain a framework of EA that is aligned with Indonesian GAAP and to obtain the most applicable EA framework for Indonesian companies. The framework of EA should include technical measurements and performance, sustainability in disclosure, assessment and cost saving measures (Burrit et al., 2011; Negash, 2012; Yakhou & Dorweiler, 2004). In order to provide an insightful and in-depth understanding of the research objectives (answering research

questions designed for this study), this research obtained data from primary and secondary sources, through interviews, documents and observation.

Specifically, there are two main phases of data collection for this study. Each was conducted based on its aims and purposes: 1) preliminary study; and 2) fieldwork, which was further divided into three steps: interview, observation and document review. The first phase was for strengthening the adherence of research gap which state in Section 1.3 of Problem Statement, whereas the second phase was for further research to find the answer of research objectives.

### **3.3.2.1 First Phase: Preliminary Study**

In exploratory case studies, gathering data may be undertaken prior to the definition of the research questions and the research objectives (Section 1.4 and Section 1.5). This type of study is considered as a prelude to some social studies because EA demands that external parties should be internalized in organization activity. Selecting cases is a difficult process, but the literature can provide guidance in this area (Yin, 1989). Stake (1995) recommended that the selection offers the opportunity to maximize what can be learned, knowing that time is limited. Hence, the selected cases should be easy and willing subjects. Based on the suggestion made by Stake (1995), this study conducted a preliminary study that contains the condition of EA practices in Indonesia directly through interviews with several parties who have direct authorization on environmental policy in Indonesia. As mentioned, the aim is to provide an initial and basic understanding of EA. Preliminary research is very important to find the gaps in EA practices (the result of observation in Table 3.3). This

step was developed through observation by interviews of some key persons from many institutions.

As set forth in Section 3.3.1.2, through observation, the key persons are likely to be an expert for the second stage of the research. They are required to provide important information in the process of gathering the data. In the first stage, the key persons were obtained by the snowballing method. As explained in literature (Section 2.3.3), EA is a multidisciplinary area with the existence of laws and policies related to external factors (external stakeholders). External organizations are associated with environmental laws by KLHK and other institutions that have the authority to determine financial information system policies for investors. Observations conducted to OJK-RI. They determine the contents of the annual financial statements to be published by companies that have been and will sell shares on the stock market and the Institute of Indonesia Chartered Accountants (IAI), which has authority on policy-making of GAAP in Indonesia. In addition to these three institutions, there are two other institutions, namely Institute of Quality Standards (Badan Standarisasi Nasional or BSN) and the Institute of Professional Accountants (IPA). In final stance determination of which regulator's institution should be chosen as organization setting based on observation. Researcher carried out on the five institutions that were KLHK, OJK-RI, and IAI. Researcher had to withdraw the BSN and IPA from the institution list, as they do not have any authority on environmental policies in Indonesia. Observations were based on the interview and the job description of each institution.



Table 3.3  
*Observation in Preliminary Study*

<b>Institution</b>	<b>Person/position</b>	<b>Approach</b>	<b>Preliminary result</b>
Ikatan Akuntan Indonesia (IAI or Indonesian Institute of Accountants)	Jenny,MSi,Ak Telp.62-8189762088/ Technical Manager of Accounting Standards.	Interview on 14 January 2013 at 03.00 PM to 04.15	No EA standard in Indonesian GAAP
Kementrian Lingkungan Hidup (KLHK or State Ministry for the Environment)	Djurit Teguh Prakoso Telp.62-8129354732/ Head of Energy and Renewal.	a) Interview on 16 January 2013 at 10.00 AM to 11.30 AM b) Online documents	Government standards for environmental performance through “PROPER ranking”
Otoritas Jasa Keuangan (OJK or Financial Services Authority of Republic of Indonesia)	Etty Retno Wulandari Telp.62-213454646/ Lead Specialist, Board of Commissioner of Secretariat, Deputy of Strategic Management I, Financial Services Authority (formerly)	a) Interview on 30 August 2013 at 10.30 AM to 12.00 AM b) documents	No EA standard but suggest (policy) to do disclosure about environmental and social activities
Company A (PT Semen Indonesia Tbk)	Head of CSR	a) permission letter to do research. b) online documents c) Interview d) plant sites visit	Answered Company discloses EA
Company B (PT Bio Farma (Persero))	Manager of Public Relation and Internal Policy	a) permission letter to do research b) online documents c) plant site visit d) Interview	Answered Company not done disclosure of EA yet and has not going public (listed) because of internal policy reasons

To start with, as shown in Table 3.3, a preliminary study was conducted to gain information about what, how and who should be selected from the external institution

and the companies that can support and have the capacity to implement accounting standards related to the environment.

The preliminary study was conducted that found strong evidence on the absence of EA standards in Indonesia (stated also in Section 1.3 Problem Statement) as follows:

1. Accounting professionals do not know what EA is and how to apply it.
2. The government has enforced many regulations on environmental-related issues but not connected to the accounting board.
3. The environmental issue itself is as a consequence of CSR reporting but still only a minor part is published in the report; this means it is voluntarily applied.
4. Each of the regulating parties (KLHK, OJK and IAI) is willing to provide data to support this research.

Data gathered from the first phase was used also for supporting the second phase, which it is presented in Chapter 4.

The first party from the external institution is Institute of Indonesia Chartered Accountants (IAI). To get the key person, the researcher asked the front office staff, and acquired two people, i.e., Technical Manager of Accounting Standards and Director of IAI. These people have the authority and knowledge about IAI policy regarding accounting standards in Indonesia. At the time of observation, only Technical Manager of Accounting Standards was interviewed; hence, Director of IAI was interviewed during the second phase of gathering data related to information about IAI's overall policy on the content of Indonesian GAAP in the present and future. The Technical Manager of Accounting Standards is someone who has the technical

responsibility for the implementation of accounting standards applicable in Indonesia. He or she must have acquired generally accepted accounting standards through courses and development programs for the accounting profession; oversee the existence of public accounting firms throughout Indonesia and coordinate with the state financial institutions related to capital markets. In accordance with the requirements of technical studies that is related to the application of the EA, the actors of these institutions have competence in providing information and advice about the feasibility of EA framework based on GAAP in Indonesia (in line with the third research question in Section 1.3 and setting the EA framework as best practice in Indonesia in Section 2.6).

The second external institution is the KLHK. This institution has the authority to produce the relevant government regulations for environmental protection and assesses companies throughout Indonesia with cooperation from local governments to investigate a company's adherence. The results of the investigation are given to businesses and local governments to handle and improve environmental quality associated with public health in the vicinity of the business operations. The assessment result is announced by KLHK to the public through KLHK's website. Section 2.3 states the negative consequences for companies that violate environmental law or do not improve upon the hazardous impact on the environment after the investigation by the KLHK. Data in preliminary research was obtained from the Head of Energy and Renewal, who has the responsibility relating to the research and development of alternative energy and improvement of environmental quality as a result of using natural resources. Performance assessment methods for environmental conservation by KLHK can be understood and observed through interviews and analysis of documents using content analysis method. This is to support the preparation of

assessment methods and measurement of environmental performance that could be applied in practice for a company's EA (stated in Section 2.4.1).

The third external party is the OJK. This institution is a financial institution under *Dewan Perwakilan Rakyat* or The House of Legislative Chamber which has authority in the capital market to assess the appropriateness of companies that wish to be registered and the compliance of companies that have been registered on the IDX in accordance with the regulations and policies of the institution. Under this institution, there is a department in charge of the accounting standards, i.e., Department of Strategic Management I. The key person interviewed was the Lead Specialist of Board of Commissioners Secretariat. The Department coordinates with IAI on the application of accounting standards for listed companies or non-listed companies in the capital market. In the second phase of gathering data, an in-depth interview with OJK expert related to the framework of EA practices in the financial system was conducted.

The criteria of participants from companies A and B can be seen in section 3.3.2. In preliminary research, observations were conducted over the company's website and KLHK. In the company website, the annual financial statements are available and in KLHK website, are the results of the evaluation of companies' performance relating to environmental conservation. However, at this stage, key persons from both companies were accessible after the researcher did preliminary research.

### 3.3.2.2 Second Phase: Field Work

The second phase is the fieldwork. The aim of fieldwork is to gain in-depth on the EA process. In so doing three kinds of data collection during the fieldwork; interviews, observations and document review was need.

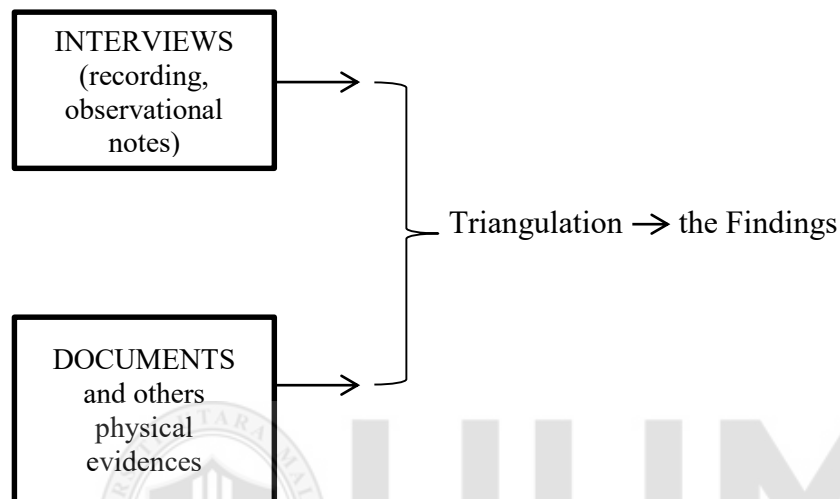


Figure 3.2  
*Data used in Analysis part of Figure 3.1*

Interview data were used for thematic analysis (further explanation in Section 3.3.3); while data documents such as sustainability report and financial statements were used for conducting content analysis based on specific themes and for making sense of data (further explanation in Section 3.3.4). Then, all managed data were triangulated.

#### ***Interview***

Two main groups of individuals were interviewed during the process of second phase (Table of participant identification can be seen in Appendix A). The first group comprised EA experts in Indonesia, specifically chosen to answer research question one and second group were individuals from companies A and B to answer research

question two. Interviews took place on May to June 2015 for companies, and September to December 2015 for regulators (see time table of interview in Appendix L).

Yin (2004) stated case study is not about sampling research, but the researcher needs to know the right actors to give important information. Guided by Yin (1999), this study chose participants based on their current and/or previous senior positions in companies, or based on their direct involvement in related fields, for example, head of accounting, head of technical standards-setting, government officials and environmentalists. Snowball sampling (Yin, 2011) was used since this approach is useful for locating information-rich key informants. Berg (2000) implied that snowballing is sometimes the best way to locate subjects with certain attributes or characteristics necessary in a study, especially in the accounting area. Moreover, Berg (2000) recommended the basic strategy of snowballing is to identify several people with relevant characteristics and interview them or ask them to answer a questionnaire. By asking these first subjects for referrals, the sample eventually "snowballs" from a few subjects to many subjects with the provisions adapted to the purpose of the research (see chapter 1). In this study, snowballing procedure is followed by approaching such lead interviewees and letting them identify other possible interviewees. The snowballing method helped researcher in gaining more in-depth relevant resources and information about EA practices.

Firstly, the interview representatives from the companies - participants in this research are actors that representing characteristic skills, and job position in EA-related issues. Burritt et al. (2011) gave the reason of participants background related to accounting

not always from accounting department that in modern organization, data collection about accounting is shared among several departments. Thus, environmental information is not generated in a single department; they were collected from engineering, information technology, production, functional manager and personnel from top management/departments of the companies. The second group of interviewees was experts from Ministry of Environment and Forestry (KLHK), accounting standard-setters and other professionals (Ikatan Akuntan Indonesia or IAI); investment regulators (Otoritas Jasa Keuangan-Republik Indonesia or OJK-RI); and staff from listed company that have applied EA (Company A) and non-listed company (Company B).

First, the names/contact details of prospective participants were taken from company websites and from recommendations from OJK-RI. Once contacts were established, the participants gave other prospective information but still in the accounting area.

### *Interview Setting*

This study constructed an interview setting. A shortened version of the semi-structured interview was designed. The interview is divided into two parts. The questions in part 1 refer to the environmental-related or accounting regulations. The goal of the interview is to gain information about the EA status in Indonesia and its development. The information in the Part one is congruent to research question about the 'how' and 'what' of EA in the Indonesian context. Meanwhile for company's interview setting, the Part two is divided into two sections. It refers to particular companies as the actors of EA practices. Section one is about knowledge of EA, state-owned enterprises' knowledge and awareness about EA. Section two is about EA practices and

innovation. The main goal of the interview in this section is to gain information on the recent pragmatic practices of EA for supporting the suggested framework of EA in Indonesia.

The interview setting for this research is supported by the semi-structured approach for interviewing section that adapted from Burrit, Schaltegger & Zvezdov (2011) and Fleischman & Schuele (2006). At the end of the data gathering data, all questionnaires were returned back because of some internal technical problems, such as participants did not have much time to fill the questionnaire and preferred to be interviewed. All the participants who agreed to be interviewed were confident in answering the questions based on their past/current experience. Meanwhile, the interview sessions were conducted in another language (Bahasa Indonesia). The validation of transcription from Bahasa Indonesia to English was done by the sworn translator from a prominent language center in University Brawijaya Malang (Indonesia) (physical evidence in Appendix K). Through verbatim transcription, the researcher transcribed from the recording, and then sent the transcription in Bahasa Indonesia to the English sworn translator. The results of English version were discussed with other experts (supervisors). The bias of words' meaning in English version can raise wrong interpretations. Thus, researcher repeatedly discussed with the English sworn translator about the bias of words in English matter also.

### ***Observation***

The study made use of participant observation approach. The researcher obtained access to the institutions in order to observe the type, and those who need



environmental-related information. Observational notes were part of data for supporting triangulation process (Appendix L). Researcher took notes during interview (the time table stated in Appendix L) and while waiting for the interviews, observations were made with regard to the surroundings and the regulation manuals.

KLHK was the first office where the participants were interviewed. The interview was conducted in two sessions. The first interview was held on 3 February, 2015 and the second interview was conducted on 10 March, 2015. Appointment for interviews were obtained in the morning before the participants had to leave for the field work. The participants were from chemical engineering and industrial engineering background respectively. KLHK's office location is below the flyover highway in east Jakarta. The office is surrounded by many trees, and the area seems too narrow. Also, the parking lots are limited. The friendly security said that parking is not necessary, because all KLHK staff are always in the field to supervise industries throughout Indonesia. Building B is an interview location that is faced with Building A that serves for archives and libraries. Building B is reserved for the main office of KLHK Minister and for many heads of the departments. Interview sessions were directed to the third floor which was the public supervision and policy department. One large room was partitioned into three parts. Guest room is in the front, officers desk is in the middle, and the head's office room is behind the officers desk. Around the guest room, many magazines published by KLHK are kept for a closed scope (not for sale). During waiting for interview session, researcher could see information related to the latest policy (2014 and 2015) related to environment aspects in Indonesia.

In contrast to the office of KLHK which has its own office, the location of OJK-RI office for conducting interview during early February 2013 was jointly determined with the Ministry of Finance of the Republic of Indonesia, located in the center of Jakarta precisely in Lapangan Banteng. The second interview was held in September 2015, when the OJK-RI office had moved to a more crowded location near the National Monument (Monas). Very tight security like in the airport, scan gate and visitor report is maintained. An appointment letter is required as a reference to meet participants. A mobile office gives the impression that OJK-RI is still in the process of securing a position within the financial system of the State. Internal building arrangement is still visible from the conditions of the office. The building has not been owned by OJK-RI itself. Although, the function of OJK-RI was established in early 2013, and it has existed since it was still in the Ministry of Finance. Observation purposes to this institution provided conformity related to how to report EA should be.

The third office of participant from the regulator was IAI. It is located in Menteng Central Jakarta. Interviews were conducted in February 2013 and September 2015. Menteng is considered as an elite residential area. Hence, the IAI office does not look like a typical office. The reception room looks like a family living room, and just like any other office (KLHK, OJK-RI) looks neat and many magazines are published exclusively for internal staff and visitors. This office is also a place to register for various professional trainings wherein cashier counter can be seen at the end of the room. IAI's main office is also the only place responsible for the Indonesian GAAP book' circulation. The observational purposes into IAI are for seeking latest issue Indonesian GAAP related to EA. The participants showed and explained the nature of

EA under additional information for general purposes that EA is not mandatory practices but important aspects.

Company A has two office locations in different cities. Each office location has got two lay out with operational buildings for administration, and other buildings as plant sites. The administrative building is located at the front and adjacent to the arsip or library building. Security in front of the main gate serves to select guests with internal interests. Similarly, security is available at the backside area that connects administrative buildings and manufacturing operations buildings. At the location of the first city office, the administrative building was surrounded by dense trees separating administrative buildings with manufacturing buildings. The existence of towering chimney and white smoke indicate occurrence of manufacturing activities behind the administrative buildings.

Dissimilar with the first location which is located in the middle of the city, the Company A's second office location is very remote. It takes an hour from the city's main street by driving. At the location of the second city office, visible dust increasingly concentrated around the building indicating manufacturing kind of activities. The building of second location is surrounded by trees that are still newly planted. This location is more stringent in the "safety first" policies. Each visitor must use safety costumes consisting of blue helmet (for visitors), and face mask, before entering the manufacturing building area. Every visitor gets a briefing from the security staff. This shows that security culture is a major concern, and not just a slogan. The purpose of observation is to get internal management motivation, knowledge, about specific regulator' requirement related to the environmental aspects.

Company B has a location which is difficult to be seen from outside, as it is right under a highway flyover. It also indicates that the area of Company B is very crowded with excess traffic. Building Company B has the same lay out as Company A consisting of the administrative and manufacturing buildings. The administrative buildings are surrounded by green gardens and hundreds of years' old trees, thus indicating that the company has been existing since the Dutch colonial era. Meanwhile, manufacturing buildings are behind the administrative building that is not clearly visible, and closed to the public for security reasons. Physically, the building does not appear to have a chimney, indicating the company uses a bit of heat energy sources and does not produce CO<sub>2</sub> air pollution. Thus, observation to this company did to seek the conformity between company' discretions and regulator policies related to the environmental aspects.

Appendix L shows the brief notes about the flow of information related with environmental aspects. Notes were taken to describe and identify from who to whom, how, and why the environmental aspect was incorporated in accounting system. It helped researcher to analyze the directions of interview setting. The phenomenon has connection with the environment needed to be observed as the aim of the early presence at the setting of interview. For example, the organization setting is related with structure, ethics related with gathering of internal data such as interviews, institution's magazine, unpublished environmental reporting (the executive summary), and photograph. The organizational setting observation such as regulators' and company's perspective recorded with any ethical stance was normally presented at the entrance of the institution.

The information flowing from the key-persons was recorded as the interview data, however, any circumstances related with institution could only be detained by observation. Such as, observation in the first phase was conducted to determine which regulator institution has an authority in environmental policies, and which company has policy related with EA.

In this study, the observational notes in the second phase gave researcher the strategy concept to triangulate interview data and supporting documents. It contributed to explanatory understanding, such as which regulator institution asked for EA information, what was regulator's main consideration about EA, how was corporation's action or reaction to EA, and why did internal management possess such policies related with EA. The observational notes have a function as the sketching approach wherein whenever researcher needed to find the connections amongst information gathered from different participants. For example, each regulator institution has two key-persons as research participants wherein each participant has own perspective related with his/her expertise. Standard of EA is not available in Indonesia, thus each expert gave insight of what they believe and know based on current situation related with environmental policies or regulations. Thus, researcher took notes during interviews of the participant on the basis of situation and collated evidence that were verbally identified.

### ***Document***

There are basically three main sources of documents in this study. First, the document from the regulators; second, documents gathered from the companies; and third

documents from external sources collected from websites. The documents are expected to provide support and address the research questions.

First, in a preliminary interview (in the first phase), the participants of the regulatory authorities promised to provide documents related to the environmental aspects (data of valuing and assessing performance process related to EA) and financial reporting rules for companies in Indonesia (OJK). These documents can be used as the study's data sources. The documents can provide information in terms of the external assessment affecting business continuity, because EA is a response to external interests that should be applied internally (stated in Sections 2.3.1, 2.3.2 and 2.3.4). The external parties' document can provide input on the environment related performance appraisal systems, both before and after adoption of EA practices by companies (stated in Section 2.4). Regulator from KLHK gave the important document related to SOEs' reporting of the environmental disclosure (ED) such as the executive summary report. This report is not for public' credential, it is exclusively for KLHK' purpose related to ranking program.

Secondly, documents gathered from the companies, such as internal policies related to EA, for example, internal policies include organizational structure, costs of production, waste handling management, sustainability reports and annual financial statements before and after the audit for the past three consecutive years. Gils, Vissers, and Wit (2009) noted the reason for cutting costs of long-term activities is a limitation of time horizon of industrial research that become not more than three years, so for supporting data from company through the Annual Report, researcher should get a minimum data of three years. In addition, documents related to organizational

structure provide information about human resources and the internal authority concerned with the company's accounting policies, who could be consulted and be willing to cooperate. Also, waste handling documents are related to the standard operating procedure (SOP) or production which also incorporates waste handling procedures. The company's annual report is a document that records all transactions in the company which can be used to track the EA practices. Overall, the aim of gathering relevant documents is to understand whether the practice of sustainable EA has been performed sequentially for at least 3 years.

### ***The Challenges***

Case study is the way to probe in-depth of a particular case. Hence, the environmental aspect is very sensitive matter for companies and, even for regulators to provide data and convince about the nature of EA practices. Questions about EA practices were not immediately asked as different knowledge about EA and unavailability of EA standard exists in Indonesia. Thus, researcher made the interview setting as a strategy to properly gain data and lead the interview towards enquiring on EA practices. Hence, the first question was about knowledge of EA (adapted from Fleischman & Schuele, 2006), then continued to questions related with participants' knowledge area. Furthermore is gathering data from two companies, researcher faced the bureucration process, for example, researcher could not get interview from accounting department. Thus, the internal secretary (staff who has authority to put external researcher for doing research) pointed to department which has legitimate policy related with environmental management. Hence, it brings to Burrit et al., (2012) who strengthened the reason stating that information in modern organization is not depending on one

department but from many-related department. The challenge to connect such interview data with accounting perspective could be done by triangulating with supporting documents, i.e annual report, the executive summary report, and observational notes.

The challenges in this research are related to gathering and collecting data, and language. A problem with gathering data was related to scheduling with the keypersons who were difficult to meet. They have official hectic duties. However, researcher used communication via mobile and email. Then, another problem was transcription from Bahasa Indonesia to English wherein researcher took support of the external expert in language who was a sworn translator.

### **3.3.3 Data Analysis**

The process of qualitative analysis depended on research objectives and method (Yin, 2004). In Figure 3.2, interview data was used for thematic analysis, meanwhile particular data used for content analysis (see Section 3.3.3.2). Then all data went through triangulation for clarifying the meaning from many perspectives (Stake, 2003, p. 147-148).

The Figure 3.3 illustrates the thematic analysis adapted from Bazerley and Jackson (2013) that shows five steps for thematic analysis process.



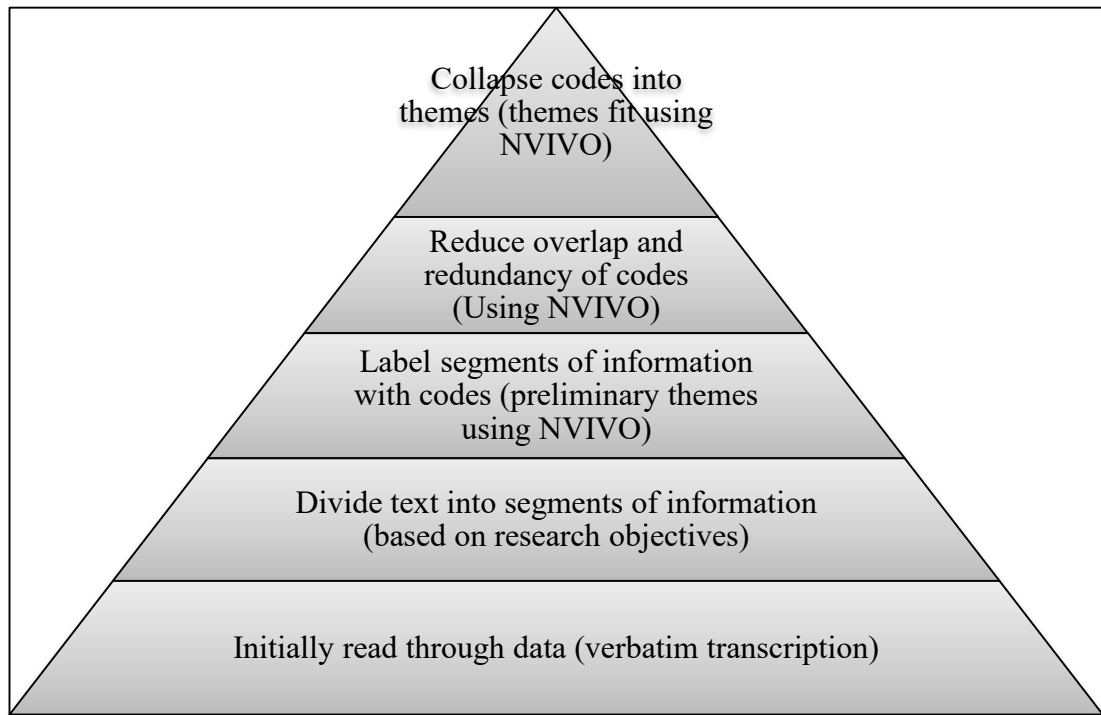


Figure 3.3  
*Thematic Analysis*

- a. Initially read through data

The first step is related with verbatim transcription. Here, Yin (2011) mentions thematic analysis as reassembling process in case study, wherein the emphasis by studies on capturing and interpreting participants' words and language readily leads to the arraying of participants' original words side by side with researcher's interpretations and even transformations of these words. This step is presented in Appendix E.

b. Divide text into segments of information

The second step is to classify text based on using semi-structured interview which can help to arrange classification of theme and sub-theme. This research wanted to understand what are regulator's perspective and internal management's perspective on EA practices. Thus, this research is conducted by interviewing with a semi-structured interview method. Smith (2003) stressed the use of a semi-structured interview schedule in conjunction with a structured questionnaire to derive the benefits of quantitative and qualitative methods (p.151). But he noted that the semi-structured interview method can be inevitably subject to the intrusive effects of interviewer bias, both during the interview and in the analysis of transcripts. Bias is potentially introduced in the coding and interpretive phases, such as redundancy and overlap of codes (see in Appendix E).

c. Label segments of information with codes

The researcher ultimately decides how each sentence in the transcript is to be coded and interprets the 'meaning' associated with selected sections of texts in terms of the theoretical constructs. Consistent and valid coding and interpretation of transcript data are absolute keys to the reliability of this analysis. A means of reducing bias is to use multiple researcher skills in both the coding and interpretive phases. This research was using NVIVO software as a navigator to enclose to data interviews. This step is presented in Appendix B.

d. Reduce overlap and redundancy of codes

Clarification on conceptual ideas is the way to identify the redundant works applied. In coding process, somehow one passage is coded many times. NVIVO gives counts of coded passages for that node (counts as frequency of words). Appendix B shows the NVIVO result supported with resources numbers. Based on the information of resource's number, researcher eliminated duplication of information from every resource (presented in Appendix C).

e. Collapse codes into themes

In this step, the researcher ran data into NVIVO for the second time after elimination of duplication of codes to get the final themes. The final themes is presented and interpreted in Chapter 4 (Section 4.2 and Section 4.3). Themes are labels for topics (Bazerley & Jackson, 2013), which means theme is not the end of research. It can be more interpretive or analytical concept that tends to answer the research questions. Stake (2003) described on theme as the process of data analysis for better theorizing or conceptualizing (Yin, 2011) about EA practices.

Hence, Yin (2009) suggested for multiple-case analysis using replication strategies. It means that the theme findings can be duplicated to or similar to earlier study, whether the same results might be found by theoretical support (presented in discussion section of Chapter 5). It themes findings of this research is presented in Appendix C.

### 3.3.3.1 Content Analysis

Content analysis has been readily applied in corporate social disclosure-based research. In this study using content approach to examine EA practices through company's reporting and support explanatory understanding about company EA practices (see in Section 4.4). Content analysis is defined as, "a technique for gathering data that consists of codifying qualitative information in anecdotal and literary form into categories in order to derive quantitative scales of varying levels of complexity" (Abbott and Monsen 1979, cited by Eugenio, 2009, p. 119). Unerman (2000) complemented Milne and Adler's contribution to corporate social reporting research methods, by exploring two further areas in which choices must be made when conducting a content analysis study: what documents to analyze, and how to make a measurement. Directly, the technique can identify disclosure practices concerning financial instrument (Lopes & Rodrigues, 2007).

Frequently, content analysis is used in combination with interview with an individual or different group of experts. Eugenio (2009) stressed that typically, content analyses of annual reports have sought to analyze corporate annual reports in terms of what they indicate (or do not indicate) about employees and their conditions, what they bring to light (or what they suppress) regarding the impact of the corporation's activities on the environment, and what openness they bring (or what silences they maintain) in respect of other dimensions of the impact of corporate activity. NVivo limitations in conducting analysis on the content of the document that combines numbers, text and image, can be solved using analytical content approach. This procedure aims to examine the contents of documents of a company in the form of an annual report of the year 2012, 2013 and 2014, for examining and analyzing the EA

practices have been done or not yet been done by each company based on the case study. The unit of analysis in content analysis which Yin (2011) consider of triangulation approach as to find the embedded of unit analysis is part of technically requirements.

This step is effective if certain technical requirements are followed (Guthrie & Abeysekera, 2006). It is the process where investigators first establish the preliminary themes or categories in a study and then search through the data for evidence that is consistent with the themes (Creswell & Miller, 2000). Technical requirement is through several steps:

First, the categories of classification must be clearly and operationally defined, i.e., the unit of analysis. NVIVO software helped researcher to capture the unit of analysis using context of unit. Krippendorff (2011) elaborates “the meaning of a word typically depends on its syntactical role within a sentence. To identify which meaning applies to a word from a list of dictionary entries, one must examine the sentence in which the word occurs. Here, the sentence is the context unit and the word is the recording unit”.

Second, data capture must be systematic – it must be clear that an item either belongs or does not belong to a particular category. Third, content analysis must demonstrate some characteristics for reliability and validity. Yin (2011) pointed that the frequency of word usage was considered an important part of a content analysis study. This study captured frequency of word using NVIVO software. It can be of great assistance in trying different ways to reassemble data. The result of frequency of words is attached in Appendix E.

Based on the interpretive nature of this study and the suitability of characteristics of this study to adopt the suggestion made by Prorokowski (2016) that content analysis appears to be the most optimal social research method to capture the information contained in the CSR reports, and financial statement. Content analysis is adopted to depict phenomena in supporting data, such as regulators document, internal management reporting and annual reports. Considering bias in content analysis technique, this research also gains from interview of actors who know much about the company's documentation and activities in recent times. In many social accounting types of research, it has been recommended to use content analysis as the dominant research method for collecting evidence in EA research.

This study proposes to conduct content analysis to analyze research data, such as in Table 4.4 (see in Section 4.3.2) wherein GRI-SRG4 gives guidance of the general standard disclosure about environmental disclosure (ED). Then, researcher did analysis of company's sustainability reports for the same year of each company to get explanatory understanding of each company's policy and content of cost structure related with the environmental aspect frequency of particular words related with environmental costs captured from the annual report in sequential year to provide explanatory understanding of EA practices (presented in Section 4.4). The content analysis were used for supporting discussion section (Section 5.5.1) as part of making sense of data, when it discussed about example approach to calculating economic performance (see in Appendix F and Appendix I).

### **3.3.3.2 Triangulation**

It may be possible to offer alternative views of the same phenomenon through a process of ‘triangulation’, which may increase the validity and reliability of the research. The principle of triangulation comes from navigation. In this research, the main aim pertains to the goal of seeking at least three ways (observation, interview, and documents) of verifying or corroborating a particular event, description or fact being reported by a study. Such corroborate evidence as another way of strengthening the validity of a study.

Through triangulation accuracy of findings is maintained. Stake (2009) points that; triangulation using multiple perceptions clarifies for meaning, and verifies that no redundancy of interpretations are found. To avoid redundancy of observation or interpretations, this research conducted saturation process. In saturation process, researcher did marking on each quotation and searched the evidence through physical evidences (presented in Appendix D).

Moreover, Stake (2010) suggests for member checking in doing triangulation for ensuring confidentiality (validation) of evidence. Hence, this research did member checking with participants as presented in Appendix M.

### **3.3.3.3 Validity and Reliability**

The relevant statements from respective sources are required to have an accurate validity of qualitative data. In order to have valid qualitative data, researchers have used few methods. Yin (2013) stated that validity is considered as an important element for both qualitative and quantitative research. From that point of view, validity

is required for qualitative data since it is collected from interviews, observations, etc. A meaningful validity of qualitative data would improve the value of the study. For a deeper understanding and definition of validity, validity of qualitative research has a parallel stand with other parts of the study, respectively. Silverman (2005) argued that there are a few different techniques available to identify the validity of qualitative data apart from the techniques used in quantitative data. The appropriate attempts with proper validity method can play a significant role in the stage of validation.

However, validation of content analysis result is limited by the intention of the technique to infer what cannot be observed directly and for which, validating evidence is not readily available. Krippendorff (1989) noted that validation in content analysis is the desideratum of any research effort. Yin (2011) called the validation as trustworthiness and credibility in doing. This means that the qualitative research procedures should be transparent. It must be described and documented in a way that other people can review and understand it. Also, physical data need to be available for reviewing the evidence to support findings and conclusions.

Many case studies lack trustworthiness, focusing as they do on specific experiences and relying as they do on the values, aesthetic preferences and interpretive expertise of their authors. Case studies in both form and content should represent the raw materials of human experience, so that writers who compose them cannot avoid the bias inherent in any representation, starting with the choice of cases, extending throughout the processes of interpretation and writing. However, as Van Lier (2005) argued, in the practical world where case studies are conducted, “particularization” may be equally or perhaps more significant than “generalization.” By



particularization, Van Lier means that “insights from a case study can inform, be adapted to and provide comparative information to a wide variety of other cases, so long as one is careful to take contextual differences into account” (p. 198). Yin (2009, p.15) mentioned about generalization as the goal of case study that would be to expand and generalize theories (analytic generalization) and not to enumerate frequencies (statistical generalization). Additionally, when case studies offer apparently contradictory findings of similar issues, the resulting discussion can inspire further research and stimulate the development of new perspectives.

In addition to the concept of trustworthiness and credibility, as excerpted (Yin, 2009) from the US Government Accountability Office (1990), Yin (2009) stated that conformity and data dependability affect the quality of research in a case study. Furthermore, Yin (2009) summarized four tests that can be performed to assess the quality of research: 1) construct validity; 2) internal validity; 3) external validity; and 4) reliability.

In Table 3.4, the first test is construct validity. It is the determination of the measurement and specification of the operational concept of the research used in the data collection. An understanding of the operational measurements and the concept of EA should be performed prior to data collection.

Table 3.4  
*Case Study for Four Design Tests*

<b>Test</b>	<b>Case Study tactic</b>	<b>Contextual research which case study tactic applied*</b>	<b>Research design (Section 3.3)</b>
Construct validity	Use multiple sources of evidence	Did Preliminary research for finding two companies and three regulation institution as source of evidence, stated in section 3.3.2.	Data collection
	Establish chain of evidence	Will be done through fieldwork - section 3.3.2.	Data collection
	Have key informants review draft case study report	Do Preliminary research to find 5 institutions (see section 3.3.2)	Composition
Internal validity	Do pattern matching	Stated in section 2.4 conceptual framework	Data analysis
	Address rival explanations	Experts interview (stated in 3.3.2)	Data analysis
	Use logic models	Stated in Section 2.5 conceptual framework and Section 2.6 Develop plausible EA practice framework	Data analysis
Reliability	Use case studies protocol	Using semi-structured questions as stated in Section 3.3.2.2 Interview setting and Nvivo	Data collection
	Develop case study database	Tabular data resources stated in Sections 3.3.2	Data collection

Source (\*with additional notes from researcher): Yin (2009, p.41).

In the construct validity, three components shall be placed in order to establish the high standard of validity: collect multiple sources of evidences, establish a chain of evidence, and have key informants and review the draft case study report. Multiple sources of evidence are to avoid getting the contemporary evidence when collecting data (Yin, 2009, p.115). This kind of evidence is not strong enough to contribute to generalization of the findings. In this research, research sources are taken from two companies; where each company has several key persons and informants (explanations listed in Appendix A), and three regulation-institutions; where each institution has two key persons as regulators (Appendix A). Establishing a chain of evidence is carried out to ensure that for every conclusion, there is strong evidence that can be traced in the forensic database (Yin, 2009, p. 123). Evidence is obtained during the fieldwork for observations, interviews and quarry-supporting documents (described in section 3.3.2). Then, key informants review the draft case study report during the preliminary research and continuing fieldwork. The results of preliminary research and the key persons can be seen in the explanation of Section 3.4.1 and Table 3.3.

The second test is internal validity. Internal validity test is an explanatory case study when an investigator is trying to explain how and why an event x led to event y (Yin, 2009, p. 42). This test involves four terms of the test: doing pattern matching, doing explanation building, addressing rival explanations and using logic models. The first aspect, doing pattern matching, is to ensure the research has a clear path. Chronology of research can simply be used for the case study (Yin, 2009, p.140). In Section 2.4 on the conceptual framework described to ensure the study has an indentation, Yin (2009, p.137) revealed the independent variable and the dependent variable in the structure

of the case study if the pattern matches, occurs in the following manner: 1) If for each outcome, the initially predicted values have been found, and at the same time, alternative “patterns” of predicted values (including those derived from methodological artifacts or “threats” to validity) have not been found, 2) strong causal inferences can be made. Two concepts, as causal inferences flow (cost structure and performance measurement) against the predicted values (EA practice) in Figure 2.6, are determined based on a literal replication (described in Section 2.4). With the aspect of logical model applying for setting EA practice as plausible accounting procedure (as stated in Section 2.6). The research framework facilitates building the explanation aspect, which Yin (2009, p.141) using the system box. Each box is associated with the predicted value. Accommodation data analysis uses statistical software (NVivo) to build the classification of predicted value. The threat to validity can occur by way of building explanation and interpretation, and bias can be overcome by using a rival explanation, which is through interviewing experts, as explained in section 3.4.2.

The third test is external validity, including the use of theory in single-case studies and the use of replication logic in multiple case studies. External validity is a test that examines a generalization of a particular case (Yin, 2009, p. 43). Literature plays an important role here. The same theory underlies multiple case studies. Therefore, this study follows the accounting theory and literatures related to EA (described in Section 2.6), although some cases must be based on the same basic theory, so that the results can be generalized by analytic generalization or making sense of data (Yin, 2009, p. 43).

Reliability is the final test of research quality, which means minimizing the errors and biases in a study (Yin, 2009, p. 45). It consists of using a case study protocol and developing a case study database. Case study protocol uses outlined questions to suit the purpose of the study (according to the research questions). Thus, protocols are used in this study to strengthen any findings to answer the research questions. The interview method is described in Section 3.4.2 (the type of interview); while analysis of the interview process is assisted by NVivo software. The next is to develop a case study database. Yin (2009, p. 119) divided database into: 1) the evidentiary base of data or the actual database (for example, annual financial statements, degree of institutional policy, the assessment results of environmental performance, etc.); and 2) the case study report, which contains any report from fieldwork, or original investigation. The distinction between these two documents has been made clear earlier, although separated into two categories. Every report should contain data enough to make the reader of the report draw conclusions about the independent case study (p.119). Yin (2009, p. 125) showed an example of using a tabular system to classify and clarify each case study report, related to its data.

### **3.3.4 Making Sense of Data**

The results of the analysis need to be representative, as the output is the contribution of this research (research contributions in Section 1.5) and answers research questions. The output is in the form of EA conceptual framework that can be accepted by all parties in accordance with the regulations on its practices (see Table 3.5).

Based on NVivo 10 and NVivo 11 which ensures the data are reliable and analysis based on research strategy is valid, the suggested conceptual framework (section 2.6

Chapter 2) and the list of questions for interviewing the participants are adapted from Burritt, Schaltegger and Zvezdov (2011) and Fleischman and Schuele (2006) to obtain data that show the categories associated with EA practices in Indonesia (see Appendix C).

Table 3.5  
*Making Sense of Data*

<b>Participants</b>	<b>Source of data (Presentation)</b>	<b>Representation</b>
Regulator's perspective	Interviews	} make sense of data
	Supporting data	
Management practices on EA	Interviews	
	Supporting data	

Procedure of memoing, linking and modelling themes were accomplished by using NVIVO 10 and 11 software. The software supported tools to ascertain closeness of data, while the categories developed should be able to make sense to those provided data (sources) (Bazerley & Jackson, 2013, p. 291). Krippendorff (2011) suggests about agreement value on qualitative data mentioned on indeterminate fixed value that could indicate the occurrence of agreement merely by chance on data, a condition that is commonly equated with the complete absence of reliability. This research was equated into two values (regulators and companies) regarding the resources (participants). Thus, the categories were chosen with the agreement value of more than 50%.

To support the research objectives, there were two parties as a source for extracting data: the regulators to answer the first research objective regarding the status of EA in

Indonesia, and the company to examine the EA-related practices to answer the second research objective.

Participants obtained by using the snowballing approach. Primary data expected from each informant in the form of records, recording of conversations, written questionnaires and secondary data from financial reports, documents supporting the report and pictures and support facilities for environmental conservation (Table of participant identification can be seen in Appendix A).

In order to synchronize between regulator's categories and the company's categories, a saturation approach was conducted (see Appendix C). The saturation approach of the first and the second themes describes what regulators suggest about EA in Indonesia and how do the companies handle EA in their practices. Saturation process is based on the epistemological assumption on some categories that each theme has similar terminology and this helps to reconstruct the results for answering the third research objective. The epistemological assumption is based on knowledge and the ontological assumption is based on the nature of reality.

## CHAPTER FOUR

### ANALYSIS OF THE STUDY

#### 4.1 Introduction

This chapter presents the findings of the study which is divided into two parts. The first part contains the general inquiry from regulators. The second part presents findings on EA practices from two state owned companies in Indonesia. The chapter is structured to provide answers addressing to the three research objectives stated in Chapter One of the study.

#### 4.2 Research Objective One: Indonesian Regulations on Environmental Treatment from the Accounting Perspective

This section examines the first research objective which is to provide relevant data in order to obtain perceptions from regulators related to environmental regulation from an in accounting perspective. The sources are from *Kementrian Lingkungan Hidup* (KLHK), (Ministry of Environment and Forestry of Republic of Indonesia). The sources are used to gain an understanding related to environmental regulation. It is discovered that the environmental regulations do not support the technical matters in accounting. Indonesia does not have specific standards and guidelines for accounting related to EA, whereas the accounting regulator (Institute of Indonesia Chartered Accountants/IAI) governs environmental conservation as the additional information for specific industries. Identification about regulators' participants is placed in Appendix A.

Based on the triangulation of data conducted in this study, several themes emerged from NVIVO, data documents, and oversevational notes. Figure 4.1 depicts the themes



that emerged explaining findings associated with environmental treatment (implied general process of triangulation can be seen on Appendix B and Appendix C).

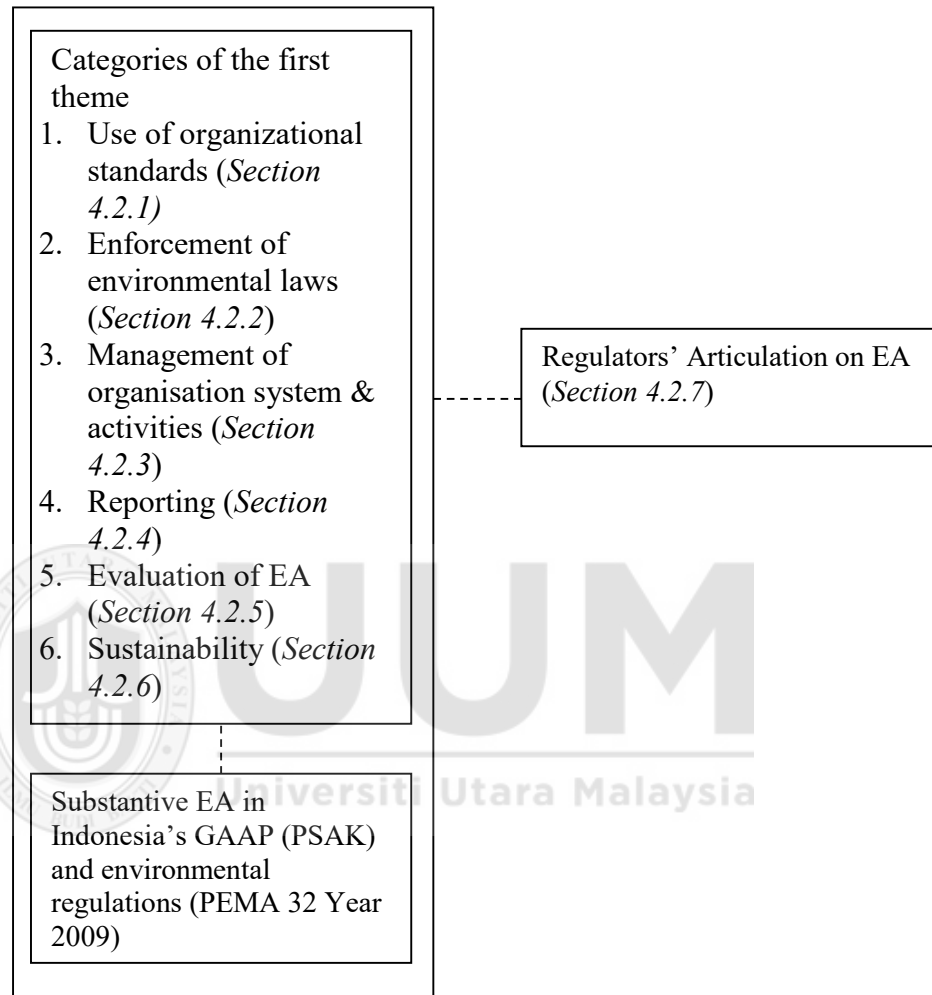


Figure 4.1  
*Categories of the First Theme and Triangulation on Content of Regulations*  
 Note: The dashes grid mark (-----) notions the triangulation process.

This is made up of six parts, namely: use of organizational standards, enforcement of environmental laws, management of organization system and activities, reporting, evaluation of EA and sustainability. These six parts are discussed in the following sub-sections.

#### 4.2.1 Use of Organizational Standards

The analysis revealed that performance information is necessary for monitoring and evaluating operational business. It is for providing self-assessment information that should be delivered to government and identifying that the companies have a role in preserving the environment as stated in the Protection of Environmental Management Act (PEMA Act No.32, 2009). This reflects that there is an active role played by internal management in order to maintain environmental conservation using organizational standards (as seen in Table 4.1).

Environmental conservation in this study includes pollution prevention activities as defined by ISO 14001. Indonesia has adopted ISO 14001 and ISO 14004 which are known as SNI-19-14001-2005. Pollution prevention is included because it has a huge impact on environmental conservation which is caused by companies' activities (revealed by ER.14 on interview data on May 4, 2014).

This finding on the assessment of environmental conservation activities is evident on internal management and external stakeholders' interests. Thus, it can be used to set the environmental management system as the pivot for processing data for environmental activity in order to get useful information for internal management and stakeholders' interests. Hence, three aspects of internal function are stated by an accounting technical expert from Institute of Indonesia Chartered Accountants, which are as followed:

1. Organizational Aspect: “*Company establishes its own environmental policies and goals.*” (ER.16, Interview data, 2015)

2. Technology Aspect: “*Digital system and procedures for environmental management, known as environmental management system.*” (ER.16, Interview data, 2015)
3. Activity Aspect: “*Typical environmental management systems, including the ISO 14001 and the environmental activities assessment program.*” (ER.16, Interview data, 2015)

In addition, the cost structure is identified as one of the driving factors. Therefore, as the basis for formulating internal performance measurement, it is very imperative to understand the use of cost as supported by ER.16, based on the expert opinion from Institute of Indonesia Chartered Accountants (IAI). In this study, the cost is related to the establishment and operation of an EMS which consists of the cost of acquiring ISO 14001 certifications, preparation cost and personnel cost, that are directly related to maintenance or improvement in work-efficiency.

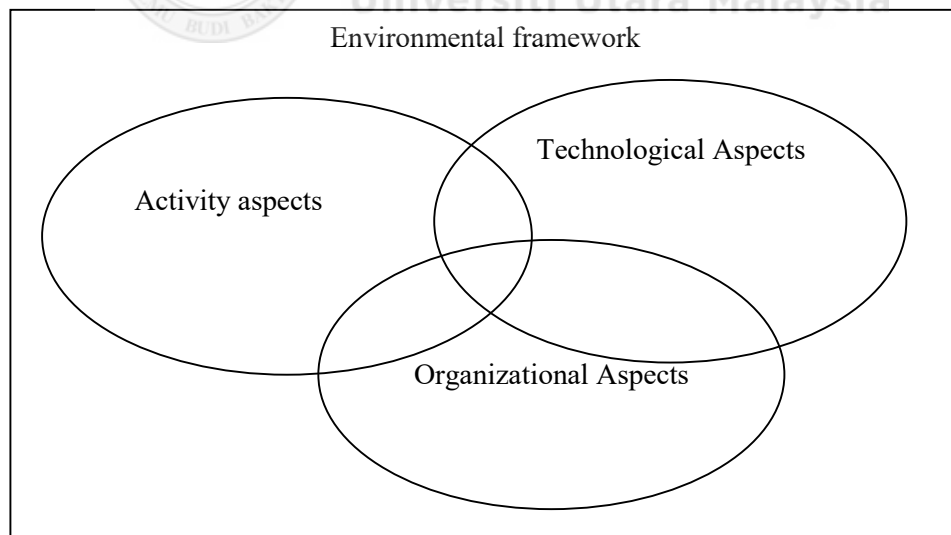


Figure 4.2  
*Interaction among Aspects of Internal Function*

Figure 4.2 summarizes the interaction of the three aspects. The aspects are useful to classify measurements using the projected diagram (it is related to the company program following SNI-19-14001-2005). The intersection in Figure 4.2 is the representation of interconnection among three aspects (organizational, technology and activity).

#### **4.2.1.1 Organizational Aspect**

Organizational aspect has emerged from the phrase “policies and goals”. The management of internal control in terms of internal policies has been found to include defining the framework, time of implementation, funding allocation and the targeted result. However, the organizational structure can be adjusted for supporting the continuance of the specific internal policy, such as integrating the environmental matters in the management system and operational procedures. Further explanation is revealed by ER.16 as an expert of accounting technique from Institute of Indonesia Chartered accountants (IAI):

*“organizational participation is to design a system that includes environmental matters. This condition can be seen in the procurement of environmentally conscious parts that are designed in accordance with a company’s proprietary specifications.”*  
(ER.16, interview data, 2015).

The organization’s role is to establish environmental policies and goals. It is associated with identification of specifications of the environmental elements and their application on business operations system. Stages of system design and operational procedures related to the planning, implementation and evaluation of environmental

conservation in the accounting scope are not determined by the regulator. It is left entirely to the company's discretion.

#### **4.2.1.2 Technology Aspect**

It emerged from the words “digital system and procedure”, that referred to technological aspect. There are two major aspects that are used to support company performance, namely tangible and intangible assets. A tangible asset can be in the form of technology which is in physical entities; whereas intangible asset is the idea and innovation which are the non-physical entities. The technology aspect can be in the form of strategic tools that can reduce error, fraud and increase the accuracy of work. This is pointed out by the KLHK that for greener production process, there must be a well-developed EMS which will take care of the procedures and processes. It is further explained by ER.16 as an expert of accounting technique from Institute of Indonesia Chartered accountants (IAI):

*“It is further stated that product development focuses on the development of environmental technologies which is aimed at increasing conservation of the environment.”* (ER.16, interview data, 2015).

It is noted that the regulator considers that a company often pursues sales targets without regard for the environmental impact. The higher the production volume, the higher the volume of waste produced. Thus, the regulator considers the environmental element in installing new technology to enhance production capacity. Although an environment-friendly technology is more expensive than a non-environment-friendly technology, future operations would result in reasonable costs of production.

#### 4.2.1.3 Activity Aspect

It emerged from the words “activities and program” that referred to activity aspect. It is discovered that each regulator has a different perception of environmental activities. For example, the KLHK mentions activities to comply with environmental regulations that have standardized physical size per metric ton for air emissions; ph / m<sup>3</sup> for waste water; and cubic meters of solid waste, as revealed by an expert from the KLHK. This is expressed by ER.14 as an expert from Ministry of Environment and Forestry (KLHK):

*“Environmental conservation activities outlined in these guidelines include the pollution prevention activities defined by the ISO 14001. Indonesia adopted ISO 14001 and ISO 14004 to become SNI-19-14001-2005.”* (ER.14, interview data, 2015).

Furthermore, revelation from the Institute of Indonesia Chartered Accountants (IAI) through ER.16 about the system which corresponds to the classification of environmental cost is based on business activities or conducted as cost objective.

*“However, cost that is a part of normal business activities, such activities related to pollution prevention activities, are categorized, based on their individual cost objective.”* (ER.16, interview data, 2015).

ER.16 as an expert in accounting technique suggested that the cost objective should be associated with environmental activities. Activity determines whether the product (results) of EA is good and how the performance is measured. Consistency and continuity are two things that are emphasized by the regulator for environmental conservation activities by companies, consistent with major accomplishments and

innovation or some kind of breakthrough, so that it becomes sustainable or continuing practices.

Classification process is defined through determining activities' characteristic or by setting reliable framework as the objective standards, offering guidance for practices. The objective standards are for environmental compliance, SNI-19-14001-2005, adopted from ISO 14001 and ISO 14004. Under these standards, the company can classify its activities and allocate its funding based on the classified activity. Keeping activity pertinent to an objective standard is to obtain benefits and to support business sustainabilities.

#### **4.2.1.4 Regulator Aspect**

The regulatory role and the external function determine the regulations (see Figure 4.3). The role of the regulators (IAI and OJK-RI) is as accounting standards setter. For example, the Financial Services Authority (OJK-RI) has the authority on the business permit and stock exchange monitoring; while the KLHK has authority over environmental laws. The regulators assess and give permits to the company to obtain business licenses. This is due to the constitutionality of the law that the sole legitimate authority on the environmental is KLHK; that exerts power on the statutory substance of physical environmental standard, as revealed by ER.15 as an expert of company assessment and compliance from KLHK:

*“Based on the latest KLHK Law (PerMenLH 3 Year 2014) with greater clarification of external function, clarification of requirement for organization achieving higher level in environmental performance.” (ER.15, interview data, 2015).*

The environmental standard is set by the Ministry of Environment and Forestry (KLHK). Therefore, regulator aspect refers to assessing the procedures being followed by its members, such as private companies, state-owned enterprises and multinational companies that operate in Indonesia. Physical standards are regulated for reducing environmental impact and protecting natural resources as revealed by ER. 15 (communication with an expert of company assessment and compliance from KLHK):

*“Environmental pollutants are substances regulated by various laws or standards. They include the substances whose concentrations meet certain standards, such as the smoke emission standard specified in the Air Pollution Control Law, the standards for control of listed substances specified in the Air Pollution Control Law, the effluent standard for health management specified in the Water Pollution Control Law and the emission standards for the control of exhaust gas and wastewater specified in the law concerning special measures against Dioxins.”* (ER.15, interview data, 2015)

Regulators have a responsibility to maintain public interests by controlling company activities related to community rights. Some of the interests of external stakeholders are considered by the regulator. Environmental issues are totally under the discretive powers of the government. Therefore, companies have responsibility for implementing government regulations and they are accountable for raising public trust.

The regulations consist of requirements for a company to gain (or extent) business lisenca in Indonesia. Figure 4.3 shows the intersection of external function (regulators aspect) has an association with internal functions (organizational, technology, and activity aspect) that provides generalized physical standards (mentioned in laws that



are confirmed by ER.15) of the environmental matter; however, not on accounting standard.

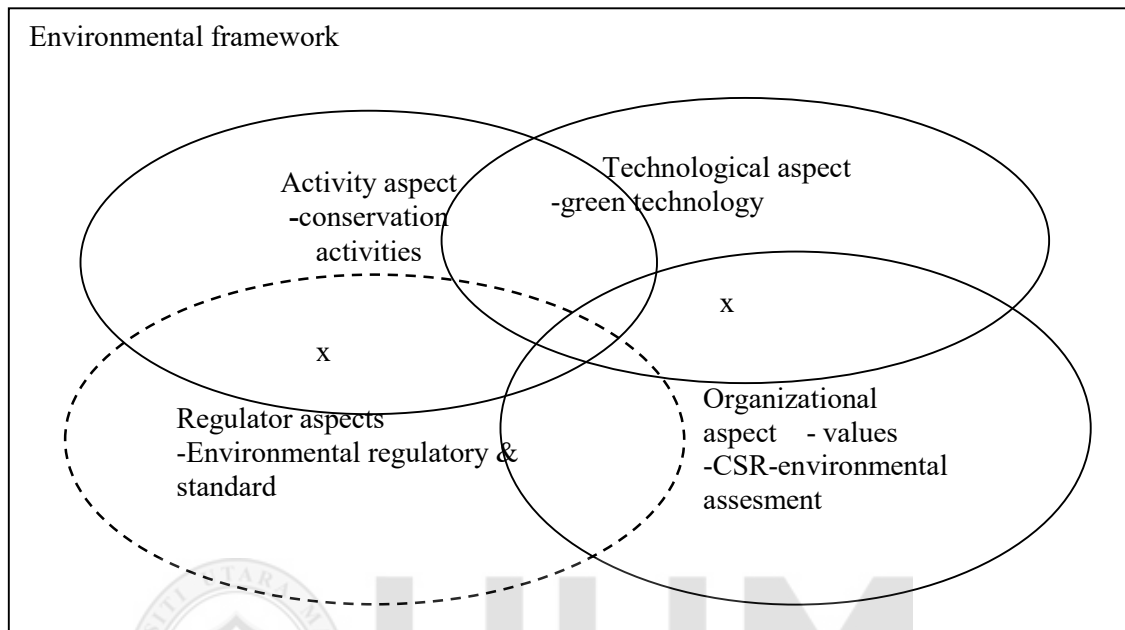


Figure 4.3  
*Regulators as External Function*

Linked to standards on EA, regulators have few regulations and do not yet have a mandatory policy. In spite of that, the government expects companies in Indonesia to pay attention to social and environmental factors in their internal policies. If they do not comply with the regulations, then there is a risk that will impede future business continuity. That is due to the policy coordination among regulators. The statement from a regulator, ER.12, a senior specialist of accounting standard from the Ministry of Finance, is that:

*“..it has a strong influence on the overall economy through the functions of financial services, such as saving, lending, investment, entrustment and insurance...”* (ER.12, interview data, 2015)

The Ministry of Environment and Forestry (KLHK) has the policy coordination with the central bank (Bank Indonesia or BI) on a requirement relating to credit productive assets, including the capacity terms of credit. Environmental aspects become a consideration in credit assessment. This agreement is followed-up and backed-up by BI, Regulation Number 7/2/PBI/2005 on the rank determination of the quality of assets for commercial banks and Number 8/21/PBI/2006 for the commercial bank under Sharia principles. According to regulation in Article 10 paragraph (1) (e) of BI Regulation No.8 / 21 / PBI / 2006, one of the criteria in the assessment of business prospects is consideration for customers' demand on environment matters, in particular, large-scale company whose activities should confirm management's efforts in reducing environmental impact. This is in line with the explanation of Article 8 of Law No. 7 of 1992 concerning Banking as amended by Act No. 10 of 1998, which among other matters states the need to authorize financing loan by financial institution is dependent on the result of the Environmental Impact Assessment (EIA) for a company's large-scale or high-risk business, such as mining, forestry, and using natural resources as main materials for production process.

Using the EA tool, the regulator allows the company to monitor all activities relating to the environment within the company policy as expressed by ER.16 that:

*“However, for those companies newly adopting environmental accounting, at the onset it may not be possible to account for necessary environmental conservation cost based only on objective standards, as the environmental accounting system itself might not be fully set up.” (ER.16, interview data, 2015)*

The objective standard that is mentioned by ER.16 refers to current regulations or mentions about principles in Indonesian GAAP.

#### **4.2.2 Enforcement of Environmental Laws**

Laws or the government regulations regarding the environment in Indonesia were not new enactments. Since 1998, the Indonesian government has been regulating and implementing environmental quality standards. The great insistence is of global interest, as the external forces, slowly but surely, affect the business continuity.

In fact, Indonesia has a mandatory regulation for environmental conservation under Ministry of Environment and Forestry. But cross-ministerial coordination is not an easy thing. The Capital Market and Financial Institutions Supervisory Agency (OJK-RI) gives insights into EA in business activities that may be the input for the adoption of the environmental policy in Indonesia. The environmental and social factors are concepts arising from public rights. It is the duty of the government to manage public interest, while the company's interests are for profitability which is quite different from public interests, i.e., a safe livelihood, free from pollution etc.

One of the conditions implied in Law Number 8 of 1995 on capital markets is ex-ante listing on stock exchange institutions. A company engaged in the manufacturing industry should have an Environmental Impact Assessment (EIA) certificate and should not create environmental pollution problems. Listed companies which are engaged in the forestry industry must have a certificate of eco-labelling (environment-friendly). Another Act for environmental business is Government Policy Number 27, Year 2012 which supports the Protection of Environmental Management Act Number 32, Year 2009. It regulates the environmental requirements to obtain a business permit.

Environmental Permit is a license granted to people who do businesses and / or activities with mandatory EIA in order to protect the environmental as a prerequisite for obtaining business permits.

Data reveals that under requirements of PEMA No. 32 of 2009, a company cannot operate a business if there is negligence in environmental conservation that causes environmental damage. The environmental protection is one of the national policies in Indonesia; so there is a political "force" on the management of state-owned enterprises, private companies and multinational companies in Indonesia, to follow laws and current regulations. Even for the planning of the funding allocation for reducing the environmental impact should follow the existing regulations. An expert of corporate assessment and compliance from KLHK (ER.15) revealed that:

*“Generally, Indonesia environmental law regulates about what is environmental in business, how to measure environmental impact, who have a responsibility to report.”*  
(ER.15, interview data, 2015).

From this, it is noted that there are three phrases mentioned by the regulators: 1) what environmental aspects in business are associated to cost structure; 2) how to measure environmental impact associated with performance measurement; and 3) who has a responsibility. Using content analysis is to answers to these three questions are summarized in Table 4.1.

Table 4.1

*Content of the Protection of Environmental Management Act No.32 of 2009*

<b>Classification</b>	<b>Amended the Environmental Management Act No. 23 of 1997 (11 Chapters, 52 Arts.) *ratified to the Protection of Environmental Management No. 32 of 2009 (17 Chapters, 127 Arts.)</b>	<b>*Accounting perspectives</b>
National Environmental Policy in PEMA	<ul style="list-style-type: none"> <li>• Environmental management is an integrated effort (Art. 1(2))</li> <li>• State's Responsibility Principle over natural resources (Art. 3(1), Art. 8(1)) Sustainability Principle (Art. 3(2))</li> <li>* Principle of Exploitation (Art. 3(3)).</li> <li>* State's Responsibility to Determine National Policy on Environment in an integrated manner (Art. (9)) Environmental protection and management plans (Art. 1(10))</li> <li>* Monitoring plans (Art. 1(12))</li> <li>* Strategic environmental assessment (Art. 15)</li> </ul>	* Regulatory cost and disclosures
Environmental Administration	<ul style="list-style-type: none"> <li>• Determine national policy on environmental management in an integrated manner (Art. 8, Art. 11).</li> <li>• Integration of environmental management and policy at the national level (Art. 11(1), Art. 12(1)).</li> <li>• Deconcentration (delegation of authority to local Central Government offices) (Art. 12).</li> <li>• Decentralization (transfer part of authority and matters of Central Government to local governments (Art. 13)</li> </ul>	* Performance and disclosure
Environmental Administration	<ul style="list-style-type: none"> <li>• Determine national policy on environmental management in an integrated manner (Art. 8, Art. 11).</li> <li>• Integration of environmental management and policy at the national level (Art. 11(1), Art. 12(1)).</li> <li>• Deconcentration (delegation of authority to local Central Government offices) (Art. 12).</li> <li>• Decentralization (transfer part of authority and matters of Central Government to local governments (Art. 13)</li> </ul>	* Performance and disclosure

Table 4.1 (Continue)

Classification	Amended the Environmental Management Act No. 23 of 1997 (11 Chapters, 52 Arts.) *ratified to the Protection of Environmental Management No. 32 of 2009 (17 Chapters, 127 Arts.)	*Accounting perspectives
Environmental Rights and Duties	<ul style="list-style-type: none"> <li>• Right to a good and healthy Environment (Art. 5(1))</li> <li>• Right to Environmental Information (Art. 5(2))</li> <li>• Right to play a role in Environmental Management (Art5(3), Art. 7).</li> <li>• Duty to preserve and protect the environment (Art. 6(1))</li> <li>• Duty to provide true and accurate information (Business and/or activity) (Art. 6)</li> <li>• *Labeling as eco-product (Art.43(3))</li> </ul>	* Cost and disclosure
Enforcement Measures Investigation	<ul style="list-style-type: none"> <li>• National Police and Civil Investigator Officer for Criminal investigation (Art. 40).</li> </ul>	* Performance
Damages and Compensation	<ul style="list-style-type: none"> <li>• Polluter's Pay Principle (Art. 34(1))</li> <li>• Damages and Compensation of Recovery Cost (Art. 34)</li> <li>• Strict Liability (Art. 35)</li> </ul>	* Regulatory (Environmental remediation) Cost
Environmental Dispute Settlement	<ul style="list-style-type: none"> <li>• Through the Court-based settlement (Art. 34)</li> <li>• Out-of-Court based settlement procedures (Art. 30~39)</li> <li>• Class action ((Art. 37~Art. 38)</li> </ul>	* Other regulatory cost
Environmental Auditing	<ul style="list-style-type: none"> <li>• Environmental Auditing (Art. 28).</li> </ul>	* Performance measurement
Sanction	<ul style="list-style-type: none"> <li>• Administrative Sanctions by Governor &amp; Head of the Level I Region (Art. 25~Art. 27)</li> <li>• Criminal Sanction</li> </ul>	* Regulatory (Fines) Cost
	<p>* Enterprise (Maximum raised to 15 billion Rupiah and 15 years of imprisonment (Art. 106)</p>	

Table 4.1 (Continue)

Classification	Amended the Environmental Management Act No. 23 of 1997 (11 Chapters, 52 Arts.) *ratified to the Protection of Environmental Management No. 32 of 2009 (17 Chapters, 127 Arts.)	*Accounting perspectives
	<ul style="list-style-type: none"> <li>* Individual (Max. Raised to 10 billion Rupiah and 15 years of imprisonment (Art.108)</li> <li>* Government Official (Maximum raised to 500 million Rupiah and 1 year of imprisonment (Art. 112)</li> <li>* False information is given on monitoring and law enforcement process related to environmental protection (Maximum raised to 1 billion Rupiah and 1 year of imprisonment (Art. 113)</li> </ul>	
*Economic elements	<ul style="list-style-type: none"> <li>* Allocation of funds for environmental protection (Art.43(2a))</li> <li>* Tax refund (Art. 43(2b))</li> <li>* Insurance (Art. 43 (2c))</li> </ul>	* Investment and benefit

Source: Sakumoto (2004, p.218-219) with changing of content the PEMA No.32 Year 2009 with symbol (\*)

National environmental policy depicted in Table 4.1 is a general policy on government authority to monitor, assess, arbiter liabilities or transferable liability between inter government agencies (central and local), and as a legal authority to sue people/ company/local government who commit hazards to the environment. In accounting perspective, it is related to adherence of regulatory cost and the urgency of environmental disclosure (ED).

Environmental administration described in Table 4.1 is related to government agencies and delegating authority from central government to local government. This is to simplify performance assessment and report the ED by firms in local area to government.

Environmental rights and duties described in Table 4.1 consists of citizens/public and private entities and government agencies indicating how to follow and use their resources based on regulation to protect the environment. In accounting dimension, rights are related to ED and duties are related to costs.

Compliance measure described in Table 4.1 is shown as the physical standard related to environmental performance. Performance measure standard is needed to value and classify environmental costs in the accounting perspective.

Enforcement, measures, and investigation shown in Table 4.1 are functional aspects reflecting the law enforcing agencies as part of government authority. The aspects emerge from government's authority to assess entities related to performance, and how they should be followed in accordance with the current regulations.

Damages, compensation and environmental dispute settlement laid out in Table 4.1 mentions about regulatory cost that have to be paid by entities which have involved in detrimental environmental impact.

Environmental auditing refers to government agency who has a responsibility on environmental assessment based on environmental regulation standard. This is a different area from financial auditing, but financial auditing can be taken for assessment as long as government asks for it.

Sanction is divided as administrative sanction (fines) and criminal sanction. In accounting perspective, it is related to monetary and non-monetary expenditures. Such fines and cost relate to investigation of the court process cannot be deducted as taxation cost by entities.



Economic elements in PEMA No.32, year 2009 depicted that the government wills to make cross-sectoral coordination among various ministries. Table 4.1 shows that many elements that are stated about regulatory cost, investment, performance measurement and disclosure (reporting) as explained as follows:

#### **4.2.2.1 Regulatory Cost**

Each activity in the sphere of business is related to costs. The KLHK mandates activities in the Protection of Environmental Management Act (PEMA Act No.32, 2009). Regulatory costs have the characteristics based on function reducing environmental impact and quality of regulations. The costs described in Table 4.1 are divided into three categories of costs:

1. Preventive cost: Environmental conservation cost that is to preserve and protect the environment (Art. 6(1)), to provide true and accurate information (Business and/or activity) (Art. 6), environmental standards (Art. 14) (EIA) (Art. 15), waste treatment (Business and/or activity) (Art. 16), hazardous and toxic waste materials (Art. 17), licensing (Art. 18), labelling on eco-product (Art.43(3))
2. Punitive cost: Administrative sanctions by Governor & Head of the Level I Region or local governments (Art. 25~Art. 27), criminal sanction by central government (Art. 106-113)
3. Remediation cost: Polluter's pay principle damages (Art. 34(1)), and compensation of recovery cost (Art. 34) and strict liability to firms to operate business in Indonesia (Art. 35).

#### **4.2.2.2 Investment**

Allocation of funds for environmental protection (Art.43 (2a)) has been introduced but it is not clearly known how it can be appropriate for a company to apply. The only guiding principle about environmental investment is operational regulation of the Ministry of State Owned Enterprises regulation PER-09/NIBU/07/2015 about allocation of funds for partnership and community programs on maximum allocation of 4% from profit after tax. The investment should raise the return, in the Protection of Environmental Management Act (PEMA Act No.32, 2009) considering about economic benefits that denotes about Tax refund (Art. 43, paragraph 2b), and Insurance (Art. 43, paragraph 2c). However, economic benefits are not derived by entities before operational laws are regulated about EA. It is different for CSR that has operational law for supporting practices on Government Regulation No. 47 Year 2012 (PP No. 47/2012) on Social and Environmental Responsibility for Limited Liability Company (or PT). The items relating to a tax refund are given to CSR typically for public facilities, because the matter of reducing tax should be under the coordination between two ministries (KLHK and Ministry of Finance). Tax reduction for items used on environmental conservation should be given to support companies that follow environmental regulations.

#### **4.2.2.3 Performance Measurement**

Environmental performance under the Protection of Environmental Management Act (PEMA Act No.32, 2009) is covered under the physical unit. Physical measurement is not only used as basic unit for calculating funds allocation in monetary terms, but for special auditing processes also. Special audits are on environmental administration, determining national policy on environmental management in an integrated manner

(Art. 8, Art. 11), integration of environmental management and policy at national level (Art. 11(1), Art. 12(1)), enforcement measures investigation (Art. 40), environmental auditing (Art. 28), and strategic environmental assessment (Art. 15). The non-financial audit process is organized by Ministry of Environment and Forestry (KLHK). The auditor's background does not relate to accountant profession, but does more related to an environmental engineer. The results of assessment are reported to KLHK for PROPER (*Program Penilaian Peringkat Kinerja Perusahaan*) rating purposes. PROPER is a rating annual program that held by the Ministry of Environment and Forestry (KLHK).

To provide true and accurate information (Business and/or activity) (Art.6), firms should establish the reporting of rights and duties of firms on environmental management in an integrated way (Art. 1(2)), sustainability principle (Art. 3(2)), principle of exploitation (Art. 3(3)), environmental protection and management plans (Art.1(10)) and monitoring plans (Art.1(12)). The disclosure or reporting process (for KLHK requirement, not IAI requirement) is maintained by internal management under KLHK supervision.

#### **4.2.3 Management of Organization System and Activities**

The Protection of Environmental Management Act (PEMA Act No.32, 2009) does not include EA but regulators suggest management should include EA as a tool for supporting management. The clarification of the environmental standard from physical value to monetary value has not been introduced. Similarly, Institute of Indonesia Chartered Accountants (IAI) policy does not provide that, but suggests firms to set their own EA framework. A regulator revealed that EA is in the system of the

organization and management of activities, as revealed by ER.12 who is an accounting expert from OJK-RI that is quoted as follows:

*“It is the framework for integrating the accounting concepts of both physical units and monetary values and addresses the issue of cost performance. Also, in order to calculate the economic benefits of environmental conservation activities in monetary terms, specific calculation methods are described (cost versus benefit).”* (interview data, 2015).

The sentence, 'the framework for integrating' is to accommodate the concept of EA into the core of the managerial framework; and the sentence, 'and addresses the issue of cost performance' indicates the expected results of the system that is integrating the concept of EA can be accounted for reporting. Regulators know the type of business and production processes that affect the activity of the environment, as revealed by ER.17 who is an accounting expert from Institute of Indonesia Chartered Accountants (IAI) that is quoted as follows:

*“Activities related to environmental conservation and those related to controlling environmental impact vary depending on industry and business model.”* (ER.17, interview data, 2015).

The environmental conservation program should be embedded with management functions in monitoring, controlling and evaluation activities related. The program could be similar but may have different activities, such as the Environmental Management System (EMS). Different activities are related to different type of industries in Indonesia. The Indonesia Stock Exchange (IDX) classify them into nine

as follows: agriculture, mining, basic industry and chemicals, consumer goods industry, other industry, property and real estate, building construction, infrastructure/utilities and transportation, finance and trade and investment. Business models of the industries are different and classified by the ownership structure, such as holding company, a private company, joint venture, SOEs with limited liability corporation types.

#### **4.2.4 Reporting**

The Capital Market and Financial Institutions Supervisory Agency or *Otoritas Jasa Keuangan Republik Indonesia* (OJK-RI) mentioned about EA should be revealed in Sustainability Report and should be integrated in the Annual Report.

As shown in Table 4.2, the Capital Market and Financial Institutions Supervisory (OJK-RI) mentions EA as part of CSR report for facilitating communication with external stakeholders. An accounting regulator from OJK-RI ER.12 revealed that:

*“Through the reporting of its environmental accounting results, a company promotes environmental communication.”* (ER.12, interview data, 2015).

Indonesia has a non-governmental institution namely National Center for Sustainability Reporting (NCSR) which has the responsibility to develop and monitor the application of the GRI guidelines and assurance standards for accountability (AA1000). This institution may not necessarily affect the regulation in environmental and social areas; also it does not have the authority on accounting standards but helps companies to produce acceptable CSR reporting (the Sustainability Report),

meanwhile environmental reporting should follow Ministry of Environment and Forestry or KLHK requirements (DRKPL reports).

Table 4.2  
*Reporting Format for Environmental Aspect*

<b>Regulators</b>	<b>Financial aspect</b>	<b>Regulation based</b>	<b>Language applied</b>
Ministry of Environment & Forestry (KLHK)	Executive Summary of Corporate Environmental Report ( <i>Dokumen Ringkasan Kinerja Pengelolaan Lingkungan/DRKPL</i> )	PEMA No 32 Year 2009	Bahasa Indonesia
The Capital Market and Financial Institutions Supervisory Agency (OJK-RI)	Annual Report (the Sustainability Report is to be inside of Annual Report)	Law No. 40 Year 2007 on Concerning Limited Liability Company Law (Article 66), Capital Market Regulation No. X.K.6 Dated 7 Dec. 2006, and Finance Ministry Regulation No.316/KMK.016/1994	Bahasa Indonesia and suggest to international acceptance language (preferably in English)
Institute of Indonesia Chartered Accountants (IAI)	Financial Statements	Indonesia Financial Accounting Standard ( <i>Pernyataan Standar Akuntansi Keuangan/PSAK</i> )	Mandatory in Bahasa Indonesia and English (bilingual)

Hence, the communication on corporate governance is provided by state-owned enterprises (SOE-PT) in integrated format with financial statements in the annual report. It is stated in Capital Market Regulation No. X.K.6 Dated 7 Dec. 2006 (para. g.), “*Laporan tahunan wajib memuat uraian singkat mengenai penerapan tata kelola perusahaan yang telah dan akan dilaksanakan oleh perusahaan dalam periode laporan keuangan tahunan terakhir*”, that translated to “Annual report must include a brief discussion regarding implementation of corporate governance practices that the

company has undertaken, and also how it would be taken into consideration in the last financial statements period.” (p. 69).

Meanwhile, the Institute of Indonesia Chartered Accountants (IAI) as showed in Table 4.2 as triangulation between interview and content of PSAK (Indonesia GAAP) prefers firms to report EA as items in the Financial Statements without any additional CSR report. The reason is accountability of EA in CSR should be fit with Indonesian GAAP (or PSAK), and also information provided in the Financial Statement not to be contended with environmental regulations of Indonesia.

One example for daubed environmental conservation costs is the explanation according to the Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) 57 in the paragraphs 14 and 22 of the provision for estimated cleaning cost relating to environmental pollution. The company should disclose information about: 1) the present obligation that arises as a result of past events agreement; and 2) the release of resources containing economic benefits as a result of the settlement of liabilities.

This standard encompasses the necessity of recognition, measurement and disclosure of contingent liabilities and a contingent asset that can be recognized if there are laws on environmental conservation. Instead, there is a cost associated with environmental conservation but is not yet supported by environmental regulation. The vesting period as a result of the negligence of company fines is due to the company has not taken action on environmental conservation. This cost should not be recognized as environmental conservation costs.

Environmental conservation cost as regulator (IAI) mentioned is referred to cost objective (determining whether part of expenditure was used for the purpose of environmental conservation) and standards for determining the benefit obtained from cost (even though the purpose of the expenditure is not environment-oriented, there is some type of environmental conservation benefit obtained as a result of this expenditure).

On the other hand, the suggestion by Ministry of Environment and Forestry (KLHK) on economic value related to environmental conservation cost should be reported in Executive Summary of Environmental Corporate Report (*Dokumen Ringkasan Kinerja Pengelolaan Lingkungan/DRKPL*). The format of DRKPL follows the KLHK requirements, whereas the financial aspect should be reported in specific format (expected regard to accounting standard) to accommodate the economic value of environmental performance (EP). Data contained in the disclosure of EP as a baseline should be used to measure economic benefit (EcP). The baseline monetary measurement is from physical unit adjusted for the type of waste produced, as mentioned by the head of energy division KLHK (ER.14) that is described as follows:

*“Environmental conservation benefit is measured in **physical units** (as a baseline measurement). However, by assessing the economic value of environmental conservation benefit (EcP can be) measured in physical units (using as a baseline measurement).”* (ER14, interview data, 2015)

In spite of different format of environmental disclosure (ED) between accounting regulators (IAI and OJK-RI) and environmental regulator (KLHK), the information in EP and in ED should be in the similar content of meanings as an integrated format and



terms. The separated reports for each regulator requirement should provide the unbiased information. It is recognized by the regulator of the OJK-RI that biased information may arise when reporting or disclosure is set with improper measurements, revealed by an OJK-RI commissioner (ER.12) and his quote is reported as followed:

*“The attempt to show the greatest possible economic benefit by concentrating on the difference between the environmental conservation cost and the economic benefit may have certain significance for internal utilization regarding the flexibility of business administration items. But there are many items for which **the basis of estimation is unclear**, and there **are also many arbitrary items**, so it is possible that stakeholders may misunderstand the environmental accounting data.”* (ER.12, interview data, 2015)

The expert’s phrases “unclear estimation” and “arbitrary items” mentioned about the negative causation of mismanagement on accounting data regarding to environmental conservation cost would be impacted to misinterpretation of information.

#### **4.2.5 Evaluation of Environmental Accounting**

Based on the PEMA (Article 5 (3) and Article 7), a company has the right to play a role in environmental management. It means that the government provides the opportunity for companies to plan, organize and accommodate the environmental aspects into the management system, and therefore, the need for indicators of EA which can be used as a reference for evaluating the performance. There are sub-themes or categories of indicators of EA, whereas Indonesia has no specific accounting

standard that can be separated from other elements of the policy for the accounting treatment of the environment. Some rules of the Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) containing substantive information on the environment are as triangulation result in Table 4.3, PSAK 25 (para.11) established definitions, recognition criteria and measurement concepts of accounts in the context of financial reporting and it shall be determined consistently (PSAK Art. 25 para. 48).

Besides management indicators in general, environmental management requires accounting function to measure the risk of environmental impact in monetary value, to evaluate competitive data and to monitor ex-ante and ex-post data. Information generated from each function is used to support decision-making by management.

The ex-ante and ex-post evaluation of environmental performance and EA practices from other similar companies as described by ER.15, an expert from Institute of Indonesia Chartered Accountants (IAI) stated as followed:

*“When companies select their appropriate indicators, they can refer not only the environmental performance indicators presented by the Ministry of the Environment but also the information about environmental accounting provided by other companies in a similar industrial field.”* (ER15, interview data, 2015).

Evaluation is the process of assessment of the events that have occurred. The function of the assessment is to get information about a company's competitive value in the market. The process of assessment requires several conditions:

1. There is a transparent system for the internal management: “...*they can refer not only the environmental performance indicators presented by the Ministry of the Environment...*”

Firstly, a transparent management system is required to determine what action is needed to improve or maintain the existing indicators. When it finds out some weaknesses of company's performance, transparency is required to disclose to all levels of management. Also, value added is discovered from company performance, it should be an indicator of enhanced performance far beyond compliance (more than what regulation required). The benefits of transparency are to get feedback (from stakeholders) and fair allocation of responsibilities (among internal level management).

2. There is a legitimate external benchmark: “...*the information about environmental accounting provided by other companies in a similar industrial field...*”

Secondly, there is an external benchmark needed to get re-assessment on the environmental performance of the company's actual performance. There is no value added if a company is just evaluated based on a benchmark measure of subjective or internal perspective, as the terms, 'good', 'very good', cannot be used as valuable competitive information. Regulators require a benchmark created by the KLHK for the establishment of physical standards on the environment, such as the maximum limit to pollution. Companies can reduce pollution below the maximum limit and compare with the performance of other companies in similar industries. The comparison approach is competitive value-added information for management. It is

better if the company gets a benchmark for the implementation of the EA from other companies in similar industries in monetary value; hence there is an economic benefit which can be compared.

3. The consistency of indicators: *“companies select their appropriate indicators.”*

Thirdly, internal data shows the same indicators of the previous period. Although measurement of performance evaluation can be enhanced, the environmental indicators that a company uses for evaluating should be consistently adopted. Comparative indices do not provide reliable information if internal management changes the indicators many times.

The contribution arising from environmental costs as part of the present economic sacrifices is for future economic benefit. Future economic benefits as a result of applying EA should be measured properly (further explanation in Section 4.3.2). It is important to understand the company's needs, the financial and non-financial conditions of the company in advance on environmental issues. Preparation of management relating to internal reorganization and restructuring will impact on financial position, a factor that has previously been avoided by all companies. Regulators understand it; so they provide an opportunity for companies to conduct environmental and social aspects based on company policy. It is mentioned on DRKPL (*Dokumen Ringkasan Kinerja Pengelolaan Lingkungan/Corporate Environmental Report*) mechanism document which yields memos on:

1. *‘Pemberdayaan Masyarakat’* or ‘society empowerment’ “is information about classification of corporation activity related to the environment. The

information consists of the allocation of funding for each activity as additional information” (memo data point 1).

2. KLHK mentioned about value added benefit for corporation; “If the proposed activity, in order to meet obligations under the (environmental laws) regulations or is a standard that must be followed by the industry based on guidelines from the association sector (environmental regulator), the type of the event does not obtain added value” (memo data point 2).

It means corporations should do more than merely observing environmental regulation requirements, if they want to reach economic benefit. Environmental regulators provide general requirements as for protecting society from the environment impacts and not for protecting corporation assets alone.

#### 4.2.6 Sustainability

Regarding the consideration for sustainability related to EA, regulators (KLHK and OJK-RI) suggested two conditions that are;

1. An indication that shows the benefit of environmental activities that are linked to the impact of cost of production. The efficiency term in accordance with reducing dependence on natural resources and benefit will follow after reducing dependency on natural resources usage. This is revealed by a regulator from Ministry of Environmental and Forestry/KLHK (ER.13), that quotes:

*“ ..when environmentally conscious materials or parts are procured at a lower price than conventional material or parts, this indicates that*

*environmental conservation activities have become a fully integrated part of the company's goods or services.” (ER.13, interview data, 2015)*

It is evident that environmental cost is not a sunk cost but an opportunity cost which is fully absorbed in manufacturing or production. To select the appropriate environmental conservation activities in line with the strategic objectives of the company, the company needs to classify environmental conservation activities which support the activities of production and involve waste reduction costs.

2. Regulators suggest companies adopt standards that can accommodate the needs of stakeholders (monitoring function), as noted by ER.12, a regulator from OJK-RI that he stated as follows:

*“Examples of how environmental accounting can be of assistance to internal management that it allows management to monitor account balances to reduce waste disposal cost and recycling expenditure” (ER.12, interview data, 2015).*

The regulator (OJK-RI) did not give a definite description of public policy on the environment-related cost structure. The government emphasizes on supporting environmental and sustainability activities, such as waste management. Costs associated with waste management and waste utilization for production (biomass energy, water purification, recycled materials) can be controlled by the internal company practices so that it can be measured and compared between periods for the monitoring function.

A statement from accounting regulator (ER.16 as member of Institute of Indonesia Chartered Accountants (IAI) suggests the placing of the monetary value for environmental conservation activities in the disclosure or company reporting:

*“Economic benefits associated with environmental conservation activities can be measured in monetary value. These benefits shall be reflected in the profits of a company recorded on its financial statements.”* (ER.16, interview data, 2014).

Therefore, according to PSAK 1 paragraphs 102 and 103, measuring costs can be applied in one of the two ways available. The first method is based on the nature of costs that do not require allocation according to its functional burden, because it is attached to the object that has to be measured, such as depreciation and amortization. Second, the method considered as a function of costs, which requires the allocation of the burden of arbitrators (transferable obligator) and careful consideration. Considering the relevance of expenditures have consequences on P/L and other comprehensive income.

#### **4.2.7 Regulators’ Articulation on EA Practices**

The articulation by the regulators is a description of the previous explanations based on the interview triangulated with the content of regulations (environmental regulation and accounting regulation) that is shown in Figure 4.3. It emerged in a sentence of integrating reporting for economic, social and environmental activities. Regulators enforcement of the law and legitimacy is done through two statutory products stated vis-à-vis the regulation of the Protection of Environmental Management Act (see Table 4.1) and the Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) (see Table 4.3). ED in a

company's annual report must follow the regulator's policy. Even on cost structure that should be set by a company or associated the content of disclosure; the statutory obligation cannot be by-passed from Indonesia business practices. Regulators' articulation on EA practices on EA are considered as an important factor for EA practices.

Table 4.3  
*The Environmental Substance in Indonesian GAAP*

<b>PSAK</b>	<b>Paragraph</b>	<b>Description based on PSAK</b>	<b>Principle basis relate to value-added information</b>
1	24	Qualitative characteristics are the traits that make information in financial statements useful to users.	Presentation on Disclosure
	35	Substance over form	Recognition on transactions
	48	Presentation of the various elements of the balance sheet and profit and loss require a process of sub-classification	Presentation on Disclosure
4	2	Parent company serving in the separate financial statements are recorded as investments in subsidiaries, joint ventures, and associates	Presentation on Disclosure
	4	Record the investment at cost or in accordance with PSAK 55: Financial Instruments: Recognition and measurement	Method of recognition and measurement
	5	Definition of subsidiaries, associates, joint ventures, branch, subsidiaries entity, associated entity, parent entity, investment entity, business group, significant influence, shared service, control on investee, joint venture.	Subject of subsidiaries associates and joint ventures



Table 4.3 (Continued)

PSAK	Paragraph	Description based on PSAK	Principle basis relate to value-added information
	48	Consistency in the application of financial statements presentation	Presentation on disclosure
55	2 (h)	Measurement of financial instruments is excluded for loan commitments on PSAK 57	Method recognition and measurement
57	10	The definition of contingent assets, contingent liabilities, provisions, restructuring	Definitive object of accounts
	10 (a, b and c)	The definition of legal obligations and constructive obligations	Definitive object of accounts
	12	The provision method	Measurement method
	22	Cleaning cost of environmental pollution	Recognition

Source: Analysis results based on Statement of Financial Accounting Standards Indonesia Effective 1 January 2015, (*Pernyataan Standar Akuntansi Keuangan Indonesia Efektif per 1 January 2015*), Institute of Indonesia Chartered Accountants (IAI).

The Protection of Environmental Management Act set by the government (KLHK) includes environmental management, reporting and assessment of environmental activity that must be implemented by firms, individuals and officials. This law is the primary regulation for many operational laws that support for application in siness. However, the law has not been considered for cross coordination with accountancy standard setter. Implicitly, Table 4.3 shows the basic principle of PSAK 57 paragraph 10 – elucidates the environmental identification, classification and measurement which are expected to classify as the provisions (other comprehensive income), contingent assets and contingent liabilities. The PSAK provides the accounting principles for internal management to adopt it in their financial decision-making. This

can be seen from ER.16's revelation (an expert from Institute of Indonesia Chartered Accountants (IAI) that reads:

*“The relation with environmental conservation cost and the handling of provisions is under financial accounting, the conditions under which provisions (PSAK 57) can be established.”* (ER.16, interview data, 2014).

The format of disclosure shall be referred to PSAK 4 that governs the separation of the format related to the main and additional information. Meanwhile, the content of the reports shall have integrated meanings.

In the latest Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) of 2015, there is an article about the annulment of PSAK 33 on stripped soil activity in the production phase in open-pit mining and environmental management in general mining, replaced by financial accounting standard, i.e., PSAK 29 (ISAK 29). The old rule was seemed to be exclusive to only one type of companies. Additional revision of the PSAK 57 provisions such as contingent liabilities and contingent assets, which pragmatically provide space for EA to be applied to all types of companies.

Although there is a space for EA, it does implicitly refer to the environment as in the statement of PSAK 57 paragraph 10 (a) about definition of contingent liabilities, “Potential liabilities arising from past events and whose existence is certain to happen or not happen in a future event that is not entirely within the control of the entity”. This definition provides guidance to companies about responsibility for environmental damage. When the entity is not tied to environmental impact (because there is no

standard or regulation), the entity is not obligated to mitigate environmental damage. However, the activity that resulted in the damages will be tied to the new legislation and requires the company to handle the damages or when the company goes public, to cope with the damages. It means the causation to a constructive obligation for the company.

In PSAK 57, paragraphs 12 and 22 provide a method for measuring the cost of cleaning environmental pollution if the company must pay for the cause of environmental damage. PSAK 57 provides flexibility to the company considering the environmental aspects under the existing rules of PEMA Number 32 Year 2009. The regulation about the environmental management for businesses is stipulated by the KLHK.

Indonesian GAAP adapted to accommodate all interests, including the laws stipulated by the government. The reason is to avoid biased interpretation or counterproductive regulations between two statutory bodies from two different institutions. The environmental aspect is still part of the value-added information, not a primary instrument of financial statements. Thus, it should be known the content of the Protection of Environmental Management Act (PEMA) No.32 Year 2009 is to apply upon The Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan* or *PSAK*) regulations.

The EA practices cannot be separated from the role of regulators that some of the regulatory products are considered to be for protection of the society including the environment. Meanwhile, EA involves external parties to be internalized into organizational activity. The government is one of the external parties (besides the fact

that the government has majority ownership in the state-owned enterprises) that have legal authority for the arbitrage of liabilities. Arbitrage of liabilities is meant to establish that the regulator is the only party which has authority to transfer the liability from one to another, based on regulatory statements.

#### **4.2.7.1 Integrated Reporting for Economic, Social and Environmental Activities**

Based on Table 4.1, the Protection of Environmental Management Act in Article 1 (paragraph 2) states that environmental management must be prepared in an integrated way, as well as Article 8 and Article 11 which regulate the determination of national policies on environmental management. Meanwhile, PSAK 4 is about preventing bias in submission of reports associated with additional information that should be separated from reporting on primary information (as shows in Table 4.2). Both these rules (PEMA no.32 year 2009 of Article 1, paragraph 2 and PSAK 4) appear contrary in theory, but it is not so in practice. Even though, the Annual Report consists of Company Profile, Sustainability Report and Financial Report, the content meanings for the environmental information (EA) are expected not to be a misstatement and biased one for external stakeholders.

Although it has separate reports and the presentation style of the two reports are different (the Annual Report and the Executive Summary of Corporate Environmental Report or DRKPL), the content of each should be informative-linked. Data in the financial statements use the quantitative approach and they are provided in monetary value; these are supported by the management's statement on financial data in the qualitative disclosure. The Sustainability Report and the DRKPL are submitted in

qualitative forms that are supported by PSAK 1 paragraph 24 that the qualitative characteristics are the traits to provide information in financial statements.

Although the contents of annual reports set by a company have different characteristics, the format of the financial statements must be in accordance with accounting regulators' (OJK-RI as a Security Exchange Commission in Indonesia and IAI) stipulation; meanwhile, the Annual Report has been regulated for integrating the acceptable CSR report (the Sustainability Report) that is stipulated by the operational laws under Law No. 40 Year 2007 upon Concerning Limited Liability Company Law (Article 66), Capital Market Regulation No. X.K.6 Dated 7 Dec. 2006, and Finance Ministry Regulation No.316/KMK.016/1994 (source: supported data from OJK-RI).

#### **4.3 Research Objective Two: Environmental Accounting Practices**

The company's key factor on EA practices was derived from data interview as the second theme (see Appendix B). Appendix B shows themes from NVIVO model of internal management's perspective. Hereafter, triangulation with data documents is done by context unit (content analysis) (see Appendix D). The second theme is associated with the environmental accounting practices that are arranged by state-owned enterprises management. The categories or sub-sub themes derived from the second theme as the result from Nvivo model (see Appendix B) as seen in Figure 4.4 consist of: 1) Environmental improvement and **eco**-friendly products; 2) Growth and sustainability; 3) Compliance with regulatory laws; and 4) Improved standard operations.

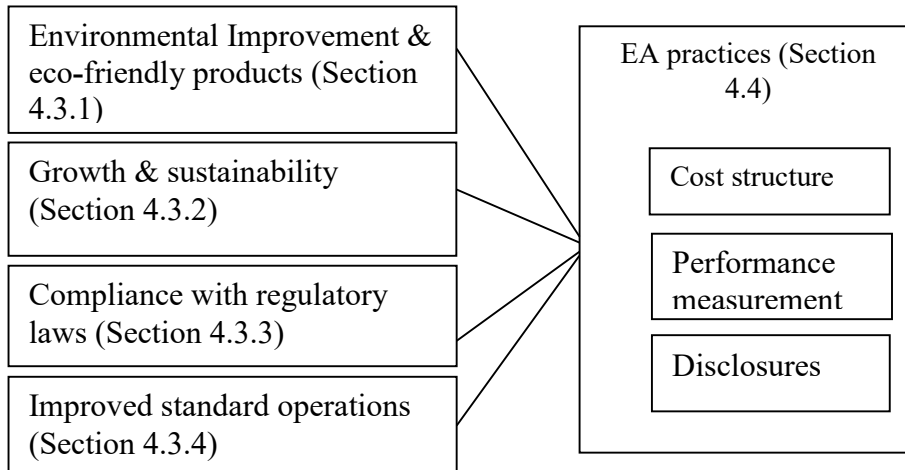


Figure 4.4

*Categories of The Second Theme and EA Practices (see the Nvivo model in Appendix B and Appendix C)*

*Note: the grid mark ( — ) means it has association with*

The above mentioned four categories should not only accommodate the articulation of regulators, but also should reconstruct the procedures of EA as considered by the internal management. These categories can be used to explain and illustrate company's description on these four categories as supported or associated with EA practices.

Internal managements have perspectives related with environmental aspect in general term and specifically terms in EA. Whenever talked about EA, internal management put term of the environmental as part of their effort to maintain environmental conservation.

The figure 4.4 set in based on NVIVO mapping result (see in Appendix B) and triangulation with document support such as the Annual Report (consisting of the sustainability Reports and Corporation Financial Performance Reports), The Financial Statements, and The Executive Summary Reports. Figure 4.4 focusses on the following:

- a. Environmental improvement and eco-friendly products which corporations consider from the environmental aspect as:
  - i. Business strategy in long-term
  - ii. Inclusion in value chain that company adds as part of environmental friendly values inside the operational process or daily activities.Further explanation is presented in Section 4.3.1.
- b. Growth and sustainability wherein both terms cannot be pursued as per-se outcome because the sustainable condition is related with market growth especially in international market places. Further explanation is presented in Section 4.3.2.
- c. Compliance with regulatory laws is maintained because regulator from KLHK does inspection on procedures, documents, and physical evidence of corporations. Regulator inspection becomes a motive for corporations to consider about market, ethical, and legal matters. Different compliance approach is followed by companies based on internal management discretion related with the reasonable background (market, ethical and legal). The aforesaid approaches are 1) adaptation approach, or/ and 2) adoption approach. Environmental aspect still follows CSR treatment as there are several regulations stipulating CSR. Further explanation is presented in Section 4.3.3.
- d. Improvement of standard operations which corporation intends to follow in strategic planning by reorganization and financial restructuring (see in Appendix I). Further explanation is presented in Section 4.3.4.
- e. The logic model from internal management's perspective to company's practices in EA is presented in Section 4.4.

### **4.3.1 Environmental Improvement and Eco-friendly Products**

The second perspective relates to environmental conservation benefits as deferred compensation of environmental conservation activities. It can be divided into internal benefits and external benefits. Internal benefit from environmental activities can increase sales income as a benefit of reducing the cost of goods manufactured, such as replacing regular electrical supply with biomass energy supply (see more detail in Section 4.4). The notion external benefit, such as increasing the good image about the company that can reduce conflict with any third party (community, customers, financial institutions, government). Environmental conservation benefit is based on how a company reduces the environmental impact from its business activities.

The synchronization between management plan strategy and people behavior to use the natural resources is engraved on the company's vision and mission. Both the companies subjected to research are engaged in their businesses using global marketing strategy. Both use the terms, "international" and "global" in their vision and mission statements as part of their long-term goal. For example, Company A has the vision to become a leading international cement company in Southeast Asia; its mission is (i) to develop the cement business and related industries that are orientated towards customer satisfaction, (ii) realize the international standards towards competitive advantage and synergize to increase the added value on an ongoing basis, (iii) be socially responsible and environment-friendly, (iv) provide the best value to its stakeholders and (v) build competencies through human resource development. Meanwhile, Company B has the vision to become a world-class global life science company, and its mission is to provide and develop the standards of the international life science products to improve the quality of life.



The knowledge of EA for Company A (as noted in the management statement of the Company A), resource allocation and assessment of performance are more specifically focused on “the category of each product” (Segment information C, Financial Report 2014, p. 46).

Company A has primary conservation activities related to production. It manifests corporate responsibility to maintain shareholders’ interest. As a holding company, every issue becomes a significant risk to the increasing operational expenditure because management should set a progressive business expansion. Management has a plan to expand the business into other areas that have resulted in public protest about the ecosystem. The community has assessed that the company had negative impacts on the environment and farmland. This has caused a delay in the process of expansion due to these external factors.

The environmental impact can be seen (Company A did not explicitly convey losses in monetary value) in the Financial Statements (Section on Management Statement 2013, p. 147) that initial risk experienced in 2012 became the starting point for the negative view of society until 2015. Although the expansion has not been realized, IDR 7.6 trillion has been allocated for it, with a target completion by the end of 2016. However, the completion of expansion was delayed because the community has a misunderstanding on environmental protection. This was expressed by the President Director of Semen Indonesia; he said that capex (capital expenditure) had gone up to IDR 5.9 trillion that year (2015) which raised the hidden cost from environmental impact (Indonesian Stock Exchange Jakarta, 2015).

Similarly regarding the knowledge of EA in the case of Company B CB.6, as the manager of public relation and internal policy of Company B reveals about their knowledge on EA, based on the progress of the company to include EA in the system.

1. They set the business strategy as stated in vision; “***Environment is our core business, it associates with our resilience products for human body.***” (CB.6, interview data, 2015)
2. They set the environmentally friendly value chain: ” ***Due to product quality standards are regulated by World Health Organization, we compete in terms of environmentally friendly products from upstream to downstream, starting with our vendors whose selection is done through their license, notable as green business.***” (CB.6, interview data, 2015).

Company A and B embedded the EA with production, and product.

#### **4.3.2 Growth and Sustainability**

The term of “sustainability” can not be interpreted per se with term of “growth”. Sustainable condition is related to market growth. When a company only has a domestic (national) market, it will have externalities issues at the national level. Herein, the government has sufficient legitimacy to prevent the risk from the externalities issue. As a consequence, if a company ignores it, legal sanctions will be imposed by KLHK (Ministry of Environment and Forestry can be enforced. However, ignorance on the externalities issue by a multinational is more complex. It will have economics impacts such as declining interest of foreign investors and foreign buyers, and competitors take over the market. Hence, the two companies, having multinational

markets use the Sustainability Report for publicity on CSR disclosure. This is the best effort to communicate with foreign parties about their companies' activities that their products are environmentally friendly. The disclosure uses a qualitative methodology for following management policies to provide information about the environmentally friendly business. This concern was expressed by Company-Community Partnership staff (CB.11) and to quote that:

*“The CSR report is important for foreign parties who become business partners. They wanted to know and see that the company's business processes are environment-friendly.”* (CB11, interview data, 2015)

Both companies can accommodate these two regulations the Protection of Environmental Management Act (PEMA) Act No.32, 2009 and Indonesian GAAP. They set DRKPL (mentioned in Section 4.2.4) but did not publish in companies' website, and in the annual report which has the sustainability report separately. Though, Company B has not consistently published the annual report every year in its website, Company B did not embed the environmental disclosure (ED) with the annual report in 2014 and 2015, as opposed to Company A that provides its compound report every year. It is the discretion of the management to set the compound reporting. Company A is a company listed on the stock exchange and the secondary market, while company B has not been listed.

The items of companies' ED showed in Table 4.4. Using content analysis, the Table 4.4 shows the differences in the contents of the sustainability reports of both companies which demonstrate different points of view concerning the objectives of

environmental reporting (ED), although GRI-SRG4 gives guidance of the general standard disclosures comprising Strategy and Analysis, Organizational Profile, Identified Material Aspects and Boundaries, Stakeholder Engagement, Report Profile, Governance, Ethics and Integrity, Disclosures on Management Approach, and Indicators (GRI-G4 Reporting, Principle and Standard Disclosure, p. 20).

Table 4.4  
*Comparison Content of Sustainability Report*

Sequence of content	Company A	The environmental aspect	Company B	The environmental aspect
1	Ex-post company performance	√	Company profile	√
2	Licensing	√	Licensing	√
3	Management strategic planning	√	Ex-ante and ex-post company performance	√
4	Company profile	√	Management strategic planning	N/A
5	Information for investors	N/A	GCG	√
6	Ex-ante and ex-post company performance	√	CSR	√
7	GCG	√		
8	CSR	√		

Source: The Sustainability Report Company A and Company B 2013 by content analysis

In Table 4.4, the company profile statement of Company A is placed on the fourth sequence. It means that the company has a stable market and its priority is on other aspects than displaying company profile. It is due to this factor that the company seeks to expand business, accelerate production and obtain raw materials. Another main aim

is to show good company performance as part of good corporate governance (GCG) policy goal to get a permit or extent permit from the local government. The environmental aspect is always associated with the raw materials needed for production. Therefore, the environmental aspect is the top concern and is attached in the initial part of the Sustainability Report. Despite its importance for investment purposes, the environmental aspect is not listed. The impact of environmental aspect on stock prices is not measurable. The environmental aspect is explicitly noted and could be traced to the financial statements of 2013, “Waste Heat Recovery Power Generation in the Cement Industry (WHRPG) with The New Energy and Industrial Technology Development Organization, Japan (NEDO)”, (p. 148).

This is in contrast to what is done by Company B. It arranged its company profile in the first part. Although the company is the largest producer of vaccine products in Indonesia, competing on image and labeling are still the company’s goals. The environment aspect is the major plan even in the company's vision. However, still it is the long-term plan of the company. The company was at the stage of enhancing the environmental aspects as disclosed in the Sustainability Report 2013, p. 80, "performing 2015-2016 strategic alignment policy to the environment aspect". That is the reason why top management’s strategic plans did not state about company strategy for incorporating the environment matters in 2013 and 2014.

#### **4.3.3 Compliance with Regulatory Laws**

Companies consider avoiding any legal actions, such as litigation related to restructuring processes that the environment and social issues are commonly engaged in. The reasons to avoid litigation are related to:

1. Market reason; “...we realize and we are aware of **having international market...**” (CB.10, interview data, 2015)

There is considerable evidence collected from the companies’ practical experiences. Company awareness of effective safety and health management in the workplace contributes to business success. Accidents and ill-health inflict significant costs, often hidden and underestimated, including compensation for loss due to hazard and mass demonstrations. Both companies conveyed the number of accident in their Sustainability Report with zero number reported. The report related to accident and ill-health numbers are easily captured by international stakeholders.

2. Organizational values and ethical reason; “**Profit, people, planet.** Because we realize that we have international market, we have to follow the requirements of international standards.” (CB.10, interview data, 2015)

Organizations have a responsibility and awareness to ensure that their ongoing business operations do not harm people and environment by following the international standards such as ISO 14000 for producing the quality product.

3. Legal reason; “Following all points stated in the regulation of the Environmental Ministry and reaching beyond compliance.” (CB.10, interview data, 2015)

The inspector or regulator examines the procedures and work practices documents and checks physically too, relating to an environmental issue as both companies are members of PROPER of KLHK. Companies have the responsibility to report activities related to the environment in DRKPL (*Dokumen Ringkasan Kinerja Pengelolaan*

*Lingkungan/Executive Summary of Corporate Environmental Report*). This report should be sent to Ministry of Environment and Forestry (KLHK) every year.

Two approaches are applied by companies based on their capacity to follow current regulations. The capacity is associated with licensing cost or other materiality costs.

1. Adaptation approach done by Company A. Adaptation approach on accounting system is occupied from outside or third party system to avoid increasing of capital expenditure. Set new system is expensive but taken from a foreign country could raise the arbitrage cost because of different accounting regulation. As revealed by CA.1 Head of CSR of Company A:

*“Regulation from government and policies from Board of Directors (BOD) should be of the same views. **However, with regard to accounting for social and environment, we have difficulties to follow. We learn from Japan but we do not adopt 100% like Japan. The approach is quite different. We have to follow the Indonesian GAAP (Indonesian Financial Accounting Standard).**”* (CA.1, interview data, 2015)

The standards must be followed by Company A that are from Indonesian regulatory authorities and the third parties (international counterpart) of which the company has been engaging an environmental program, assisted by professionals (accountant and engineer), to embed each substantive requirement.

2. Adoption approach as done by Company B. Adoption approach is fully adopted from third party system. Timing is considered reason to incorporate a new system. Company has strategic reason to comply with government

regulation that has been changing over time. It is revealed by CB.6 Manager of Public Relation and Internal Policy:

*”This has been followed by regulation from The Republic of Indonesia laws, but its number will increase every year. For example for CSR reporting, we follow GRI G-3 then in 2014 changed to GRI G-4. Then the Environmental Ministry increases its requirement about counting and reporting quality of conservation activities such as filling the emission form, reduction (energy, water usage), prevention of environmental impact form every week.”* (CB.6, interview data, 2015).

Another way to fully adopt the third party’s standard is to have a direct transfer of knowledge; company sends a team of experts from internal management to learn and apply all the standards. For example to satisfy GRI requirements, Company B sent its managers for training in the main office of GRI organization in the Netherlands.

#### **4.3.4 Improvement of Standard Operations**

“Without a standard, there is no improvement in the future” is the wise statement from the CEO of Toyota Motor Corp. Incredibly, Companies A and B can manage EA using internal function, where accounting standards do not provide EA guidance explicitly. Each company has different technology and operating procedures to manage the environment. It leads to different costs structure as well as different levels of results. Conformity between regulator’s articulations related to internal fuction consist of technology, organization and activity aspects can see in Table 4.5.



Table 4.5  
*Company's Key Factors on EA Practices*

<b>Key's Factor</b>	<b>Company A</b>	<b>Company B</b>
Technology	Explicitly mentioned to Environmental cost as EA practice by allocating to efficiency of nature resources usage (water, electrical, raw material which are environment-friendly) and reshape waste become alternate energy	Allocation cost for the environmental aspect is for efficiency energy by reducing energy usage and neutralization of used water before flowing outside.
Organization	Board of Directors committed to EA.  Established special task for the environmental monitoring under CSR department in the organizational structure.	Board of Directors committed to environmental matters in business  Established CSR department in organizational structure, but the environmental compliances do not consider in specific task. The allocation task governs together with developing economic community around the business site.
Activity	Develops EA self-assessment, separated from CSR; data is integrated with the production process, including facilities in system protocol, automatic data matrix (firm set an integrated system called Automation Document Control) and environmental activities glossary.  The bottom-line strategy is articulated and understood the terms on EA activities and other supporting tools, idea and activities, management integration system (Environmental Management System or EMS).  Adapting system from third party and justifying on the self-assessment EA design at company facilities and enhance account of environmental cost as third party (credit emission) and regulators suggested	Develop social and environmental self-assessment as part of CSR tool and part of the production process, manually data matrix, and environmental activities glossary.  The top-line strategy is articulated and understood the terms on EA activities and other supporting tools, idea and activities including social activities.  Adopting system from third party (international organization i.e. WHO, GRI)Reviewed on the self-assessment environment impact design at company facilities and recommends for the revision as regulators suggested

As shown in Table 4.5, relating to technology aspect through which the Company A engages with Japan and sets its system for EA as part of its agreement with the third party to generate alternative energy by adapting a new knowledge and technology. CA.4 as a manager of environmental division revealed:

*“It was learnt that **accounting system for the environmental protection is very important and useful. The Japan’s requirement is observed in 2012, a year before the equipment from Japan is completely installed in the company in 2013.**”* (CA.4, interview data, 2015)

Meanwhile, Company B provides an activity card for managing its activities on energy efficiency planning (reducing energy usage). CB.6 as Head of public relation and internal policy of Company B revealed,

*“**Commitment to energy efficiency is consistently implemented not only in production activities but also in operational activities, starting with energy-efficient office design. Air conditioning in the production areas (clean room) and storage space sterilizing systems should not be interrupted for 24 hours. It must be optimized using inverter technology that can adjust to the most efficient power consumption, especially at night. Indoor lighting uses energy efficient LED lights and basement lighting use solar power. Various green activities are also conducted in the Company’s environment such as making bio-pore holes for water catchment and testing vehicle emission every 6 months.**”* (CB.6, interview data, 2015)

The organizational aspect in Table 4.5 referred to restructure the organization (see in Appendix I of organizational structure of before and after companies have a policy related with environmental aspect). Reorganization is necessary for financial decision-making (restructuring capital) as part of corporation commitment to connote the environmental conservation costs. Both the companies intended to enhance their standard operational procedure (SOP) for engaging energy conservation, as revealed by a Head of the Environmental Monitoring Section (CA.4):

*“...Waste Heat Recovery Power Generation (WHRPG) in the Cement Industry. On this project, Japan asked the company for sending reports every year about the company's performance using WHRPG...”* (CA.4, interview data, 2014).

For energy conservation, Company A uses a program from Japan namely the Waste Heat Recovery Power Generation (WHRPG), and Company B uses activity card (monitoring energy usage). Although Company A and Company B use data matrix to manage environmental matters, both have different technology usage. For example, the use of technology by Company A is for converting waste into energy supply, but Company B is committed for reducing energy usage, for example, using LED lights.

There are three types of waste that can be measured in terms of form solid, liquid, and emission. However, only two forms can be counted into cost absorption, i.e., solid waste and liquid waste. The emission impact has yet to be calculated, especially by Company B. Company A has the policy to divide the community surrounding the plant sites into zones. The closest point is called Ring 1 which is within a radius of 1 km to 5 km from the plant site. Companies can cooperate with the local government or local health centers to support community health programs and record the number of

patients associated with factory pollution. This is the way to evaluate environmental impact on people in the surrounding areas.

The engagement of the environmental aspect and health-safety aspect relate with the embedded both aspect as one department in organization structures of Company A (see in Appendix I). In Appendix I, it is represented that corporate environmental and social management directs under BOD and Department of CSR directs under CEO. However, Company B restructured organization by setting CSR and Public Relations as part of sub-departmental under Department of Human Resources Management which has responsibility to manage the environmental aspect along with community development programs as part of internal management strategy to reduce social risks. This new structure can support for internal management monitoring and controlling routine operational.

To discuss the activity aspect as depicted in Table 4.5, it is noted that each key practice of EA is related to the company's understanding, management commitment, activity objectives, activities and resource allocation. Voluntary practices mean that every company has internal considerations by the current management than the organization wills. So, it is important to eliminate the gap between organization strategic plans and internal management's activity plans.

Therefore, it is quite different between Company A and B as to how they incorporate environmental elements into the production process. It is associated with the Board of Directors' (BOD) strategic plans. In Table 4.5 - Summary of key factors shows that, Company A tends to have a bottom-line strategy, while Company B is more of a top-line strategy.

The top line strategy refers to increasing gross sales or revenue. The first information in P/L statement is gross sales. That is the term of the top-line strategy implemented. Therefore, management sets the long-term strategy to get accredited documents for supporting top-line growth. For Company B, most of the investment in the environment is to get a licence. It can be seen in Company B's Sustainability Report 2013 that allocation for 'WHO and GMP' assessment is IDR 50,654,000,000 and for Wastewater treatment plant/health safety/environment (asset) is IDR 1,632,000,000. The company relied on its green license to improve and accommodate its economic growth.

The bottom line strategy is a common term for reaching net profit because this figure is found at the bottom of the P/L Statement. It is widely considered as the most comprehensive measure of a company's profitability because it encompasses all expenses and income streams for the current period. Businesses always look to maximize their bottom line, whatever possible, which means that either by increasing revenue or by decreasing expenses. Conversely, if a company's bottom line shows a decrease from one period to the next, it is an indication it has suffered a dip in income or a surge in expenses. Another way to increase the bottom line is to reduce expenses or look for ways to improve efficiency. Finding less expensive sources for raw materials, reducing the workforce, relocating to cheaper facilities and streamlining administrative operations are all strategies companies employ to cut costs. On 31 December 2014, Company A had an expenditure of IDR89,216,346,000 for the infrastructure and support equipment which are recorded as fixed assets (Note 15 on the Financial Statements 2014, p.142) and IDR118,000,000,000 granted in 2013 from Japan for electrical resources and emission reduction. Company A applied for a mining

business licence in 2013 totaling IDR 738,181,498,000 to start a business in Vietnam. The kind of license is related to expanding and obtaining resources for production. The aim is to reduce the cost of production, and improve the financial performance.

#### **4.4 State-Owned Enterprises' Practices on Environmental Accounting**

The general themes (see Appendix C) give the overall framework of what and how EA exists in practice as in the case of both Company A and Company B (as regulators suggestion for EA is to be the part of the additional information as explained in Section 4.2.5).

Appendix C shows that each category from each theme supports the main idea associated with the procedure on EA practices. The description of the procedure on EA practices by both companies as depicted in Figure 4.4, the association among the main ideas of the procedures in the practice of EA in the form of cost structure, performance measurement, disclosure or reporting.

The following sections explain the EA practices by triangulation of primary data and secondary data in the form of internal documents downloaded from the company website. Sequentially, the explanation of procedures of EA practices starts from company A, then Company B.

##### **4.4.1 Company A**

Company A is a holding company and a listed-company which primary production is cement products. Further explanation about Company A profile can be found in Section 3.3.2 (Sub 4). Hence, the identification of participants is stated in Appendix A.

#### 4.4.1.1 Cost Structure in Environmental Accounting

Data as in Appendix D with symbol ‘a√’ represents the main idea of cost structure in EA as revealed by CA.3, a data engineer from Company A:

*“...measuring the costs of environmental and expenditure activities and using this information for environmental management decisions...”* (CA.3, interview data, 2014).

Whether a specific individual cost can be classified as an environmental conservation cost depends on the objective standards. Objective standards are based on the association between business activities and environmental impact which are the criteria for classifying cost that has been spent for the purpose of environmental conservation. Data revealed from Annual Reports 2012, 2013, 2014 and from observation of the CSR department, internal management gave the researcher a blank document sample that KLHK provides to every firm under PROPER assessment to monitor the environmental impacts (see Table 4.8).

Table 4.6 shows classification and definition of the cost associated with environmental conservation activity that the companies include in business operations. Key business operations are not only end-of-pipe approaches but also a cleaner production approach, i.e., the series of activities covering the purchase of materials and services, manufacturing and distribution, sales and supply, but excluding administrative, R&D and social activities. As shown in Table 4.6, there are four accounts classified as: 1) absorption cost; 2) cost under organization dimension; 3) contingent cost; 4) investment and other comprehensive income.

Table 4.6  
*Classification, Definition, and Content of Cost Structure*

<b>Accounts classification</b>	<b>Definition</b>	<b>Content</b>	<b>Financial Statements</b>	<b>Source of term finds in</b>
Absorption cost	Environmental conservation cost to control environmental impacts which result from key business operations within the business area	biomass cost, transportation biomass outsourcing,	P/L	Sustainability Report 2014
Cost under organization dimension	the private cost of the company plus an additional external cost generated by the production and operational cost that are not incurred in the production process	the cost of waste management, the cost of emission management, the cost of external services for environmental management	P/L	Sustainability Report 2014, 2013
Contingent cost	costs arise from two conditions, called the legal obligations and constructive obligations	Clean Development Mechanism, Joint Credit Mechanism	P/L	Sustainability Report 2014
Investment	allocation of environmental conservation funding	Fixed asset, grant	Balance Sheet	Sustainability Report 2014
Other comprehensive income	contingent revenue derived from the investment of third parties	Certified Emission Reduction (currency translation difference from exchange account)	Balance Sheet	Sustainability Report 2014 and Financial Statements 2014



### *Absorption Cost*

In practice, it describes how the company treats its environmental aspects, which include management commitment, support of related programs and customer demands which lead to companies to address EA with different values in it. The management provides its annual report which includes the sustainability report with environmental cost data and better environmental and business decisions. To facilitate the internal policy, the company has strengthened its organization structure.

The prospects for adopting EA are enhanced by its relationship to several important programs and environmental activities at Company A, including Total Quality Management (TQM), Environmental Management System (EMS) and Activity-Based Costing and Management (ABC/M). These programs can enhance management strategy for managing its productivity and waste.

Company A absorbs the new energy cost in its production and the contribution is 20% of total energy cost. It is stated as general cost and is allocated to production of based-line products. The term of “environmental cost’ did not appear in the Audited Financial Report’ but stated in the Sustainability Report 2014. It is counted as management accounting approach, because it is determined the target costs that management has a plan to increase the absorption of the biomass energy at the end of 2016 to become 60% from total energy needs (the Sustainability Report 2014, p. 77), Whereas to manage absorption costs in production, it should be under cost accounting approach. Company A comments about a management strategy to move from shallow disbursement cost to productive approach through innovation strategy. It is part of

company concerning to social and environmental responsibility”. As conveyed by CA.1 Head of Corporate Social Responsibility:

*“It is one program that has been running for a cement company that produces environment-friendly products, and measuring the costs of environmental and expenditure activities and using this information for environmental management decisions”.* (CA.1, interview data, 2015)

Besides an electrical installation machine using biomass supply from its own waste materials produced, it needs to buy the waste or biomass from other companies around the plant site. Company A should record this as shown below:

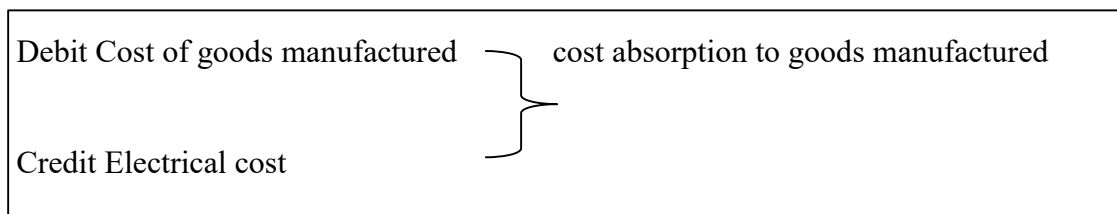
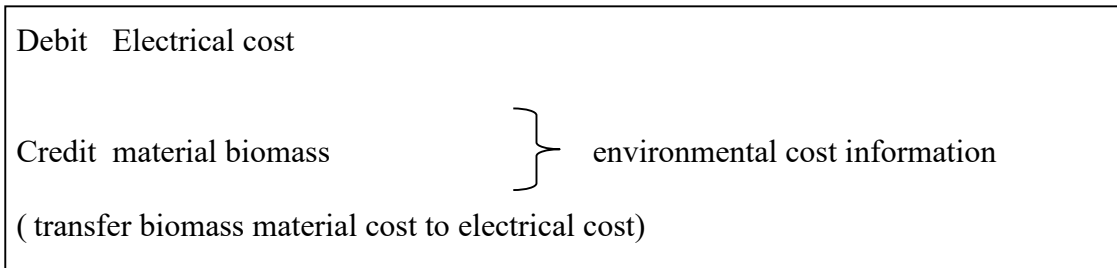
Debit	Material biomass	}	Period in historical based
Credit	Cash		
(collecting solid waste from company and around plant site which needs to buy as additional materials)			

Source: Analysis of the Annual Report 2013-2014 Company A

The calculation unit for converting waste into energy supply should be based on the functions of the cost, such as man-hour cost and machine hour cost to total unit production (the biomass). Other relevant costs for biomass production should be added, such as transportation cost and maintenance cost of the machine.

In Company A, cost of transportation and maintenance cost are not included as biomass cost because machine and trucks for biomass processing are integrated in

regular production. Transportation cost from outside or sub-contracting cost of specific waste transport should be added as biomass cost.



Source: Content analysis of the Annual Report 2013-2014 Company A

Environmental cost information contains any activity relating to green efficiency transferred to the cost of production, such as material biomass and other related elements such as liquid waste (used water) to be the water for the cooling system.

The practices of Company A on environmental cost is treated as absorption and efficiency cost. This activity related to reshape solid waste become energy supply.

### ***Cost Under Organizational Dimensions***

Company A is a national cement company that became a multinational company when engaged in Vietnam to apply the environment account. Its account stated about “over IDR 5.18 Million has been allocated by the Company and each of its subsidiaries for preserving environment” (stated on Sustainability Report 2014, p. 9).

The cost under organization dimensions are defined as the private cost of the company plus an additional external cost generated by production and operations that are not incurred by the producer but have the hidden risk for company if not charged. Therefore, the company has a risk management department to handle unpredictable issues linking the company to external parties.

In 2012, Company A included environmental costs into its operational costs for the first time. Environmental costs are divided on the basis of source and destination activities into three parts, namely: 1) the cost of waste management; 2) the cost of emission management; and 3) the cost of external services for environmental management (stated in the Sustainability Report 2014, p. 88).

Firstly, in the content information in the Annual Report 2014, cost of waste management relates to reducing hazardous and toxic solid waste by converting it to biomass energy (explained in section 4.4.1.1, Sub A). Company A has been installing new technology to the energy sector. With the cooperation of the society surrounding the plant sites, Company A has been able to innovate and develop environment-friendly energy. In 2014, as part of a financial commitment to a new technology, the biomass supply was obtained from other companies.

Since the installation of water purifier is still under construction in 2013 and 2014, all expenditure related to its construction should be recorded as acquisition cost of the machine under, “construction in progress”. It will be capitalized on the date when the construction is completed. Furthermore, companies build up provisions for future payments, such as severance payment or refurbishment. These are future expenses the

company will incur but for which an exact amount is unknown and yet to paid; it should be in the accounts as accrued expenses.

Company A received a grant as a cooperation in the Joint Mechanism credited with JEE of Japan in 2013 amounting to IDR118 billion, for the replacement of the production machine with a new one that is more environment-friendly. This new machine will be used in 2016. Since 2014, the installation of machinery capitalized as construction in progress showed a high value (end of 2014 reached IDR551,417,768,000, and done end of 2015 increased as much of IDR789,782,726,000) in the company's financial statements (stated on the Annual Report 2015, pp. 491-492). Funding source for the implementation of EA is a problem for many companies because the related expenditures are not relevant. It does not show future benefits in monetary value that was revealed by company through environmental report (Corporate Environmental Report/DRKPL 2013, p. 6) that net present value (NPV) of biomass investment is IDR -4.8 billion (negative); means those investment is improper, but company is still committed to continue the project. Company A considers on a long-term strategic planning on the environmental aspect (stated in CEO comments in The Annual Report 2013, p. 43).

Secondly, it is the cost that relates to emission management. The new machine is related to reduce emission in the production system for non-solid waste management. Cement Sustainable Initiative (CSI) is an independent third-party assurance of CO<sub>2</sub> emission information of its members. Company A became a member of CSI and adopts its system called the WBCSD.CSI method version3 (World Business Council Sustainable Development). This method helps the company to measure and calculate emission.

Thirdly, it is the cost that is related to the cost of external services for environmental management. Government Decree carried out several social programs as a commitment to implement sustainable business and compliance with aspects in the document of Analysis on Environmental Impact (AEI or *Analisa Dampak Lingkungan* (AMDAL)). It is another program that is related to CSR whichever the companies engage with GRI to follow how to maintain the external factors. Mostly, the costs are derived for the assessment process, certification, and activities under specified programs.

The GRI guidelines clearly explain the policies; however, companies can adopt a program that is tailored to their internal conditions. For example, Company A has a Community Investment Program (CIP), as the guide for CSR implementation, and contains an avenue for the program's implementation as well as provides room for participation and adaptation regarding social welfare, public service and social and environmental responsibility.

### ***Contingent Cost***

PSAK 57 states that contingent costs arise from two conditions, legal obligations and constructive obligations. Legal obligations are stipulated in Law Number 32 of 2009 on the protection and management of the environment (further described in section 4.2.2 Enforcement of Environmental Laws). Constructive obligations are related to past financial decisions which have an impact on the current financial position.

This standard encompasses the necessity of recognition measurement, and disclosure of contingent liabilities and a contingent asset that can be recognized if there are laws

on environmental conservation. There is a cost associated with environmental conservation but it is not as yet supported by law at their previous cut-off term and the company negligently has not taken action on environmental conservation, as a result if there were fines, this cost should not be recognized as environmental conservation cost.

Starting from 2012, Company A addressed contingent costs and externalities. For a discussion of these cost categories, information can be traced from Sustainability Report 2013 of Company A. For waste management, the company has invested in a machine to convert heat source into electricity power, besides using biomass energy. One of the economic benefits can be detected from the comparative electrical usage between company consumption and international consumption in kilowatt-hours/ton (KWh/t) (DRKPL 2013, p.7). Company A succeeded in reducing dependence on consumption of electricity as seen in Figure 4.5 to 90 KWh/t than any overseas counterpart in the similar-industry.

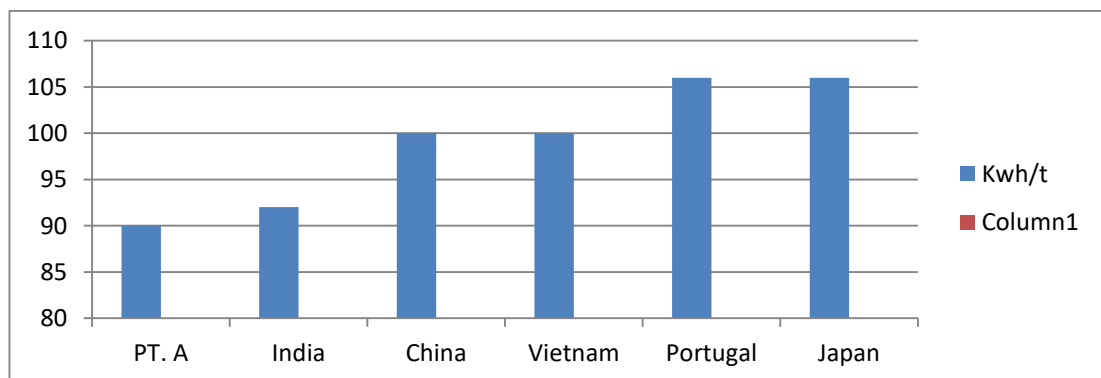


Figure 4.5  
*Benchmarking International of Electrical Usage in Similar Industry KWh/t*  
 Source: *Dokumen Ringkasan Kinerja Pengelolaan Lingkungan (DRKPL/ Environmental Summary Report 2013 Company A, p.7).*

To accommodate manufacturing and purchase of components and products to support its green program, including health and safety program and other integrated business systems, Company A has laboratories and the R&D unit which investigates new technologies and evaluates ways to make technology more useful to customers. Company A recognizes that environmental aspects may be found in all of its business operations, such as equipment manufacturing and telecommunications services, its laboratories and even its office buildings. It published the environmental cost for the first time in 2014 in the annual report.

Initially, Company A and manufacturing subsidiaries issued a corporate environmental policy in 2009. This was followed by divestiture and restructuring. In 2012, Company A issued a Policy for Environmental Prevention that recommitted the company to the concepts of the original policy in the Four Pillars of Smart, Excellent, Sustainable, Concern (*Cerdas, Prima, Lestari, Peduli*). The company took into consideration the policy of the Ministry of State-Owned Enterprises in the management and supervision of SOEs. It restructured the organization to support the policy, known as Corporate Environmental & Social Management (*Pengelolaan Lingkungan & Sosial Corporasi*). That succeeded to manage the environment for the first time and Company A was awarded Golden Rank from Ministry of Environment (now is The Environmental and Forestry Ministry of Republic of Indonesia) in 2013. Company A's policy goes beyond regulatory compliance by committing the company to develop and use non-polluting technologies, minimize waste, increase recycling, design products and processes with environmental impact as a critical factor and raise all employees' awareness of environmental responsibilities.



Regarding the cost of emission management, Company A believes that investing in the environment has helped it decrease operational costs and avoid future liabilities. As a result, Company A has set aggressive environmental goals. For example, in 2009, it reached its goal of eliminating emissions of NO<sub>2</sub>, CO<sub>2</sub> and other hazardous substances from its manufacturing operations. Company A achieved this goal two and a half years ahead of a community and local government ban by creating new manufacturing techniques that eliminated the use of the materials responsible for the emissions. Company A also achieved significant results by reducing waste, increasing recycling and using alternate energy based on, “reuse, reduce, and recycle” concept.

Company A recognizes that environmental accounting includes environmental costs, which are the costs that makes an impact on the firm's bottom line; and social costs (also termed externalities) which are costs associated with an impact on society and the environment that currently are not reflected in the firm's bottom line. Company A focuses solely on determining private costs, particularly conventional and potentially hidden environmental costs, such as costs arising from community and NGO protests. Since 2012, Company A has sought to implement environmental costs into its operational costs.

To support the internal interest for enhancing profit as the target of financial performance every year, it is important for the company to set the production capacity. The revenue is derived from cement products, construction, retail, rentals and other services, like financial services and leasing. The Company's recent mergers and acquisition in Vietnam has positioned Company A to be a major player in the cement industry. Regarding “expansion and procurement”, and “acquisition of raw materials”,

that have encouraged the company to get liscence for exploring raw material from natural resources. It is not easy to get new resources for a new plant or even to enhance the production scale.

Company A expects to address contingent costs related to externalities, eventually, scope of the externalities do not come from national area only, but from international area also that have urged company to establish a risk management department to handle issues linked to external parties. Driven by its desire to keep a healthy balance between business interests and environmental protection, Company A has been ensuring both internal and external interests are consistent.

Company A was engaged with a Japanese organization (New Energy and Industrial Technology Development Organization) from 2010 to 2013 to acquire a new technology that is more environment-friendly. It has been continuing from 2014 to present with JFE Engineering that engages with the Join Crediting Mechanism (JCM). Under the program, firm does not expect from internal funding to do procurement of machinery. This activity should be recognized as:

Debit Asset contingent (fixed asset)	} based on fair value
Credit Liability contingent (other payable to third party) (recognizing grant under specific program)	

Source: Analysis of the Annual Report 2013-2014 Company A

Data from Company A in 2013 revealed allocation of investment of the environment for fixed asset. The company received a grant from Japan of IDR638 billion of which

was IDR 118 billion for JCM program. In its financial statements it did not reveal the amount clearly, only in the Sustainability Report (Sustainability Report 2012, p. 32).

The company also received financial aid and other facilities from the government and syndicated banks during the reporting period. It was stated in the notes to the consolidated financial statements as, “Loans from the Government of Republic of Indonesia” and loan from syndicated banks as “Under common control-SOE” (The Financial Statements 2014, p. 119).

The management believes that environmental cost can support the achievement of environmental policies by:

- 1) Supplying relevant cost data to understand and improve the environmental impact resulted by the processes, and drive desired behavior towards designing environmentally preferable products and services;
- 2) Providing information to support the most cost-effective solutions to prevent and/or meet environmental compliance needs; and
- 3) Providing evidence of compliance with environmental standards (both regulatory and voluntary).

In this way, EA can help avoid potential environmental liabilities, reduce costs and minimize its impact on the environment. EA has been described as, "essential not only to give the environmental projects an equal chance of receiving needed resources but also to get an accurate description of the true environmental costs associated with the manufacture of each product”.

### *Investment and Other Comprehensive Income*

Somehow Company A needed external funding to support the environment conservation activities. The commitment started from Board of Directors' discretion in 2012 (not from government as the majority ownership). The BOD has restructured its organization and commissioned the Environmental Management System (EMS) program as part of company policy for environmental conservation. Hence, initial stage supporting the program, external resource funds obtained by Company A for supporting activity. Through Clean Development Mechanism (CDM), Company A developed alternative renewable energy and reduction of CO<sub>2</sub> emission. Thus, Company A should provided data to the third party whose company engaged with CDM. It also resulted in Certified Emission Reduction (CER), which is transacted through the carbon credit trading mechanism. Potential revenue from transactions of CER in 2011 to 2012 reached 60,000 CERs, whereas one CER was valued at 0.30 to five euros (Sustainability Report 2012, p.36). This revenue booked as translation (currency exchange) revenue in other comprehensive income in 2013, as PSAK 1 regulates statement of P/L and other comprehensive income;

“...require additional disclosures to be made in other comprehensive income section, such that items of other comprehensive income are grouped into two categories: (1) items that will not be reclassified subsequently to P/L; and (2) items that may be reclassified subsequently to P/L when specific conditions are met” (Financial Report of Company A, 2014, p.13).

Therein, the benefit from CER is classified as an item that will be reclassified subsequently to P/L in financial reporting when specific conditions are met.

Besides PSAK 57, that is strengthened by Law Number 25 Year 2007 reads about the investment in Article 15 paragraph C, that SOEs have a responsibility to report their investment activity to the Ministry of SOEs. Based on this rule, the company has set CER investment as a provision. Some or all of the economic benefits required to settle a provision are expected to be recovered from a third party. Thus, CER received by the company is associated with the constructive responsibility with the third party, in this case, the UNFCCC. There is an obligation for the company, as a member of the CDM, a program under the UNFCCC, to report on performance in reducing emissions (environmental disclosure or ED). Another party embedded with ED is Global Environmental Exchange, as a secondary market index. This section can be recognized after the UNFCCC's International Transaction validated and transferred CERs into company's account. This section was reported in the Sustainability Report 2014, but it was not to report as CER income based on Indonesian GAAP. It was reported as provision in the other comprehensive income account.

There is a section for P/L to record secondary market price as noted in the Sustainability Report 2014, "Until now the sales purchase contract of CERs has been carried out with Sweden through the Swedish Energy Agency (SEA). In accordance with the Emissions Reduction Purchase Agreement (ERPA) which has been signed by Semen Indonesia and SEA, the first stage of the CERs was purchased by Sweden of 94,000 tons of CO<sub>2</sub>, from January 2013 to February 2015" (p. 77). Company A states the account as follows:

Debit	Receivable	}
Credit	Provision third party	
(to record purchasing CERs by the third party)		

Source: Analysis of the Annual Report 2011-2014 Company A

Debit	Cash	}	based on present value
Credit	Receivable		
(to record the validation of CER when verification is done or specific requirement by the third party is met)			

Source: Analysis of the Annual Report 2011-2014 Company A

Debit	Investment	}
Credit	Cash	
(to record the allocation for environmental cost)		

Source: Analysis of the Annual Report 2013-2015 Company A

Company A recognizes the amount of the provision using the best estimate based on management consideration to set the present obligation at the end of the reporting period, while taking into account the risks and uncertainties surrounding the obligation. A provision is measured using cash flows estimated to settle the present obligation; its carrying amount is the present value of those cash flows.

With regard to contingent gain and loss from the investment in the environment that is related to the third party, Company A adapts from PSAK 25 paragraph 48 that estimation on contingent gain or loss is not as a corrective treatment; it shall be recognized at the time received. So, Company A recognizes it as translation difference from exchange financial statements and classifies it as another comprehensive income account (See Appendix E). The entries should be:

Debt Provision of third party	}
Credit Other comprehensive income	
(CER's exchange difference from translation of financial statements)	

Source: Analysis of the Annual Report 2013 Company A

The impact of recognition on third party payment from CERs in 2011 to 2012 was received in 2013. It was found in 'Other Comprehensive Income' balance as on 31 December 2013, of IDR 497,724,145,000 (the Financial Statements 2013, p. 6) as compensation from carbon credit trading (the Sustainability Reports 2012, p.36) compared to 'Other Comprehensive Income' balance at end of 2014 of IDR 13.768.512,000 (the Financial Statements 2014, p.6).

#### 4.4.1.2 Performance measures

Symbol 'b#' is associated with performance measurement (see Appendix D) as revealed by CA.3 (a data engineer from Company A):

*“Company has a standard about the maximum level of hazardous level of emission, waste and pollution. Actually, this standard came from The Environmental Ministry of Indonesia”* (CA.3, interview data 2015).

In the Sustainability Reports 2013 and 2014, the company revealed the results of environmental performance both in physical and monetary values. Physical measurement for air, water and land conservation use standards of KLHK; whereas the measurement and disclosure of EA comes from knowledge transfer from Japan. Therefore, the company uses a special account that is separate from the conventional account.

The data about 'environmental cost' can only be traced from the internal data or cost center. Therefore, the external stakeholders can get information about the amount already deducted as environmental cost in the Sustainability Report. Measurement of the amount of expenditures to reduce the environmental impact is based on PSAK 57 paragraph 12 that regulates about provisions for contingent cost.

### ***Environmental Performance (EP)***

Environmental performance can be monitored and evaluated using real-time reporting that the the information items on real-time report are adapted from KLHK activity card as shown in Table 4.7. This card is one of many paper card information about what kind of waste was produced, how much was produced, how much can and cannot be managed and what companies do with the waste that cannot be managed. The Company A set an integrated system called Automation Document Control (ADC).



The base data in ADC center consists of three kinds of waste produced: 1) solid waste; 2) liquid waste; and 3) air pollution or emission. In line with the government's standard for waste management, both companies adapt the card to record their activities for reporting their waste produced and management.

Table 4.7  
*The Blank Form of Balance Sheet of Waste Management*

FORM 3b. BALANCE SHEET OF WASTE MANAGEMENT OF B3 JULY - DECEMBER 2012						
No.	Waste category	Unit (tonne)	Waste generated	Waste managed	Waste not managed	treatment
	A. resource from production					
	B. resource from non-production					
	<b>Sum</b>					
	<b>TOTAL</b>					

Source: Internal document of Company A and B (Excel document)

Using three aspects to analyze which aspect lacks in managing waste, it should set the information for internal management to review and take further action. Solid waste management is a very complicated process and it is not easy to convert waste into useful materials. The document (Table 4.7) is the baseline card which gives information for another 'to do list' as stated in Table 4.8.

Converting solid waste is integrated in production. Company A converts solid waste to energy supply, and solid waste which cannot be converted is sold to a third party.

The third party has been certified to process waste. Company A reported its effort in the Sustainability Report 2012 as zero waste.

Table 4.8  
*The Blank Form of Waste Water Quality Monitoring*

FORM 1. Reporting Waste Water Quality Monitoring													
Num.	Outlet Name	Resource of used water	Parameter	units	Quality standard	Test result Year 20xx						Testing laboratory	Description
						Jul	Aug	Sep	Oct	Nov	Dec		
1	Point A	.....											
			Debit	m <sup>3</sup> /month									
			....										
2	Point B	.....											
			Debit	m <sup>3</sup> /month									
			....										

Description :  
 Name Outlet : based on the place point name  
 Waste resource: used water resources  
 Parameters : refers to the regulations governing the activities of the sector  
 Standards of quality: refers to the regulations governing the activities of the sector  
 Report complete data and periodically during the six months/July 20xx-December 20xx in accordance with the requirements as follows:  
 1. Monthly waste water quality monitoring  
 2. Daily monitoring of data parameters PH and TSS or debit

Source: Internal document of Company A and B (Excel document)

Table 4.8 shows the water (liquid) waste management card which contains information about liquid waste produced and company's effort to purify it for other functions, such as cooling the power supply in production. The quality standard for purifying water is provided in government regulation in KLHK Policy Number 1 Year 2010 about the administration of water pollution control.

Table 4.9  
*The Blank Form of Emissions Monitoring*

FORM 2. Reporting Emissions Monitoring of Air condition								
N o.	Name source emission	Emission sources derived	Param eter	Unit	Quality Stand ard	Test results	Laboratory Testing	Descri ption
						Semester II 20xx		
1.	Chimney A	.....						

**Description**  
**Name Source Emission:** by name chimney monitoring  
**Emission derived:** derived from the process, generators or others  
**Parameter:** refers to the regulations governing the activities of the sector  
**Quality standard:** refers to the regulations governing the activities of the sector.

Source: Internal Document of Company A and B (Excel data)

Table 4.9 shows the information of emission impacts on health as lungs and eyes are exposed to pollutants. It inflames and causes irritation of the organs. Emissions are released through chimneys. It is an invisible waste but causes the most pollution and is the priority of the government. A significant effort has been undertaken by Company A producing emission in its production process. Combustion heat from production that is evaporated through the chimney can be converted into energy supply. It integrates with biomass energy supply because the energy is produced by a similar kind of heat energy source.

### *Economic Performance (EcP)*

EcP can be detached from the absorption cost data that provides information about the total efficiency resulting from environment conservation activities in production. It is associated with the absorption cost, such as electricity and water usage. Although in the segment on the environment in the Sustainability Report, the amount of electricity and water efficiency usage is shown, there is no information of economic benefit due to the activities linked to the Financial Statements. Efficiency-cost on production states in the Sustainability Report 2014 was reported as IDR 300 billion (p. 56). Sales had increased by 3.5% over the same period in the previous year to 6.2 million tons (p. 57). Despite the information on cost efficiency and increased sales, there was no information on the cause of increasing sales from cost efficiency implementation of the environmental conservation activities.

Information congruency between the content of financial statements with sustainability report about the environmental cost was difficult to trace. Some accounts have material amount increased (decreased) in the Financial Statements 2014, such as Fixed Assets in 2013 of IDR 48,654,931,000 to 2014 of IDR 183,317,846,000 or an increase of IDR 134,662,915,000. The management's note on the consolidated financial statements was related to capital up to the date when the construction was completed (the Financial Statements 2014, Sect. [q] Notes to the Consolidated Financial Statements, p.33). The machine construction was from a grant as a form of cooperation in the Joint Mechanism credited with JEE of Japan amounting to IDR118 billion that are indented for replacement of production machines (Sustainability Report 2014, p. 73).

Another account, 'Other payables to third party' in 2013, was IDR 295,622,862,000, in 2014, IDR 482,704,936,000 with an increase of IDR 187,082,074,000. 'Allocation attributable comprehensive income to non-controlling interest' in 2013 was IDR 135,529,224,000 in 2014 IDR11,240,234,000 with a decrease as much of IDR 124,288,990,000, and 'Other comprehensive income on exchange difference from translation of financial statements' in 2013 was, IDR 504,926,062,000, in 2014 IDR 11,735,196,000 with a decrease by IDR 493,190,866,000 without detailed explanation both in Notes to the Financial Statements or in the Sustainability Reports in the same year (2013). Despite, there was without detailed explanation in 2013, indication of increasing on other comprehensive income revealed in the Sustainability Reports 2012. Monetary value of environmental activities can support EP. External stakeholders knew and understood information of the excellent company performance in the environment, such as absorption cost from converting waste to useful materials to support production.

### ***Social Performance***

With regard to social aspect, sustainability principles are implemented with the empowerment of community around the plant operations or in the vicinity of the mining of raw materials. The empowerment program is realized through Partnership Program and Community Development, as well as the fulfillment of corporate social responsibility (CSR). As stated in BOD statement, "We continue to increase the number of micro, small and medium enterprises, who are becoming partners in the Partnership Program, as well as develop their businesses". Thus, their presence will be

able to absorb manpower so that the community may benefit indirectly from the presence of the Company and its subsidiaries.

Company A continues to support the development of facilities and infrastructure that can improve the quality of the living environment, as well as the welfare of the beneficiaries. The Company and its subsidiaries also continuously provide social assistance. For social assistance, Company A especially allocates 40% of CSR funds for quality of education improvement. It is provided through scholarships, teaching aids and learning facilities, as well as through practical training support. In 2013, Company A set up the Semen Indonesia School of Management (STIMSI). STIMSI is a part of strategy for the establishment of the Semen Indonesia Center of The CHAMP (SICC), as a center of excellence for preparing the best pupils with excellent performance.

#### 4.4.1.3 Disclosures

Symbol ‘c<sup>ll</sup>’ is related to the concept of disclosures (see Appendix D), as revealed by a Technology Support expert (CA.5):

*“We have been trying to follow every regulation from the Republic of Indonesia laws, but its number will increase every year. For example for CSR reporting, we follow GRI G-3, then in 2014 it was changed to GRI G-4. **Then the Environmental Ministry increases its requirements** about counting and reporting the quality of conservation activities such as has to fill the emission form, reduction, prevention of environmental impact form in every week.” (CA.5, Interview data, 2015)*

It captured different reporting that should provide by company A relates to the environmental disclosure (ED); i) CSR reporting, and ii) the Ministry of Environmental and Forestry (KLHK) requirements or the DRKPL reporting.

Firstly, it is the environmental information that forms part of the elements in Sustainability Report 2014. The format is based on the Sustainability Reporting Guidelines (SRG) G4 version and is issued by the GRI. GRI is not a regulator and does not have the authority to require companies to adopt it. That gives Company A an option to provide information in accordance with internal core business. This report has been verified for the materiality disclosures which have been carried out by the GRI teams. Although the EA disclosures (ED) are in the Sustainability Report, it is quite difficult to verify the accounts of EA in the Financial Statements. As internal management concerns about the risk of conflict that may arise from information in ED to stakeholder interests. Internal management policy should be taking into account, listening to and considering information which stakeholders need to know in disclosure.

### ***Stakeholder Inclusiveness***

Company A has an analytical flowchart for determining the content of disclosures. As shown in Figure 4.6 from it starts with a phase of identification of sustainability context that it finds consideration of GRI points. At this stage, companies are required to understand each of the points listed in Sustainability Reporting Governance of Generation Four (SRG-G4). Then in prioritization phase, it sets on each point of priority elements based on material aspect as stated in Sustainability Report 2014 (p.

136). This aspect of the report is determined by observing the limit and the scope of internal and external. The important aspects that will have an impact internally are identified by the company and its subsidiaries, whereas the impact on the external aspects are identified based on its impact on “stakeholders”. At this stage, the company has full control of the contents to be reported. The company's main consideration is the interests of its stakeholders.

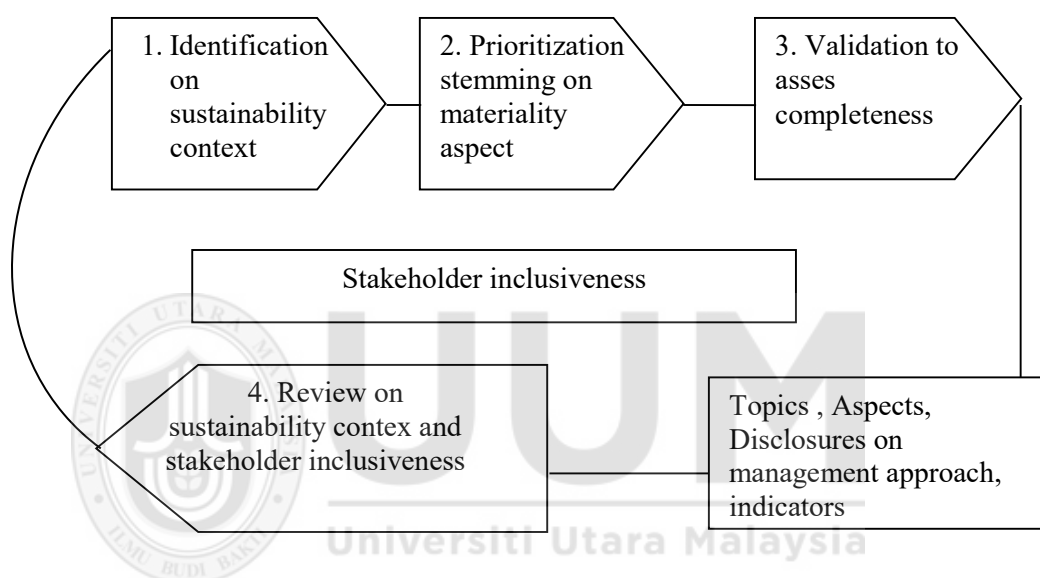


Figure 4.6  
*Analytical Flowchart for Determining the Content of Disclosures*  
 Source: Sustainability Report of PT- Company A (2014, p. 136).

The validation phase is an assessment based on the opinions of “*Pemangku Interests*” (interest rights of stakeholder) and the authorization of the BOD to download the document to the public. Public response to the information presented is evaluated, especially if it concerns the interests of stakeholders. Public response in the form of feedback form is found on the last page of the Sustainability Report 2014 (p. 153-154).

Secondly, the reporting for the KLHK that company should prepare it for every six months. Furthermore, the company should provide the Executive Summary Report for



every end of year. The Executive Summary Report, as the name goes, is set by internal management and authorized by the Board of Directors (BOD). The reporting becomes a part of company responsibility to follow the environmental regulations in Indonesia. The valuation components are: 1) the summary of environmental management, 2) Environmental Management System, 3) management resources; i) energy conservation, ii) reduction of emission and greenhouse gases, iii) water conservation, iv) reduction and management of the poisonous or hazardous waste, v) management of other kinds of waste, biodiversity management, and 4) community development; i) requirements for Green level, ii) requirements for Gold level. However, Company A had tried to follow the environmental regulations since 2002 and awarded the Gold rank from the Ministry of Environmental and Forestry (KLHK) in 2013.

#### **4.4.2 Company B**

Company B is a SOE non-listed company whose primary production is vaccine. Further explanation about Company B profile can be found in Section 3.3.2.2. The identification of participants stated in Appendix A.

##### **4.4.2.1 Cost Structure in Environmental Accounting**

Based on the findings (as shown in Appendix D), symbol ‘a<sup>v</sup>’ represents the main idea of cost structure in EA as revealed by CB.6 Manager of Public Relations and Internal Policy of Company B:

*“Company recognized some definitions of environmental protection from the government regulation. **Environmental accounting** includes **both social and environment as social costs.**” (CB.6, Interview data, 2015).*

Company B classifies its accounts based on activity; most of the allocation is for following the ministerial regulation about good governance of public sector under Ministry of SOEs regulation; and PER-09/NIBU/07/2015 about allocation of funds for partnerships and community programs to the maximum of 4% from profit after tax. Table 4.10 summarizes accounts associated with the reduction of a production facility's environmental impact or spending for end-of-pipe solutions, facilities or equipment attached to the end of production facilities that include the cost of social activities.

Table 4.10  
*Classification, Definition, and Content of Cost Structure*

<b>Accounts classification</b>	<b>Definition</b>	<b>Content</b>	<b>Financial Statement</b>	<b>Source of account classification term found in</b>
Absorption cost	Co-processing materials as part of overhead cost on per unit product.	Used motor oil	P/L	Sustainability Report 2013
Non-absorption	Efficiency behavior	Reducing water, energy usage	n/a	Sustainability Report 2010,2012, 2013
Cost under organization dimension	the private costs that are not incurred in the production process but regulated by laws	Partnership program, community development	P/L	Financial Statements 2013
Capital Investment	allocation of environmental conservation funding	Licensing expenses, IPAL/K3/Environment assets/expenses, replacement expenses	Balance Sheet	Sustainability Report 2013

Table 4.10 shows three classifications of accounts from data in the Annual Reports (2008, 2010, 2012 and 2013) and observation (did not allow to take picture or record) as follows: 1) absorption cost and non-absorption; 2) cost under organizations; and 3) capital investment.

### ***Absorption Cost and Non-absorption***

On geophysical activities, Company B could reduce 1,700 tons CO<sub>2</sub>/year or have electrical efficiency usage of 2,616,442 kilowatt/ hour/year and free from waste in 2013 were recorded, that all should be classified as non-absorption cost. Non-absorption cost is defined as the cost related to company's behavior that depends upon the efficient and full utilisation of resources. Company B did not engage with third party to pursue external funding for supporting the environmental conservation activity. Hence, cost efficiency do not recognize as ordinary cost of production, but it should be noted in environmental disclosure (ED) as economic benefit (EcP) on environmental performance (EP) (the Annual Report Company B, 2013, p.360-365). However, Company B did not convey the information of EcP in their annual report.

Recycling of 7.76 tonne of used motor oil into oil-base for co-processing material can be treated as an absorption cost to goods manufactured. The amount of allocation base is incurred by converting used-oil into oil-base which is required chemical processing to purify the used oil. Hence, there is added value on converting process (oil-base for production process) that can be recognized as overhead cost.

Debit	Work-in process	}	allocation to cost of goods manufactured
Credit	Manufacture overhead		
	(record used-motor oil for co-processing)		

Source: analysis on the Annual Report 2013 and interview.

### ***Cost under Organization Dimensions***

The case study describes the actions of the companies to obtain resources for funding their environmental and social activities based on government regulations. Company B has taken the issues it has encountered in applying EA, which Company B refers to as "Social Cost". The condition that they embedded in accordance with managerial plans, activities and organizational structures adapted to each condition and understanding of management is based on Law Number 40 Year 2007; Government Regulation Number 47 year 2012 about CSR; and regulation from Ministry of SOEs Number 08/MBU/about partnership and community development programs.

After 15 years, the company tried to engage with the KLHK to maintain environmental performance (EP). Then on the bad condition in 2004 when it was given the red level (level as poisonous and hazardous company on environmental issues). In 2006, the company won its first award as a green company. Since then, the level of consumer confidence has increased from various countries and sales have also increased in line with the level of consumer confidence. The company has a competitive advantage after employing environmental standard using WHO and GRI guidelines. The

company's P/L Reports improved year by year and is now in harmony with environmental compliance.

The company tried to change its internal policies to adopt environmental policies, both in terms of law (external) and management (internal). It combines local wisdom (sharia) as internal value. Supporting a new vision, the company tried to change the management structure. Environmental aspects were employed in the organizational structure, in CSR and in the General Division. The activities that have been carried out associated to social cost related financing and funding activities are carefully treated by the company within the framework of the social environment. It allocates the section from internal resources stated in the Annual Report 2013 as Allocation Investment. Indonesia still has no standard on how to support EA. Hence, the company classifies cost into two parts: (i) to include the environmental costs in the budget of CSR under P/L Report (as noted the entries below), (ii) for supporting the activities of waste handling, such as machine or expenses taken from the investment, are in the Balance Sheet Report (see the journal entries in Section 4.4.2.1, Sub. C).

Debit	P/L	
Credit	Dividend	
	Reserve	
	Partnership program	} (allocation P/L to CSR activities)
	Community development	
	Tantiem	
(to record allocation cost for CSR)		

Source: Analysis result in the Annual Report 2013 Company B

Since 2009, with the promulgation of Law No. 36 of 2008 on Income Tax, funds are used by the company for the following activities to reduce income tax. Five activities can be treated as tax cost reduction. Firstly, the contribution in the framework of national disaster management; secondly, the contribution in the framework of R&D conducted in Indonesia; thirdly, the cost of construction of social infrastructure; fourthly, the contribution of educational facilities; and fifth, donations in order to develop sports. Tax refund is - based on value added tax of about 10% from the cost of goods sold (CoGS) or based on the tax invoice. It encourages companies to follow the regulation and so far is only for CSR-related activities. The tax refund for environmental conservation as one of the environmental activity benefits is still being studied by the government to provide regulatory support.



### *Capital Investment*

As stated before in Section 4.4.2.1 (Sub. B), Company B classified costs for CSR and waste handling. Hence, allocation costs for waste handling are funded from investments. PSAK 55 explains investments in equity instruments that do not have market prices are limited to an active market and whose fair value cannot be reliably measured (paragraph 46); cannot be defined as financial assets; or financial liabilities at fair value through P/L. It is strengthened by PEMA Article 43 (paragraph 2a) about allocation of funds for environmental protection. Thus, the company should record the allocation as seen on the Annual Report 2013 in the Financial Statements section:

Debit	Investment	}	Balance Sheet Report
Credit	Cash		

(The cash flow's statement)

Debit	Assessment of WHO & GMP expenses	}	related to licenses
	Replacement expenses		}
	IPAL/K3/Environment assets/expenses		
Credit	Investment		

(The capital investment statement)

Source: Analysis Result in the Annual Report 2013 Company B

Although the company has no special report on EA, it notes a proper settlement for EA category. Product quality assessment using World Health Organization (WHO) and Good Manufacturing Product (GMP) standards that complies with National Agency of Drug and Food standard is the quality standard for safety products. These related expenses and assets have a similar treatment to IPAL or installation of waste management system, and *Kesehatan, Keselamatan Kerja* (K3) or occupational health and safety. The company puts all this as Investment Allocation Routine separated from Development Product Investment. Both investments are known as Capital Investment.

Environmental asset and expenses are an allocation for reducing electrical usage, such as replacing conventional lamps to LED lamps with solar-centric and converting oil waste to oil base for production. For water treatment, the company uses technology to purify water before water is released for irrigation so as not to harm the environment.

As for Company B's policy relating to environmental and social matters, not all are considered as benefits toward future EcP. The capital expenditure for this section should not be compared to the benefit generated. Somehow, Company B applies a "write off" policy to normalize the account. It is shown in the Annual Report 2013. The BOD was required to submit a written report to the Board of Commissioners on the results of write-off and/or transfer activities of fixed assets of PT-B (Persero) in 2012 (The Annual Report 2013, p. 222). It is also stated in the financial statement "AGM approved the write-off and transfer of damaged and/or non-productive fixed assets IDR511,348,266.90, with a note that this was done in accordance with the applicable rules and regulations" (The Annual Report 2013, p.317).

#### 4.4.2.2 Performance Measures

Company B does not have special performance measures for EA. It follows KLHK measurement related to environmental management. It is a substance standard that emerged more than compliance as revealed in Sustainability Report 2012 (p. 17); Company B uses the phrase "submissive towards the environmental rules". The performance indicators are divided into: 1) geophysical measurement; and 2) social measurement, as revealed by CB.10 as Staff of CSR and general affairs,

*"Environment for companies is viewed as environmentally **geophysical** and **social environment**. The **social** internal environment is in human resources a micro or narrow sphere to **human capital**. **Geophysical** is related to no **negative environmental impacts**". (CB.10, interview data, 2015)*



### *Geophysical Performance*

Using physical basis measurement (such as energy conservation in Kilojoules/hour, water conservation in PH/cubic metre, emission reduction in Tons/kilometric), the report of geophysical performance is produced every three months for water conservation and every six months for emission and energy conservation as seen in Table 4.11.

As shown in Table 4.11, Company B should provide information related to company's activities to improve their effort in managing waste, as documents recorded in suitable manners. This form illustrated below as Table 4.11 supports the company environmental report (DRKPL).

**Table 4.11**  
***The Blank Form of Solid-Waste Monitoring***

Num	Criteria	Improvement efforts	Descriptions must be completed (data from July to December 2012)
1	Data collection and identification of the type and volume of the B3 waste		Log book of waste B3  Copy of Certificate of B3 Waste Management Licensing (TPS B3 / Utilization / Incinerators / Bioremediation / Landfill)
2	B3 Waste Management Licensing		Filing Letter Permit (if new proposed permit)  The status of the license application (BA verification / conference / reply from the BLH / KLHK)
3	Fulfillment of license conditions		Photographs technical improvements in accordance with the status report cards PROPER /BAPROPER(TPS)B3 / incinerator / bioremediation / utilization / landfilling)

**Table 4.11 (Continued)**

Num	Criteria	Improvement efforts	Descriptions must be completed (data from July to December 2012)
			<p>Delivering a copy of the lab certificate for the emissions test incinerator / boiler emissions if done the utilization of B3 waste / leachate for bioremediation and / or landfill / water quality monitoring wells at the landfill area / monitoring wells at the landfill site</p> <p>Delivering data in accordance with the provisions of the permit (eg: TCLP / compressive strength test if the use of brick / block paving)</p>
4	Open Dumping, B3 Waste Contaminated Land Restoration		<p>Submit plans for land clearing and the restoration of contaminated land (including the volume and amount of B3 waste has been managed / not managed)</p> <p>Delivering progress of land clearance and restoration of contaminated land (including the volume and amount of B3 waste has been managed / not managed)</p> <p>Present the results of analysis monitoring wells, soil quality in the area of the former open dumping (if any)</p> <p>If the B3 waste clean up the results sent to the 3rd party in order to submit a copy of the manifest document 2 and 7 (if it is accepted by the producer)</p>
5	The amount of B3 waste managed		<p>Convey completeness balance sheet of B3 waste management (if not yet complete for the period July 2011 - June 2012)</p> <p>Convey the balance sheet of B3 waste management from July to December 2012</p> <p>If the B3 waste handed over to the 3rd party in order to attach a copy of the manifest document 2 and 7</p> <p>If storing B3 waste more than 90 days</p>
6	B3 waste management by third parties		<p><b>a. Transporter</b></p> <p>Convey recommendation transporter of KLHK</p>

**Table 4.11 (Continued)**

Num	Criteria	Improvement efforts	Descriptions must be completed (data from July to December 2012)
7	Dumping, open burning and Waste Management B3 certain way		<p>Convey transporter license from the Ministry of Transportation</p> <p><b>b. Collectors / processors / utilizing / landfilling</b></p> <p>Convey copy 3rd party licensing of KLHK / BLH</p> <p>Convey cooperation contract between the producer and the 3rd party (not the transporter)</p> <p>Convey copies of B3 waste management permit certain way / dumping into the sea</p> <p>Convey progress status of licensing (if it is still in the process of applying for licenses such as letters permit application, BA verification, response letter from KLHK</p> <p>Convey the status of B3 waste management requested to stop its activities in accordance with BA Supervision or report cards PROPER</p> <p>Convey progress status of licensing (if it is still in the process of applying for licenses such as letters permit application, BA verification, response letter from KLHK</p>
<b>Description :</b>			<p>This form is filled in accordance with the improvements that must be carried out as stated in the report cards PROPER 2011 – 2012                      Waste Management Performance Progress B3 (Hazardous, Poisonous Material)                      Period July - December 2012</p>

*Source:* Internal Document of Company A and B (Excel data)

The company environmental report (DRKPL report) should be submitted to Ministry of Environment and Forestry (KLHK) (Company B did not provide internal document of DRKPL to be analyzed in this research). The physical environment impact is associated with health, that all substances function properly and measured based on

regulatory guidelines for preventing people from being harmed in work or becoming ill, by taking the right precautions and providing a satisfactory environment to avoid hazards. Hazards refer to anything with the potential to cause harm in terms of human injury or ill health, damage to property, damage to the environment or a combination of these, e.g., chemical substances, machinery or methods of work. It is mandatory in all business sites for keeping communities and environment away from possible health risks which may be caused by companies' production processes, for instance, the restricted area for visitors in any part of business sites and a big 'Safety First' banner. To evaluate the physical impact, the company has a record chart of accident numbers for monthly reporting.

Another point made by Company B using a persuasive approach to eliminate environmental impact. Environmental activities classified as a format of business enterprise to reduce the negative impact on the environment. The funds allocation was under the scheme of CSR, and was reported in the Sustainability Report 2014 (p. 31 to 36). The series of socialization on the activities related to vaccine products have been conducted for the last three years until now. The roadshow was done to eradicate the rumors about vaccination and immunization containing illicit ingredients. Specifically, the polio vaccine, which has been rumored to contain lard, is not true. In the roadshow, it disseminated knowledge about vaccines and immunization from Islamic perspectives. To get information on the activity impact, the company evaluates the rate of sales.

### ***Social Performance***

The Ministry of SOE Number Per-08/MBU/2013, states the regulation about partnership and community development program, is for companies to accommodate social activity and to avoid social (and the environment) impacts. Company B can measure performance based on its numbers of activity each year; for example in 2013 Management Report showed education donation with an increase of 121%, health donation with a decrease of 45%, religious facilities donation with an increase of 172%, public infrastructure donation with a decrease of 46%, natural disasters donation 28%, environment conservation donation with a decrease of 82%, and SOEs Care donation with an increase of 138% (Annual Report 2013, p.248). The fund allocation for this program is reported in the Financial Statements every year, where in 2012 it was reported as IDR 12,097,000,000 and in 2013 it decreased to IDR 8,760,000,000 (Annual Report 2013, p.142). Basically, Company B uses social performance indicator based on GRI aspects.

#### **4.4.2.3 Disclosure**

Data revealed in Appendix D is related to disclosures items and noted by CB.7 as a Public Relations and Internal Policy staff of Company B:

*“The structure of organizations has changed since 2011, ever since we started to commit to **become a member of PROPER**. We have **integrated management systems**, including the data every division on the use of resources and efficiency we manage to be reported in **the CSR Report**”* (CB.7, Interview data, 2015).

The sentences referred two phrases that are “member of PROPER”, and the CSR Report”. Company B kept their record data for reporting purposes in integrated systems. Integrated systems mean that the data can be assessed for KLHK and for public, and the information should be same interpretation.

Items of EA are shown in Sustainability Report in the Financial Highlights section. The content of EA items in financial highlights (in The Sustainability Report) is supported in the Financial Statement. During 2013 Company B made commitments with several partners. Thus, the company arranged their capital investment to support its commitments. Hence, the items of disclosure are consistent with the objective of procurement related to WHO and GMP assessment, replacement, WWTP/OHS/Environment, capacity enhancement, R&D and new products (Annual Report 2013, p.146). Whereas, management considers on license strategy; this item of disclosure is to support the effort and to attract external stakeholders. The company followed the procurement requirements from a third party as for increasing international sales market.

### ***Licensing Process***

Company B has the vision to be a world-class life science company and the mission to provide and develop the standards to face global competitiveness. CB.6, manager of public relations and internal policy, revealed the following:

*“The environment is our core business **it associates with our resilience body products.** Gradually, we improve our performance in all areas such as green process. namely implementation of green principles in the **whole process from searching licensed***

*vendors for more environment-friendly raw materials to final products, efficient energy usage, efficiency and water conservation by implementing 4Rs (reduce, reuse, recycle and recovery), waste management and sorting of waste into five categories and **employee involvement** in order to have green behavior (with a green people and green habits concept).”(CB.6, interview data, 2015)*

There are two points observed about license: 1) incorporating the environment as elements of production; and 2) employees' support. It means EA is used as part of management commitment to get value added for internal function. Management receives comprehensive support from down line management and tries to integrate its business strategic plan into the system. Meanwhile, Company B has a top-line strategy approach.

The top line strategy refers to increasing gross sales or revenue. The first information in the P/L Statement is gross sales which the term of the top-line strategy gets in. Therefore, management sets the long-term strategy to get accredited documents for supporting top-line growth. For Company B, most of the allocation of environmental investment is to get a license. Business licenses are important for supporting the company to increase sales level. Applying for the license means the company should follow all requirements from the licensing agency. Currently, the company proactively follows PROPER, a government program for environmental management. The benefit of this program is the granting of license for business operations and other benefits. As a result of these adherences Company B awarded the Gold rank from KLHK in 2013 for the first time after two times failed in 2004 and 2008.

Another important licensing agency is the WHO. This license gives product warranty to customers. The company appreciates this license as the most valuable. It can be seen in Company B's Sustainability Report 2013 that comparison of allocation for 'Assessment WHO and GMP' was IDR 50,654,000,000 and for a laboratory test of 'Wastewater treatment plant/health safety/environment', it is IDR 1,632,000,000 only. The company relies on the green license to improve and accommodate its economic growth.

#### **4.4.3 Summary**

The findings revealed that sequential policies that placing the items of disclosure are as different practicing EA as Utama (2011) confirmed that there different performance between SOE listed and non-listed. The different content and structure of company's Sustainability Reporting showed that Company A had a priority to engage international stakeholders and closely connected with current stakeholders (presented in Section 4.4.1.3 and Section 4.3.2). It consents to stakeholder theory that the company must be able to build a relationship with stakeholders because it extent the value of the company; Benoit-Moreau (2011) called the value as intrinsic value. Meanwhile, the Company B had a priority to make up its image after they had unfortune experience in the past (got the red level from Ministry of Environment of Republic Indonesia and delisted from World Health Organization or WHO in 2004 to 2008). The company has been trying to set its legitimacy. Business entities provide environmental information to show that they have been good stewards of the earth (Freedman & Stagliano, 2004). According to Tilling (2004), business entities are motivated to do this as a means of legitimization.



In Section Problem Statement (Section 1.3) confirmed about Indonesia problem related to EA practices such as Suaryana (2011) stated. The findings revealed about accounting data related to environmental aspect that was confirmed by company practicing. It is presented in Section 4.4.1 about Company A and in Section 4.4.2 about Company B. Company A preferred to present environmental data in the Sustainability Report than in the Financial Statement, meanwhile Company B consent presenting accounting data related to environmental aspect in the Financial Statement (Section 4.4.2.1 Part C), but the explanation about the account-related was captured in the Sustainability Report. It is presented in Section 4.4.2.1 Part C that Company B diversified investment based on allocation; investment for development product; and investment for managing waste and pollution, and getting certification for environmental conservation activities.

The confusion between social and environmental perspectives is due to the socio-psychological aspects of external factors, often called 'externalities' (Farouk et al., 2012; Santos, 2012). Hence, as from the findings revealed that international market (Company A engaged with Vietnam) or global stakeholder (Company B is listed by WHO) have a legitimacy power to persuade companies adapting EA. In findings, regulators (government) as stakeholder also have a legitimate constitution to mandate business entities complying regulation as revealed by regulator's articulation related with enforcement environmental laws (Section 4.2.2). It supports Padfield (2015) that externalities flowing either directly via legislative attempts to overturn at least some portion of the opinion, or indirectly via legislative mandates for increased corporate accountability to stakeholders.

#### 4.5 Research Objective Three: Plausible Conceptual Framework of EA

Based on the analysis, it can be seen that the overall outcome of research is a plausible framework for EA practices in Indonesia. Figure 4.7, developed on the basis of analysis, shows that the EA practice is associated with the articulation of the current regulator of EA and the key factors of the company. It further shows the general plausible framework. Based on the findings, they are grouped in eight categories: 1) cost structure; 2) performance measurement; 3) EA disclosures; 4) environmental improvement and friendly products; 5) growth and sustainability; 6) Improving standard operations; 7) compliance with regulatory laws; and 8) articulation of regulator’s policy. All themes are associated with EA practices.

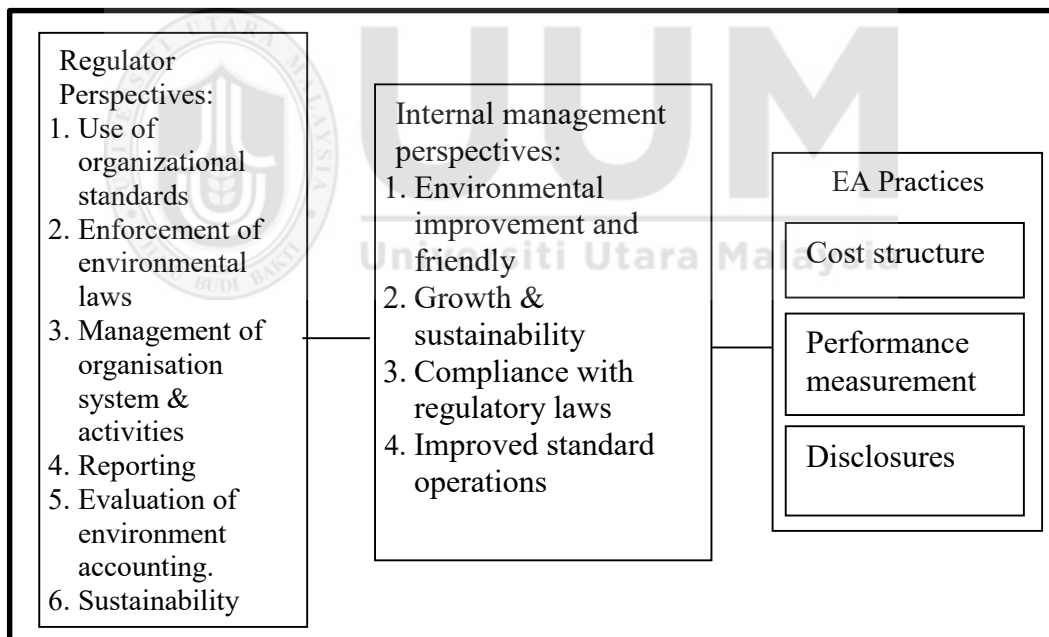


Figure 4.7  
*Plausible Conceptual Framework from The Findings* (the finding explained in Section 4.2, and Section 4.3).

*Note:* The grid marks ( — ) refer to the logical association with or connection of the content inside box with another box.

The Figure 4.7 is set by triangulation of Nvivo results (see on Appendix B) and context unit from sentences of each theme (see on Appendix E). The essence of each sentences

from the theme related to regulator' articulations and the theme related to internal management' perspective is to be synthesized.

Internal management adapted what regulators required, and adjusted to company condition (financial, human resource, strategic planning dimension), as explained in Section 4.3. Implicitly, internal management occupied the environmental matters in its accounting system (conducted under CSR department). The sentences of regulators were corresponding to the internal management sentences. It means, the power associations is not counterproductive (Appendix E). Such as phrases found in a theme of enforcement of environmental laws (Section 4.2.2), it stated "Indonesian environmental law regulates" and in a theme of compliance with regulatory laws (Section 4.3.3), it denoted "we have been trying to follow every regulations".

Appendix E shows the sentence from regulator who said "as long as the goals are the same, the environmental conservation activities..." It means that regulator gives opportunity to corporations to have own discretionary related to the environmental aspect as long as corporation follow regulations (see on Section 4.2.1). Precisely, internal management' sentence in Appendix E cited "Commitment to energy efficiency is consistently implemented not only in production activities but also operational activities..." It means that internal management has a long-term commitment not only to follow regulation, but to achieve benefit also (reduction cost of production).

Here, the expression 'thinking and responding' was construed in a positive manner, whereas 'thinking' is driven by regulators to provide regulations (based on the findings

in section 4.2.1.4, it is related to regulators as an external function) for firms as ‘responding’ and applying to its operational business.

The internal management perspectives explained in the four themes or categories, based on interview data, are provided in Section 4.3 (EA practices) that consists of: environmental improvement and friendly products; growth and sustainability; compliance with regulatory laws; and improving standard operations. This is the overview of recognizable internal management concerns about EA after they learnt and complied with regulations as the first guidance in practices. However, many issues came in practices. It relates to accountability matter such as Company A was in struggle to complete the expansion schedule in 2016 because of community ban; Company B could not provide the environmental strategic plan up to 2014 because of the delay in the learning process from other country, and relates to legitimacy matter. Perceptions give meaning to the reality. At the same time, regulators and internal management’ experiences can affect the way the interactions and events are defined. Hence, the thread bare analysis of perceptions regarding EA practices is discussed in Section 5.3.

Regulators play an important role in the implementation of EA (explained in Section 4.2). Therefore, the accounting treatment of the environment matters, reporting, growth and sustainability and compliance with regulatory laws in EA practices should be adjusted to the regulator’s latest policies that are associated with the regulators articulation on EA practices. Accounting treatment, as a construction in the framework, is defined as cost structure and performance measurement, while reporting matter is described as EA disclosure.

EA practices in the conceptual framework relied on accounting postulates. Accounting postulates are the statements that economic activity are conducted by certain identifiable entities (legally), that transactions occur at identifiable times (timing), and that the entity will continue as an on-going concern (implementing and sustainability of ex-post and ex-ante performance). The accounting postulates cannot be changed because they give guidance for advanced accounting practices, such as EA.

Firstly, cost structure in EA is explained in company cases explained in Section 4.4.1.1 for Company A and Section 4.4.2.1 for Company B. Whereas, corporate cost structure is mentioned by regulators respectively as shown in Section 4.2.2, Sub A (Regulatory Cost) and Section 4.2.2, Sub B (Investment). The literature about cost structure explained the general elements. Through the case study on both company practices (Section 4.4.1.1 and Section 4.4.2.1), it was studied how the management of SOEs in Indonesia applied EA and what were the elements of cost construction on EA. The objective standard of firms adopted by management under specific organizational structure that companies reorganized their internal management to make room for CSR. However, objective standard of firms is considered on accounting regulation and environmental regulation to support restructuring capital.

Secondly it is the performance measurement explained in context of company practices in Sections 4.4.1.2 and 4.4.2.2. As for complying regulation, the performance measurement followed from regulators that stated in Section 4.2.2 (Sub. C). Considering technical matter to count performance, each firm has a specific valuation. Managements of both firms have a system and metrics table to monitor activity related to environmental conservation in daily business operations. Some metrics of valuation

is adopted by companies from environmental regulations. However, both companies have a difficulty to collaborate environmental performance (EP) measurement in economic and non-economic aspect. An exclusive discussion about combination performance measurement regarding economic and non-economic aspects provided in Chapter 5 (in Section 5.5).

Thirdly it is EA disclosure explained in Section 4.3.2 that referred toward regulators' policies with further explanation in Section 4.2.4 (the third-party regulators perspective). Disclosures or reporting are communication tools for firms to provide information about general and specific management policy, firm performance and economic prospectus. Although regulations on reporting structure are conducted for purposes (the Sustainability Report for CSR, the DRKPL for KLHK mentioned in Section 4.2.4), each firm relied on a management strategy to set the items for environmental conservation in their disclosures (Section 4.4.1.3, and 4.4.2.3). It is found that companies should provide three reports, such as the Financial Statement, the Sustainability Report, and the DRKPL for every year. Hence, the subjective and objective aspects of environmental disclosure (ED) become a problem in companies practices. The subjective aspect is related to internal management cognition. Stemming on this findings, it is further discussed to suggest a plausible framework of EA in the accounting system as deliberated in Chapter 5 in Section 5.4 and 5.5.

## CHAPTER FIVE

### DISCUSSION

#### 5.1 Introduction

This chapter provides an explanation through diagrams of analytical procedure and a plausible framework based on the finding for supporting the constructs. It concludes with the contributions of research.

#### 5.2 Discussion

The discussion on the general issues of the problem statement is on the technical issues in EA, which is the lack of accounting data. The accounting data is useful for external stakeholders' decision-making based on the company prospectus. It is supported by Bicalho, Richard and Bessou (2012), McCarty and Zen (2010), that a lack of disclosure is because of unavailability of EA standards (Burrirt & Schaltegger, 2012; Catusus, 2008).

Based on the findings about articulation of regulator policies to incorporate the environmental aspect on corporate system, the regulators predispose management to classify the environmental costs, set performance measurements and consider disclosure of the company in the general practice of EA, as stated in the first discussion (Section 5.3.1). Besides that, the plausible conceptual framework reveals all themes from internal management, such as 'growth and sustainability', 'compliance with regulatory laws', 'improved standard operations' and 'environmental improvement and friendly products' that have association with regulators articulation on EA practices, as the second discussion (Section 5.3.2) and considered to be the first research contribution.

Despite perspectives are predisposed by regulator's articulation on EA practices, Company A and Company B have been trying to adopt regulations into their management strategy plan. Perspectives, or key factors on EA practices, serves as the second research contribution, giving results of the Gold Award (the highest rank) from the government awarded to management for the efforts for managing the environment until 2013 (and continued to 2015).

Specific standard of EA is unavailable to guide the companies pursuing practices on EA. Based on the findings, there is an association amongst themes that lead to EA practices. There is a consensus that EA practices not only consist of cost structure and measurement of performance but also the perspectives about the necessity of environment aspect that lead to EA practices. Thus, EA practices are not only about reporting or disclosure; it also conveys environmental legitimacy. This part is considered as the third (Section 5.3.3) discussion topic.

The plausible framework based on the findings that refers to the procedure of EA practices consists of cost structures, performance measurement and disclosure (reporting). The differences in content of the procedure of EA practices framework between the concepts and findings become the fourth (Section 5.4) and the fifth (Section 5.5) discussion topics.

### **5.3 Environmental Perspectives in Indonesia**

The perspectives on EA from regulators and companies could be in synchronized patterns. Based on the findings, internal management had an initial knowledge on the environmental aspect. EA has not been conducted as a prolific program (it was mentioned on the reporting strategy). Even though regulators are a key role to



encourage (or even to impose) internal management integrate the environmental aspect on its management system (EMS). As shown in Figure 5.1, integrating manners on practices is the best value for regulators (Based on the findings in Section 4.2.7). The best value that revealed by Ball (2005) emerged as a mainstream accounting requirement for local government. Herein, the messages from regulators through current policies and regulation laws (the environmental regulation and accounting regulation) are accepted by firms as a basic guidance in environmental management, but not as technical accounting guidance.

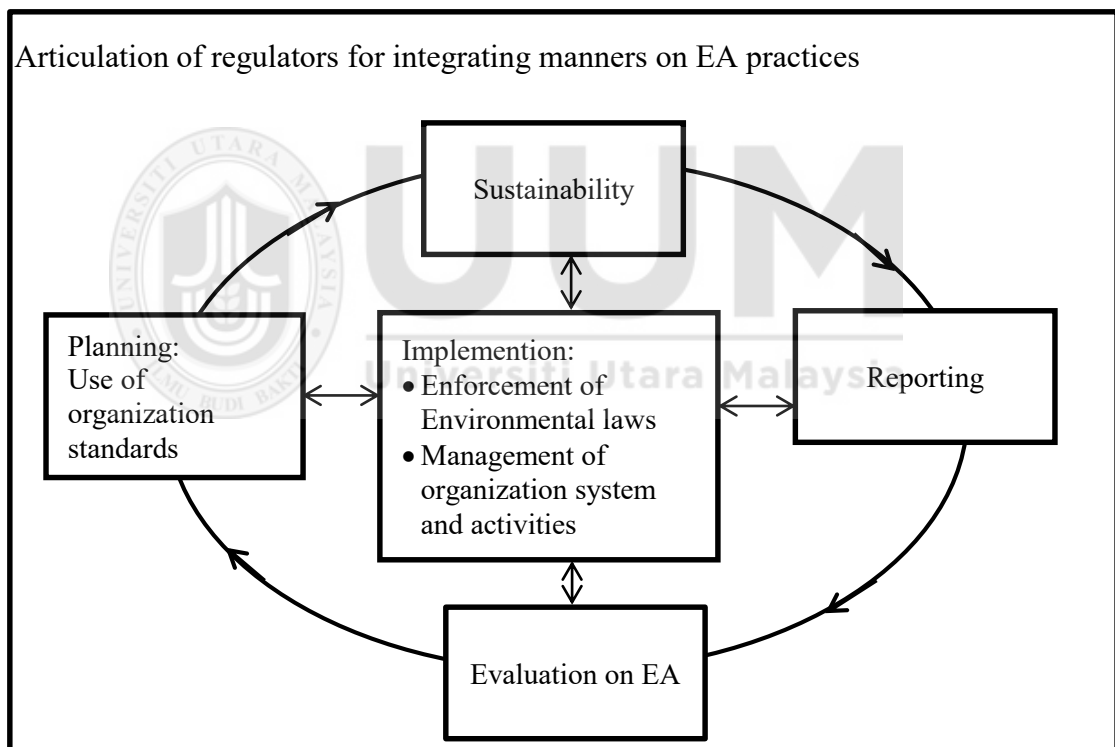


Figure 5.1  
*Integrated Manners on EA Practices Based in the Findings*

Regulation perspective shown in Figure 5.1 kept implementation part at the centre for the reason of its subjective characteristic. Subjective characteristic is relied that environmental laws enforce in physical data (environmental performance or EP), and do not accrue in monetary data (economic benefit or EcP). Hence, evaluation on EA

is followed not only for regulation purposes but to synchronize with corporation policies also.

The figure 5.1 depicts the integration system of regulator's articulation related with EA that can be summarized based on the findings from Chapter 4:

- a. Use of organizational standards is looking at four (4) aspects:
  - i. Organizational aspect refers to “policies and goals” as company discretion to incorporate environmental-related orientation into business operation system.
  - ii. Technology aspect refers to regulators considering about the environmental element whenever corporations want to install a new technology to enhance production capacity.
  - iii. Activity aspect is related with conducting activity in legitimate program offered by government, such as ISO 14000 and PROPER.
  - iv. Regulatory aspect refers to the sole legitimate authority on environmental regulation that is with KLHK (Ministry of Environment and Forestry) and the opportunity from KLHK to transfer the role to corporation (legitimacy arbitrage).
- b. Enforcement of environmental laws mentions on regulatory law that sets the environmental and social matter to protect public rights. It is depicted in content of The Protection of Environmental Management Act 32 Year 2009.
- c. Management of organization system and activity refers to regulator suggestion that corporate may set managerial framework to accommodate EA.

- d. Reporting through regulators suggest corporations about promoting environmental communication with external parties.
- e. Evaluation of EA which refers to EA as a function to evaluate company performance. There are several conditions considered fit to have a proper functional EA:
  - i. A transparent system for internal management to provide data and make improvement based on those data.
  - ii. A legitimate external benchmarking as the comparative indicators with other companies in a similar industry.
  - iii. Consistency in indicators that act as reliable performance indicators.
- f. Regulators refer sustainability term as moderate achievement which consists of:
  - i. Opportunity cost or alternative cost that relates the value scarcity and choice. It happens when corporation can reduce cost of production by reducing dependency on natural resources.
  - ii. Monitoring function on environmental activities continuously.

Yusoff and Lehman (2009) drew a definition on synchronized examination of the patterns of paired oppositions within the text and focused on the paradigmatic structure of messages. The patterns are systemic thinking to explain the possibility of association with other themes. Saldana (2009, p. 6) characterized patterns on similarity (things happen the same way), differences (that happen in predictably different ways), frequency (that happen often or seldom), correspondence (that happen in relation to

other activities or events) and causation (one appears to cause another). Further, Cua and Garret (2009, p. 40-41) confirmed that the reality embodies two interrelated concepts; the first concept concerns the hierarchical order of awareness, perceptions, feeling, and the second concept concerns with the subjective and objective reality. The ten patterns of perspectives on the environment in Indonesia are *the first research contribution* as follows:

### **5.3.1 Regulators Perspectives**

Regulators emerged EA practices should be integrated as shown in Figure 5.1. Each perspective is circulated by the integrating manners, as based on the findings in Section 4.2.7 (integrating reports for economic, social, and environmental activities).

#### **5.3.1.1 Perspective Using Organizational Standard**

Based on the findings in Section 4.2.1, regulators' perspectives about 'use of organizational standard' that emerged from the importance of internal function (organization, technology and activity aspect) and external function (regulator aspect) is to help companies to reach sustainable business (involving the environmental aspect into business value). The internal function that was revealed in the findings is in line with the claims of Johansson and Winroth (2010) who pointed out eight decision factors such as technology, facilities, capacity, vertical integration, quality, workforce, organization, and production planning or material control. These factors guided management strategies on environmental concerns. It is in consistency with the findings of Ribeiro and Aibar-Guzman (2010) that the existence of international environmental accounting standards is not positively associated with the development of environmental accounting practices; the standard does not represent the local

content pragmatism (infiltration of local culture perspectives to EA development) (Gallhofer, Gibson, Haslam et al., 2000).

Meanwhile Figure 5.1 shown that the first stage to involve the environmental aspect into operational business is to set a viable planning as suggested by regulators, by using organization policies (internal standard) to integrate all aspects. Here, regulator's role is more as the supervisory agent than the law prosecutor. Thereafter, the findings related to external function supported Kagan, Thornton and Gunningham (2002) who found regulations still matter greatly and uniformly enforced rules than as a coordinative mechanism to interact with market pressures, local and national environmental activists, and the culture of internal management (Haniffa & Cooke, 2005) in generating environmental improvement.

Findings in Figures 4.2 (Section 4.2.1) can be compared to Donovan (2002) - Figure 5.2 (cited from Brown and Deegan, 1998) there is an intersection among internal aspects (organization, technology, and activity) and external function (regulators aspect). As Donovan (2002) revealed, the intersection of X-area refers to the legitimacy area. Each aspect has its own values; Donovan (2002) confirmed that independent values are referred to the legitimacy gap. Society has values regarding current issues, whereas a corporation has legitimacy to determine own values to conduct its actions. Mobus (2005) suggests studying on legitimacy dynamics considering institutional (cultural embeddedness) and strategic (agency, constituency conflict) perspectives. Based on the findings in Section 4.2.1, although regulators allow corporations to manage internal functions that include organizational aspect, technology aspect, and activity aspect, there should be regulator supervision as well

(regulators aspect). Whereas, regulators supervision on EA is not under ‘one roof’ of the ministry (see Section 4.2.1, Sub D).

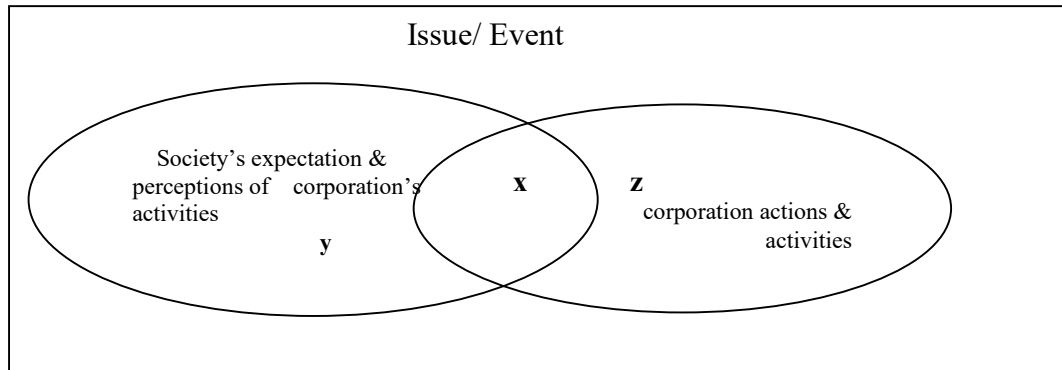


Figure 5.2  
*Issues/events and Corporate Legitimacy*  
 Source: Donovan (2002, p.347)

It is in line with Magness (2006), based on the legitimacy theory on perception, that any response by management must be accompanied by disclosure. Thus, any public misconception on performance give rise to the legitimacy gap. The occurrence of legitimacy gap can be seen in the findings in Section 4.2.5 from the regulator’s category, such as, “evaluation on EA” and the category from the company, “improve standard operation” in Section 4.3.4 which are associated with assessment process (auditing). Assessment process for the environmental matter is conducted by KLHK (Ministry of Environment and Forestry) using physical standard, whereas information on economic benefit should be assessed by an auditor with accounting wisdom. It showed the legitimacy gap adherence between activity measurement under statutory laws and ED based on economic measurement under internal management policy (as caused due to the absence of technical standard for EA under accounting regulation).

Gernon and Wallace (1995) provide complex theoretical basis for examination of the environmental factors influencing the accounting disclosure practices; they divided factors into external and internal without intersection or gap. An ideal condition that shown in Figure 5.3 is without legitimacy gap condition where internal management has a control on the environment costs. As Donovan (2002) conveyed, the X-area shall be as large as possible to reduce legitimacy gap. Likewise, the legitimacy gap is too small to have an intersection at each aspect, such as in Figure 5.3, where each aspect is an independent intersection. Reducing the legitimacy gap shown in Figure 5.3 is an ideal condition on ED issue if all aspects have an integrated function to support EA.

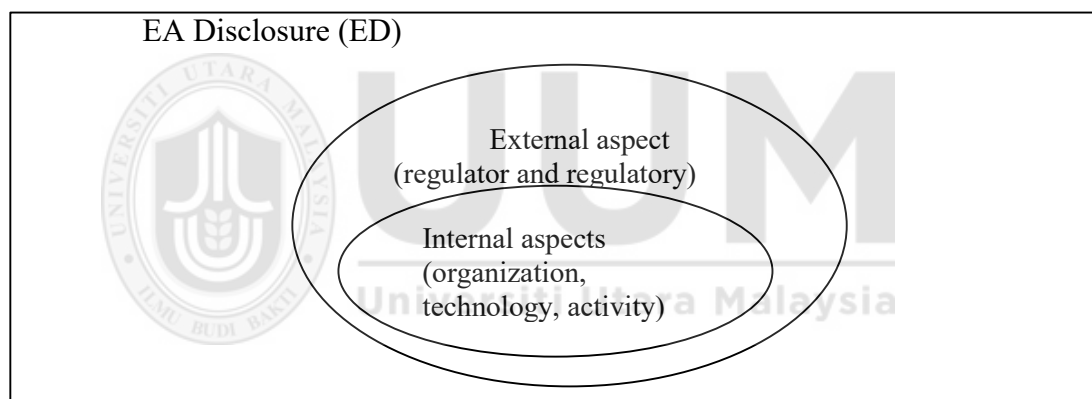


Figure 5.3  
*Aspects without Legitimacy Gap from the Findings*

Elijido-Ten, Kloot and Clarkson (2010), mentioning the application of stakeholder theory opined that stakeholder representatives have an influence on ED behavior. Based on the findings in Section 4.4.1.2 (Sub C) and Section 4.4.2.2 (Sub B), the most influencing stakeholders are regulators (physical standards for EP) and community (social performance). It is in consistency with the findings of Gunawan (2015) that community, shareholders, and regulators are the most influential stakeholder groups in Indonesia.

Based on the findings, external aspect referred to regulators (section 4.2.1, Sub. D) have an intersection interaction (legitimacy gap). It is in line with Sakumoto (2004) that an umbrella Act (mentioned on the Protection Environmental Management Act (PEMA No.32 Year 2009) alone cannot work without the operational laws being enforced to support it, it should be known the content of the Protection Environmental Management Acts (PEMA) No.32 Year 2009 to apply the The Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan* (PSAK)) regulation. But the clarification of the environmental standard from physical value to monetary value has not been introduced. Similarly, Institute of Indonesia Chartered Accountants (IAI) policy does not provide required insight in Indonesia GAAP (as stated in Section 4.2.3).

Regarding reducing the legitimacy gap, internal management set strategy and innovation to accommodate these aspects (organization, technology, activity, and compliance to regulators) as suggested by regulators (emerged on perspective of using organizational standard). It is in consistency with Gunawan (2015) that companies should conduct businesses which are environmentally and responsible to community as the integral part of ongoing strategy. The environmental regulators and accounting regulators demarcate their regulations. Thus, the coordination between regulator institutions is established to organize actions for protecting the environment which can be more flexibly applied to the business. It is useful to anticipate the legitimacy bias in SOE whereas hierarchical authority structure is a mechanism to achieve accountability. Legitimacy bias is related to the ownership structure of the SOEs. Goodin (2003) revealed that the regimes focus on different subjects of accountability



(actions, results, and intentions) and on different mechanisms of accountability (hierarchy, competition, and cooperative networking). Private firms in Indonesia also encounter the same struggle for obtaining accountability when the power is in the CEO's hands (Lindrianasari, & Adriyanto, 2010). As another example of the regulator's role in reducing the legitimacy gap, Wood and Ross (2006) found that subsidies could be very effective as an incentive for environmental improvement. The subsidy is provided by the government by offsetting additional tax receipts, so firms can increase profits.

The outcome of environmental legitimacy is stakeholders satisfaction (Alrazi, Villiers & Staden, 2015), that consists of internal stakeholders' satisfaction, such as employees' satisfaction on the job (Deegan, Rankin & Tobin, 2002); management satisfaction through improving on EcP (Prorokowsky, 2016), and external stakeholders' satisfaction, such as customer satisfaction on CSR participation (Othman & Ameer, 2009); community satisfaction on reducing environmental risk (Bracci & Maran, 2013); the local supplier satisfaction to engage on global supply chain (Tencati, Russo & Quaglia, 2008); auditor satisfaction depends on enhancement of credibility in the preparation of financial statements (Kothari, Ramana, Skinner, (2010); government satisfaction on the is onus of ownership of SOE and as regulator; media; and investors.

### **5.3.1.2 Perspective of Environmental Laws Enforcement**

The pattern on the terms is related to enforcement and compliance with environmental regulation (as shows in Figure 5.1). The regulators give the messages under the Protection of Environmental Management Act (PEMA) Act No.32, 2009 (the

legislative laws on environment management) that emerged for the firms to implement the environmental management into the operational business, including the accounting regulations under the Protection of Environmental Management Act (PEMA Act No.32, 2009) and local government laws.

Bewley (2005) used the terms standards, statements, bulletins, guidelines, and recommendations that are all considered as financial reporting regulations. Conversely, Hail et al. (2009) used the term of reporting and disclosure, referring more to companies' practices than standards. The essence of the condition is that there is a need for a rule of thumb on how companies can practice EA (Jones & Solomon, 2013), and more importantly, what information can be provided (Burrit et al., 2012).

Regulations on accounting standards about EA entail government policy in the Protection of Environment Management Act No.32, Year 2009 because EA is an external demand which is incorporated in the annual report. Bedner (2010) suggested that the authority is divided across government levels in order to give a clear influence on the performance of environmental control; hence, the processes include standard setting monitoring and imposing sanctions to protect the environment.

The view of regulators is that environmental regulations are made to tie businesses with public interest. Besides that, Maran (2013) conveyed the role of the accounting profession stemming from accounting rules can be inferred through the legislative prescriptions. Therefore, firms have an obligation to determine any change in the policy of the existing legislations. Although environmental reporting (accounting) in Indonesia is still a voluntary practice until now, all public and private companies

should obey environmental regulations. It is related to legitimate the environment regulatory, supported by Qian, Burritt & Monroe (2011) evince that regulatory pressure and community expectation in social structural as influences category.

Sakumoto (2004) reported in his book that Indonesia is continuously ratifying its regulations - from the Environmental Management Act No.23 of 1997 (EMA 1997) which was replaced by Act No. 4 of 1982, to ratify the Protection on Environmental Management Act No. 32 of 2009 (PEMA), which is presently the basic environmental law. It functions as an “umbrella” Act. Table 4.1 shown the content of Indonesia PEMA that comprises important regulations related to the environment. All ministerial regulations related to environmental matters have to be considered under PEMA. Therefore, the Indonesian Financial Accounting Standard (*Pernyataan Standard Akuntansi Keuangan* (PSAK)) mentioned on environmental accounting practices expecting to be applied in Indonesia that should consider to the Protection of Environmental Management Act (PEMA No.32, 2009).

Local content as it relates to The Indonesian Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/PSAK*) in the field of environment in accounting perspective and the Protection of Environmental Management Act (PEMA No.32, 2009) must be implemented by all types of companies both private and state-owned.

The environmental regulation (see finding in Table 4.1), content of the Protection of Environmental Management Act (PEMA No.32, 2009) shown the basic principle for businesses to manage the environment in certain business sites. Regulators prefer the environment to be managed in “integrated efforts and ways”. However, environmental

management stated in the PEMA No.32, 2009 from the accounting perspective, which refers to costs, investment, EP measurement and disclosures adopted by companies as their EA practices.

#### **5.3.1.3 Perspective on Management Organisation System and Activities**

The third pattern is a regulator's perspective on managing organisation performance emerged on integrating system and activity. If applied to accounting supervision system, uncertainty is measured by looking at the environmental impact by using the information and characteristics of the information. Qian et al. (2011) conveyed the use of environmental management accounting procedures to identify the activities or materials flow into environment that have a potential environmental impact. The procedures include physical procedures, such as raw material and energy consumption, flows and final disposals; and monetary procedures for costs, savings and revenue. The concerns about environmental matters from industry perception (such as services or hospitality business), as pointed out by Martinez, Marte, and Roxas (2015), comprises the integration of corporate social and environmental responsibility (CSR/ESR). Furthermore, Martinez et al. (2015) suggested optimizing economic and environmental responsibility performances through the coordination of top-down and bottom-up organizational mechanisms. It is in line with Prorokowski (2016) that addressing the environmental issues means a significant reduction of operational costs and increase of the EcP translated into annual gross revenue.

#### **5.3.1.4 Perspective on Reporting Strategy**

Based on the findings in Section 4.2.4, the perspective of regulators to the environment is to promote communication of management activities on environment conservation

to external stakeholders (as defined by the reporting terms). It is in line with Magness (2006), the legitimacy theory that describes the disclosure decision process by internal management for achieving an effective disclosure policy. Hence, internal management keeps track on public issues and considers the importance of different stakeholders group for tailoring ED accordingly to be the most plausible.

Liempd and Busch (2013) implied strategic plan for biodiversity for the active engagement of the business sector to promote biodiversity-friendly business practices and to create communication campaigns (reporting) that promote the economic and business benefits of sustainable production and consumption. Mahadeo, Oogarah-Hanuman and Soobaroyen (2011) studied companies in the developing economy and found that content of ED depends on particular economic sectors. It means that reporting can be a marketing tool to inform about the environmental management attempts to increase market and sustain business operations. It is in consistency with Niskanen and Nieminen (2001) that positive news items, such as environmental investment, environmental-friendly products and manufacturing processes, can raise the company's image, but negative news, such as lawsuits related to appeals on environment damages and emission problems can decrease company image.

Kozlowski, Searcy and Bardecki (2015) studied the importance of two-way communication for improving overall sustainability performance. Alrazi, Villiers and Staden (2015) conveyed about strategy to communicate the legitimacy power on reporting that may propose accounting to be involved.

### **5.3.1.5 Perspective of Evaluation of EA (Assessing on the Environmental Impact)**

The regulator's perspective on EA is related to the assessment function on environmental management. It is to ensure that companies have proper measurement about a company's competitive value in the market (theme of evaluation of EA in Section 4.2.5). Regulators give company chance to set EA for supporting environmental regulations.

The findings revealed that the environmental regulator does an assessment on company sites and its reporting. The assessment is based on indicators that normally provide for greater transparency and supervision by regulators to develop some implementation capacity. It is in consistency with McCarthy and Zen (2010) where implementation capacity refers to a company's ability to achieve its goals. The company's goals are referred to in the Annual Report as noted by both companies' BOD who those synergy toward internal management done. Alrazi, Villiers and Staden (2015) referred to environmental reporting as the concept of environmental accountability inclined towards an assertion, such as stakeholder pressure and consumer engagement.

### **5.3.1.6 Perspective of Sustainability Strategy**

Based on the finding of the essence of sustainability, regulators mentioned that sustainability is important to maintain a balance condition between financial aspect and non-financial aspect by monitoring function. Ball (2005) indicated that the sustainability in perspective of government level is related to the quality of life (non-financial). Meanwhile, Williams (2015) confirms that the activities undertaken within the community are to maintain, integrate and improve environmental protection, social

equity and economic growth. Whereas, accountants have role on sustainable development assistance and monitoring function for the local authority level as the reference to the community and the activities undertaken within a community (Çalışkan, 2014).

State-owned enterprises have an obligation to support the government to maintain social and economic stability. The government has an authority to do ‘arbitrage liabilities’, meanwhile accounting regulation allows arbitrage liabilities as contingent liabilities. Accounting regulators (IAI and OJK-RI) have written intentionally broad principles (PSAK 57 in Section 4.2.7) related to EA because environmental regulator (KLHK) has a specific regulation for environmental management (PEMA No.32 of 2009 in Section 4.2.2). This is to avoid regulatory arbitrage about environmental issue. Garcia-Murillo (2005) arguing that regulatory arbitrage that can happen whenever more than one agency issues the same regulations. Khotari, Ramanna, Skinner (2010) note that arbitrage is a costly process. Based on the finding, monitoring function can be enacted by adopting a proper standard related to EA and assisted by accountants.

### **5.3.2 Internal Management Perspectives**

The Internal management’ perspectives maintain environmental legitimacy and use justification on financial and non-financial aspects. It connotes regulators’ sustainability perspective (in Section 5.3.1, Sub. F).

Table 5.1

*Financial and Non-Financial Aspects in Internal Management Perspectives*

<b>Perspectives</b>	<b>Financial aspect</b>	<b>Non-financial aspect</b>
Environmental improvement and friendly product	√	√
Growth and sustainability		√
Compliance with regulatory laws	√	√
Improve standard operations	√	

Hereby, Table 5.1 shows that financial and non-financial aspects became the consideration for entities to structure the environmental cost, to measure performance, and to set environmental disclosure (Section 4.3.5 about practices of EA). Such as pursuing international market which relates to customer's value (non-financial aspect), internal managements justify their action (see Table 5.1 theme of environmental improvement and friendly product) for increasing sales (financial aspect); relate to theme of growth and sustainability that emerged of increasing communication with potential market (non-financial aspect); relate to theme of complying with regulatory laws is to reducing regulatory cost (financial aspect), market reasoning (financial aspect), and ethical reasoning (non-financial aspect); then relate to theme of improving standard operations that mentioned on allocation cost for the environmental conservation (financial aspect).

Based on the findings, Section 4.3.1, 4.3.2, 4.3.3, and 4.3.4 revealed four perspectives:

1) environmental improvement and friendly product, 2) growth and sustainability, 3) compliance with regulatory laws, and 4) improving standard operations, as discussed below:



### **5.3.2.1 Perspective of Environmental Improvement and Friendly Product**

Based on the findings, international market is said to be a reason for SOEs to abide more than the requirement of environmental regulations. Hence, the findings revealed that companies have to understand on international customers demand on product safety and quality. It is in consistency with Sakumoto (2004) that the factors of environmental regulation development in Indonesia are influenced by international impact and domestic concerns. Ibrahim and Syed Aun (2015) argued that the new strain of international trade impact to nations to reach the highest quality through environmental quality in the pursuit of trade-led development, supporting the findings in Section 4.3.5 that companies adopted 'green technology' even though it is more costly than conventional technology.

More so, McCarthy and Zen (2010) note if markets regulate themselves, that is where producers will incorporate environmental concerns into their activities wherever consumers value on environmental sustainability as the main consideration in choosing products. The consumers value is motivating the management to improve the process of production (production procedures) and business operations (operational procedures), and make it more stringent towards to produce a more environment-friendly product. It is in line with Raska and Shaw (2012) that social perspectives lead to managers to embrace the "green" way and use it as a mechanism for building customer-firm relationships.

### **5.3.2.2 Perspective on Growth and Sustainability**

Based on the findings in Section 4.3.2, company's perspective about compatibility growth and sustainability is reflected in the Annual Report to reduce negative impacts

and to increase market value of its product (this is stated in the theme of growth and sustainability). The sustainability was mentioned also by regulator's perspective that encompassed a mechanism of efforts unto environmental conservation (stated in term of 'sustainability'). Whereas, the sustainability term in corporation is for enhancing internal benefit (growth). It is in consistency with Deegan (2002) that there is no single motivation in setting up disclosures, to avoid legal actions and to accommodate the stakeholders influence (Gunawan, 2015); legal actions on a specific policy are to reduce pollution.

The findings in Section 4.3.2 have shown different practices on environmental disclosure (ED). Consistent with Alewine and Stone (2013) that internal management has a cognitive strategy to employ discounting information. Thereby the absence of EA standard gives opportunity for corporation to choose the environmental information as long as it is in line with internal management' interests, such as language preferences (shown in Table 4.2 of Section 4.2.4), and disclosure format (shown in Table 4.4 of Section 4.3.2). The internal management' discretion employs discounting information that refers to mechanism of compromise by establishing a common interest (Bommel, 2014).

The information that included in the reports and the content of the sustainability reports seem subjective and highly dependent on the type of social and environmental problems that the companies are addressing in the community (Çalışkan, 2014). It can be seen from findings about cost structure and performance measure in Section 4.4 that community engagement program is more enthused by companies to display in Sustainability Report than environmental aspect. The findings are in line with the

claims of Alewine and Stone (2013) that a cognitive strategy employs discounting information. Mechanisms to report items of environmental aspect depend on managerial policies. Internal management consider placing ED into another format (such in non-financial format) and not easily for public to access it (such as in DRKPL report that should get permit from KLHK). This is to avoid non-financial risks. Wong (2015) revealed the interface of boardroom (BOD versus internal management) on corporate sustainability and financial engineering will increase non-financial risk that is mostly in the format of intangible assets or of non-financial characteristic. Transparency about the important information to stakeholders and identifying non-financial risks can be the solution to avoid the interface.

Corporate governance may influence corporate transparency and as a result leads to better market performance (Tuan, 2014). Hence, transparency matter is still adherence problem in Indonesia (Djajadikerta & Trireksani, 2012). They found the most items that are preferred to disclose are related to human resource and community engagement matter, followed by environmental aspect. It means that mostly corporation have less attention to the environmental aspect.

However, the accounting standards can promote sustainable management practices to balance economic growth against social and environmental needs. It is in consistency with Turcsanyi and Sisaye (2013) who pointed that accounting rules have largely geared toward measuring financial resources, assets, liabilities, equity, expenses, and revenue.

### **5.3.2.3 Perspective of Management on Compliance with Regulatory Laws**

Compliance with regulatory laws is based on the findings as stated in Section 4.3.3. It is embedded with market, ethical, and legal reasons. It is in line with the claims of Brown and Fraser (2006) who opined that complying with regulatory laws is the traditional accounting way to provide information for accountability purposes. Moreover, regulatory laws are still a greater deal for the companies to follow (Bracci & Maran, 2013).

Lindrianasari and Adriyanto (2010) found that managerial perceptions of EA disclosure quality can be driven by legal sanctions. It enforces managers to inform waste and pollution activities in the annual report (as stated in the findings of Section 4.3.5.1 (Sub-B) and 4.3.5.2 (Sub-B)). It gives the message that although the environment is an external issue to consider as voluntary practice or is just additional information, it contains hidden risk. However The implication of hidden risk is the unpredictable burden of hidden costs, such as fines, social impairment or compensation for environmental damage and production of banned products. Thus, it is critical for firms to understand the existing regulations.

### **5.3.2.4 Perspectives of Management on Improving Standard Operations**

The regulators' perspective about the performance of the integrated system and management activity and using organization standard are accepted by companies to involve environmental matters as part of their management strategy (through organization, technology, and activity aspects). Based on the findings, two types of strategic characteristics to improve standard operations are top-line strategy and

bottom-line strategy. The business case relate to EA is justified by internal management as notion to achieve cost reduction.

Based on the findings in Section 4.3.5.1 (Sub-A), companies adopt international standards such as EMS or ISO 14001. In that regard, it is useful to notice that international standards specifically address the environmental costs related to information systems permitting data collection and analysis, performance follow-up, decision-making, and accountability for the management of environmental risks (McCarty & Zen, 2010). Furthermore, Sisaye (2011) noted that sustainability reporting in accounting system is perceived by organizations as a system possessing high ecological value. On the whole, the transformation process requires and suggests organizations to adopt to external environmental changes.

Based on the findings in Section 4.4.2.3, a business license is one of the management strategies to improve internal operational standard. Top line strategy uses a business license to increase sales, whereas bottom line strategy uses a business license to get comprehensive measure of a company's profitability because it encompasses all expenses and income streams for a given period. Qian, Burritt, and Monroe (2011) revealed that many direct and indirect costs and impact of waste management must meet license requirements. It means management should have strong and proper planning to accommodate all things. It is in line with Gunarathne and Lee (2015) that both top line and bottom line strategies may be chosen by the company, based on the latest conditions such as market conditions, and shareholders conditions.

### 5.3.3 Perspectives on Environmental Accounting Practices

Based on the findings in Section 4.4, the differences in approach of practice of EA by both the companies are noted. The differences in practices are the capabilities of internal management to comply with the regulators' requirements. That is, the regulators and the internal management perspectives derive the structure of EA practices. Previously, Evans (1996) introduced organizational aspects and environmental aspects when he discussed about the EMS; he found EA was less considered in supporting the EMS or disintegrated system of EMS. Some studies find disclosure simply as a means of instant reporting by companies for improving their image, which was also evidenced by Villiers and Staden (2011) who found that ill-reputed firms report significantly more environmental information in their annual reports. Moreover, Liempd and Busch (2013) reported that firms also tend to ignore measuring and reporting of any negative impacts of the company on eco-systems and biodiversity. Herein, consideration of legitimacy by regulators plays the role of motivating firms to focus more on EA. Therefore, the results of the examination show that the perspectives of the regulator and the management need to be synchronized in order to facilitate proper EA practices.

The interesting aspect is the placement of EA parallel to the EMS or not as part of EMS, as revealed by Alrazi, Villiers & Staden (2015). Furthermore, Alrazi et al. (2015) created a framework for environmental legitimacy, accountability and proactivity (ELAP) where EA is a part of environmental proactivity (see Figure 5.4).

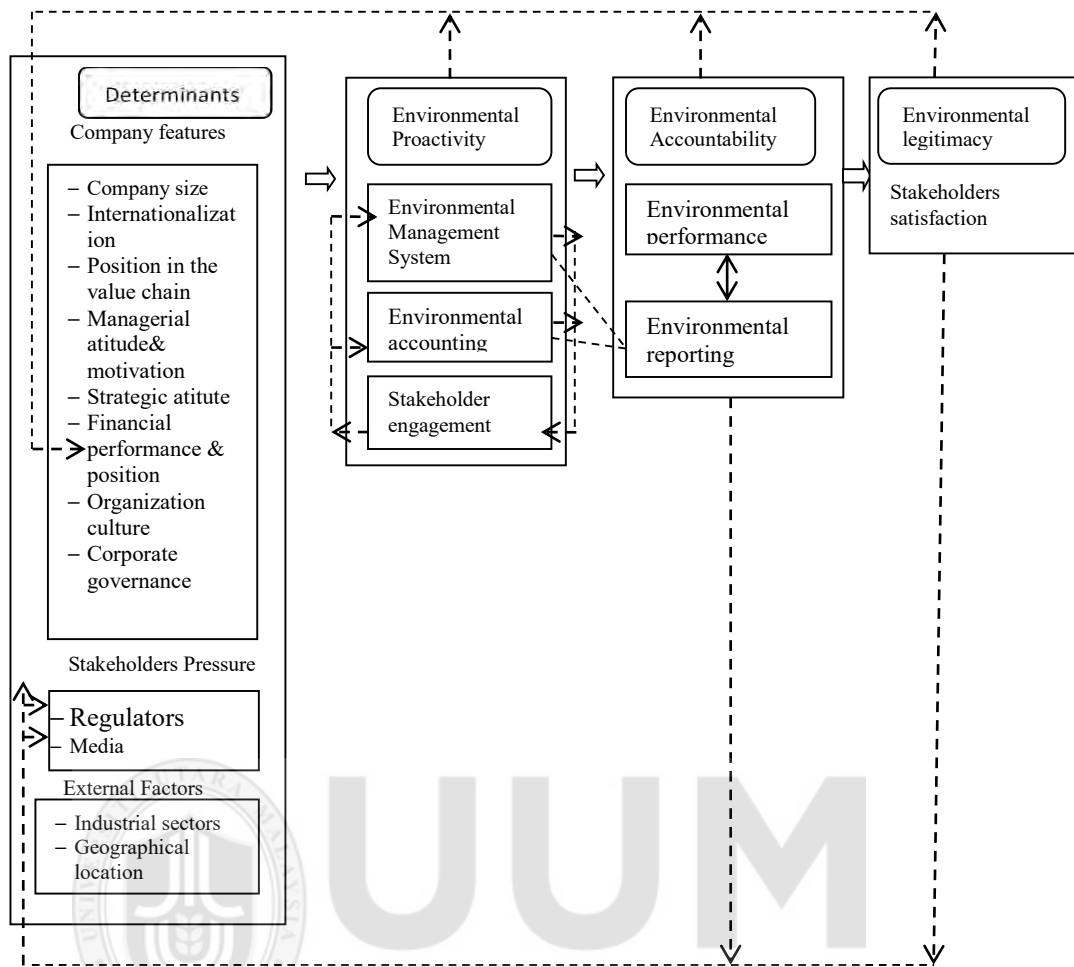


Figure 5.4  
 Framework for Environmental Legitimacy, Accountability, and Proactivity (ELAP)  
 Source: Alrazi, De Villiers and Van Staden (2015, p.52)

The ELAP framework has determinants that are classified into company features (company size, internalization, position in the value chain, managerial attitude & motivation, strategic attitude, financial performance and position, organization culture, corporate governance); stakeholder pressure (regulator, media); and external factors (industrial sectors, geographical location).

Findings of this research supported Alrazi et al. (2015) framework without classifying on environmental proactivity and environmental accountability. Figure 5.5 shows the

dashed grid from research findings (Chapter 4) as the environmental perspectives in Indonesia (supported by Alrazi et al., 2015) is as follows:

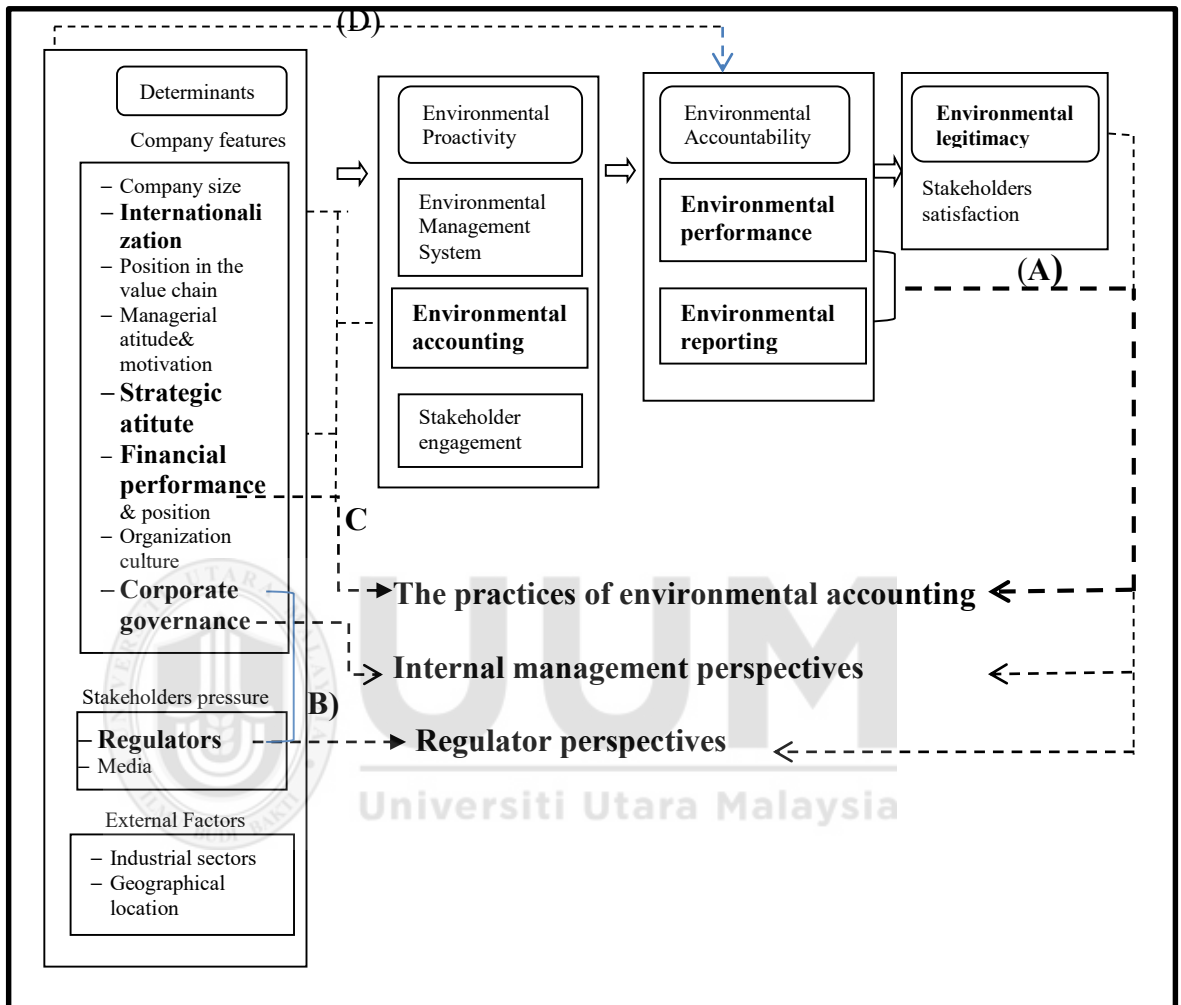


Figure 5.5  
The Research Findings (Remark on Dashed Grid - ➔) Supports ELAP

A. Perspective of using (use of organization standards) and improving standard operation supported environmental legitimacy aspect.

Using organizational standard to improve operations on association to engage EA is a pertinent aspect of legitimacy. Based on finding as shown in Section 4.3.5.1(Sub-B) companies engaged stakeholders as an important inclusiveness to set disclosure items.

Therefore, the listed-companies consider stakeholder feedback to evaluate internal



management effort for handling the environmental issues because stakeholders have got a legitimacy on market value; Further Alrazi et al (2015) conveyed on fixing legitimacy as part of reactive or proactive on unforeseen risks. Being proactive is part of organisation legitimacy. Findings in Section 4.3.4 revealed about perspective of improving standard operation that is the way of organisation legitimacy to do reorganisation (set a special task for engaging the environmental aspect into organisation structure) and to do capital restructuring (allocating funds from internal and external financing) to engage 'green business'.

B. Perspective of enforcing (enforcement of environmental laws) and compliance with regulations (compliance with regulation laws) supported determinant of stakeholder pressures by regulators.

Determinants of stakeholder pressure evoked by regulators shown in Alrazi et al. (2015)'s framework, is supported by findings on the regulators articulation on EA practices (Section 4.2.7). Based on the findings, regulators have a role to assist and motivate management to adopt EA. Hence, the pressure is not negative but positive; Alrazi et al. (2015) mentioned compliance with regulation laws as part of corporate governance. Kang and Lin (2011) examined management behavior of U.S firms that more aggressively report on EA when accounting regulation substantially motivates management to do so proactively.

C. Perspective of sustainability for enhancing benefits by reducing the environmental impact supported the financial performance determinant and EP.

Based on the results in Chapter 4, EP is the basis for measuring EcP associated with environmental conservation. It is the part of the general procedure related to EA practices. It is useful to mention here that the information pertaining to measurement is expected to have a favorable impact on stakeholder satisfaction. Wong (2012) mentioned giving a clear signal to EA practitioners that the commitment on green innovations might have substantial effects on financial performances. If the investment is managed well, it will be capable of bringing forth product success similar to conventional innovations. The determinants of financial performance of company feature in Figure 5.3, which are contrary to the findings of Smith, Yahya, and Amiruddin (2007) who examined the relationship between ED and prior performance of Malaysian companies for seeing the existence of economic benefit from corporate environmental reporting (CER2 here is different from Credit Emission Reduction (CER1)). They found that CER(2) has no significant relationship with financial performance. Malaysia and Indonesia are the ASEAN countries having similar characteristics regarding EA, wherein they both do not precisely have a specific accounting standard related to the environment. It is in contrast to Australia, America, and Europe, which were the research locations of Alrazi et al. (2015) who further stated that these countries have got specialised institutions or agencies to deal with EA practices. The determinants in the framework of Alrazi et al. (2015) can be useful in countries that have a specific agency to monitor EA practices. The financial accounting system is coined with financial performance by looking at the general procedure of EA practices. Based on the results of analysis, there is a preference to understand financial performance more than the economic benefits based on environmental performance (Earhart & Lizal, 2010). Economic performance (EcP)

based on environmental performance (EP) is clearly linked to firm's activities for reducing the environmental impact. Guzma (2010) examined EcP based on EP and found that it could not be valued adequately by using financial performance per se; it should be counted in mixed evaluation, such as value added on physical and monetary measurements. Moreover, the mixed measurement approach as revealed by Farouk, Cherian and Jacob (2012) stated that the EcP based on Environmental Management Accounting (EMA) is a standard EA established by United Nations Division for Sustainable Development with the association among material balances, material flow accounting, and physical environment performance indicators.

D. Perspective on reporting strategy supports the strategic attitude determinant and environmental reporting determinant

Findings in Section 4.3.2 showed different elements on the format of sustainability reporting (Table 4.3) that are committed by companies to make communication with customers from multinational market. Alrazi et al. (2015) opined that strategic attitude influences on environmental proactivity. Further, Alrazi et al (2015) noted that environmental proactivity concentrated on specific standard (EA standard and ISO 14001 standard for EMS) and claimed to be contradicting perspectives from industry concentration that were able to pass on price increases (due to environmental investments) to their customers. It is in line with Janamrung and Issarawornrawanich (2015) who argued that EP is not correlated with ED, though it is related to environmental risk. Thus to avoid (or reduce) environmental risk, companies tend to rely on ED by engaging the stakeholders adequately.

E. Perspective on integrating effort on the environment (environmental improvement and friendly product), assessing of the environmental impacts (evaluation on EA) and mechanism effort to expand market (growth and sustainability) supported the internationalization determinant.

The words of “international” and “global” found in the findings in Section 4.2.2 and 4.3.1. Alrazi et al. (2015) opined on international aspect as a determinant of company features. Based on the findings, practices of EA are a proactive settlement of management to support environmental accountability through environmental reporting (or ED). Proactive matters are supported by the findings in the general procedure of EA practices (see Section 4.4). Proactive action is more perseverance than preventive action, such as have been practiced in Britain (Fleischman & Schuele, 2006), Denmark (Liempd and Busch, 2013), and Australia (Donovan, 2002). In a proactive approach, management follows whatever laws, regulations, and standards requirement on the environment to avoid hidden risks, such as fines, complaints and environmental remediation cost (Qian, Burritt & Monroe, 2011). Thus, a preventive approach is avoided as the costs of EA may outweigh the benefits (Beyer, Cohen, Lys et al., 2010).

#### **5.4 The Accounts in Environmental Accounting Practices: An Overview**

Based on the findings in Section 4.2.2 (Sub A); 4.3.5.1 (Sub A); and 4.3.5.2 (Sub A), environmental regulations without accounting technique contribute to the entities to structure environmental accounts into business practices with different technical definition also. It leads to regulatory costs. Regarding regulatory costs, Omran and El-Galfy (2014) revealed many regulatory cost as the constraint issue or even as motive practices on voluntary disclosure that lead to agency cost, political cost, proprietary

cost, and disclosure precedent. Furthermore, Yang, Dolar, and Mo (2014) found that corporate regulations contribute to the financial crisis amidst allegations of accounting manipulation. Hence, practicing EA in such condition needs to the monitoring function to evaluate the practices.

The classifying and definition of EA accounts have been introduced by many researchers as environmental costs. Such environmental cost that White and Savage (1995) classified as conventional cost; the pooling cost that is direct cost in the Balance Statement and is influenced by market, less tangible items is indirect cost related to regulatory and market shares value, and external cost that considered on the environmental impact from production or operational process. This classification is considered on allocation function that be expected to impact on economic performance. Then, Curkovic and Sroufe (2007) introduced using four-tiers of classification as hidden costs, direct costs, less tangible costs, and contingent liability costs. Hidden cost typically rises from overhead cost; direct costs are linked to the product, process, and service; less tangible costs are considered for improving company image; and contingent liability cost is related to waste management. This classification is considered on cost characteristic that refers to internal and external aspects of cost.

Based on the findings, Company A' cost structure is seemingly different context with Company B's. Company A set the environmental aspect as part of business strategy along with restructuring capital. Herein the allocation or disbursement is determined as "environmental costs". The environmental aspect in regard to cost structuring by Company B is drastically depended upon social aspects, eventhough firm has not such

a huge problem with community about the environmental impact. Coase (1960) introduced the Coase's theorem that in the same levels of production achievement; whether there are negative externalities' influences, the regulator has legally liable for the externality costs. Hence firm as an obligator of the negative externalities make a payment to the regulator that is reduced by the amounts of the externalities.

Mostly, the classification of costs associate with pressures from external than internal. The external pressure endorses the absence of an account and is considered as a counter-intuitive measure to act against the dominating transparency discourse (Catasús, 2008; Jun Lin & Chen, 2005; Monteiro & Aibar-Guzman, 2010; Santos, 2012). Monteiro and Guzman (2010), in their case study found that accounting function of company is disintegrated from environmental management practices. They asserted that accounting function is associated within the context of a wider organizational change process and not only for a specific system such as Environmental Management System (EMS). It indicates that there is disintegration between accounting system and the internal management role in providing transparency information.

Brammer and Pavelin (2004) opined that companies set disclosure cost of social activities to bring visibility about company performance on social (environment) issues to their stakeholders.

The important thing based on the findings revealed that at the first time of the company's decision to incorporate the environmental aspect requires them to adjust management system with reorganization and restructuring capital (in Section 4.3.4). It is for supporting management policies towards incorporating environmental accounts.

This is the indication of internal management effort for integrating EA to current accounting system. The reorganization meant, transferring the human resources, eliminating some duplicate managerial positions, and instituting a new hierarchy of command (Robbins, 1996, p. 393). Hence, to legitimate the new organization structure and optimize the process to incorporate the environmental aspect (and other externalities aspects), it combines with restructuring capital at this point there is an investment for supporting the activities and a better decision.

There were several perspectives on reconstruction of the accounting procedure on EA intake to management system. This is basically to avoid hidden cost. It is supported by Joshi, Krihnan and Lave (2002) about adherence of hidden cost on environmental expenditures that provide a reasonable proxy for regulatory pressure by aggregating realized effects of emission standards, legal and political battles, technical negotiations, enforcement effort, and innovation.

Findings on performance measurement in Section 4.3.5.1 and 4.3.5.2 reveal that a new structure of the organization and capital expenditure support management of both companies to analyze and evaluate their performance. According to Yusoff and Lehman (2009), the indication of semiotic influence on reporting made by the company which has been dealing with reorganization matters, provides more environmentally substantive disclosures than those without organizational changes. In other words, the existing organizational structure and the accounting system should run alongside the current regulations to produce essential quality reports.

The literatures on the logic of presence stated that accounting is an area for creating accounts and transparency (Kang & Gray, 2011). It is very important for an

accountability matter (Catasus, 2008). An absence of account would ruin the accountability efforts made by an accountable manager (Gray, 2000; Staunton, 2008). Negash (2012) discovered the absence of environmental accounting data in the earnings impacting on quality literature (information) for connecting to the past and present activities of the company. Meanwhile, the absence of environmental accounting data gives chance for debt and overstatement of earnings. Such as the findings in Section 4.4.1.1, EA data in current year of the Financial Statements should be supported with the Sustainability Reports from previous year. Otherwise, the external stakeholders may interpret the Financial Statement to overstatement of earnings in previous year as a wrong done by the management.

PSAK 4 determines the structure of reporting on the environment (CSR) and other additional information in a separate section as value-added reporting in the Financial Statements. But the communication media is not only through authorized institutions; it could be released through online media.

The finding on procedures of EA practices contributes to setting the accounting procedures of EA as in Figure 5.6. This procedure provides information on EA in different allocation but it can be traced from the evidence. Gonedes and Dopuch (1979) mentioned about the basic inquiries that accounting techniques provide the computational specifications of accounting numbers. Thus, some changes in the properties of individual firm's accounting numbers may have been induced by changes in these accounting techniques and not by changes in the relevant attributes of their decisions. As such, framing accounting techniques pertaining to EA by blending them with the accounting process of EA practices is *the second contribution of this research*.



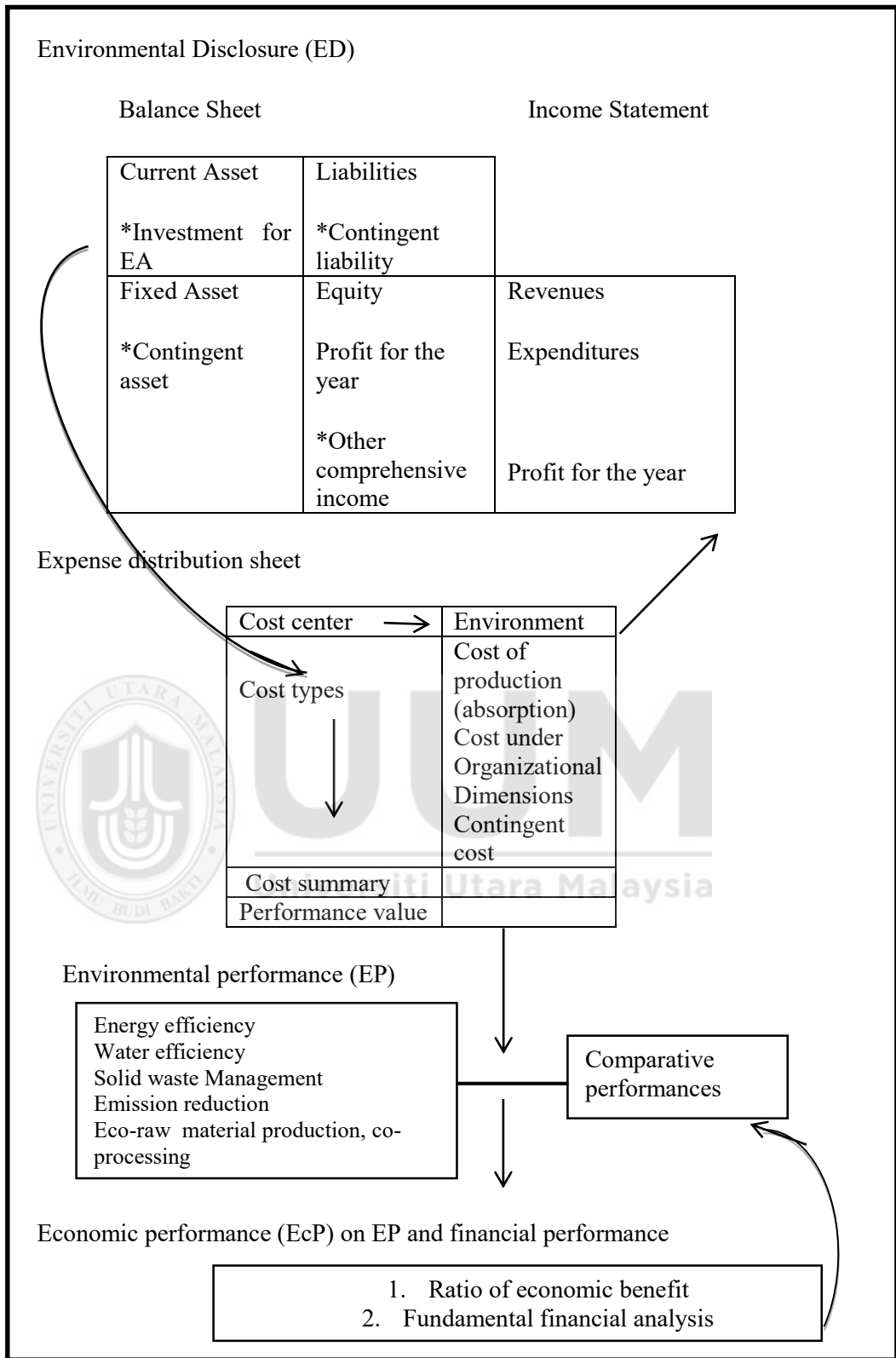


Figure 5.6  
*The Framework of EA Process to Support ED from the Findings*

The framework as seen in Figure 5.6 is plausible for any kind of industrial company as long as the regulations are followed. Each element of EA accounts is based on the case studies on the Company A and the Company B (Section 4.4).

Accounting procedure is a process from recording to reporting of financial information for providing transparency accounts. Standardization is the key to manage the accounting function, as Marra, Mazzola and Prencipe (2011) asserted that the reliability of administrative and accounting procedure is to provide information on cost related to environmental aspect.

Environmental accounting process in Figure 5.6 can be started by using a simple approach proposed by Merlo (1996). Companies A and B followed conventional accounting principles; so the first step is to start with the main financial statements: balance sheet and P/L account of a particular company.

The second step is setting EP or geophysical performance or social performance from environmental conservation activities, such as energy efficiency, water efficiency, solid waste management, emission reduction and eco-raw material production.

The third step is outlining EcP as perceived by the management to maintain its assets and liabilities. Such outline might include changes in stock, risks due to natural hazards, avoidance or reduction in hidden values, and reduction in the cost of production towards enhancing total cost efficiency. For example, Biobele and Paul (2012) cited from UNCTAD (2004) and suggested quantifying the EP of a company caused by its activities to get EcP value using the following equation:

$$VA = \frac{\text{Environmental performance}}{\text{Financial performance}}$$

Where VA is value added which is calculated by subtracting the amount of external cost of goods purchased from the value of goods or services produced (Mook, 2007, p.89). Then, the value added is called economic benefit (EcP) or a monetary value on EP; EP is in physical unit; and financial performance or economic benefit is also in monetary value. So it results in value added in one unit per cost efficiency. Financial performance differs from EP. It is associated with funds allocation that is supported by management for environmental conservation activities. An example of calculation can be seen in Appendix G.

The fourth step is aiming at incorporating non-market benefits and costs (externalities), or, at least providing a framework for their incorporation, as far as they are counted in monetary terms or by other means as seen in Figure 5.6. This is to link activity with the internal financial system.

#### **5.4.1 Environmental Investment and Allocations**

Successful organizations always adapt to the changes in their environment and proactively change paradigm about the environment in order for their business to grow and continuously enhance the performance. On the other hand, the contingent environmental uncertainty factor is considered to be of huge importance as widely recognized by other studies in the organizational design domain (Chia, 1990).

Based on the findings of general procedures of EA practices, investment is placed in a realistic condition in accordance with the financial commitment of the BOD.

According to Spencer and Adams (2013), financial commitment is necessary to start the initial phase of the implementation of EA and environmental sustainability is a strong driving force for improving EP. EA investment is taken from the allocation of profit reported in the Profit/Loss Report or part of the reserves allocated in cash is reported in the Cash Flows Report. There are three stages of environmental conservation cost behavior associated with company's priority in implementing EA. Gunarathne and Lee, (2015) discussed herein:

1. Initial establishment

In the initial phase of investment, a company establishes the amount which depends on the commitments of the BOD. Investments in EA is costs that are not related to the independent variable of output. The cost of investment can be constant or be changed throughout the relevant range and are usually considered as sunk cost for the relevant range (but not relevant to output decisions). At this stage, companies use internal funding that has been agreed by the BOD. Funds are derived from profit to be allocated for investments. It is a short-term disbursement and does not need to be adjusted to fair value for investment periods. As an example, the case of company B taking two years to improve the internal system that supports EP. At that time, Company B did not have a continuous term. The magnitude of investment allocation is adjusted to the conditions and BOD policies. At the time the company adapted EA, coordination with the relevant regulators, who set standard rules to make, system improvements to the management, technology and human resources were carried out.

In the early stages of the assesment, the management focused on the regulator's measurement achievement or law. In Indonesia, there is a rating level of environmental

compliance: 1) black level is the worst level - at this level, the company can no longer obtain a renewal of business permit or get an environment license; 2) red level is the corporate level – companies are given the opportunity to improve environmental conditions and at this point, the company is not allowed to conduct business activities; 3) blue level is a point where the company may perform business activities while improving some environmental indicators that have not been done by the company; 4) green level is the level the company has done all the indicators of a healthy environment according to standards of the government; and 5) gold level is the highest level for the company with the achievements of environmental activities and progress.

From this ranking, companies need to know their starting position. Such was the case of Company A in 2002, it received red level. Company B received red level in 2004 and 2008. The goal to reach the green level and ultimately the gold level requires hard work and more investments.

## 2. Compliance

When a company engages a third party, including regulators, investments will increase in order to follow regulator's requirement. It is management's discretion to allocate fund resources. In the case of Company A, it engages with the CDM program to get global carbon credit.

In this phase, a company tries to build a massive environment-friendly technology and set up an integrated system for all programs such as ISO 14001, for supporting its capacity. In this stage, a company faces unpredictable factors, such as community risk,

hidden cost and agency cost, as well as the need to maintain competitive advantage (Gunarathne & Lee, 2015).

### 3. Sustainability

This stage comprises four aspects: organization, technology, activities and regulatory compliance. A high external expectations on the company are not only to produce quality products but also to be sensitive to environmental conservation for reduction of global emission, which places the company at the stage of 'beyond compliance'.

Beyond compliance means a company can achieve maximum competitive global confidence. It leads to the need for greater funding for innovation using environment-friendly technology. Besides the aspect of conservation activity, there are requirement to decrease production costs with raw material supply fit to green technology. Companies are expected to have a chain of suppliers who have implemented EA. Suppliers should offer more environment-friendly raw materials and more cost efficiency.

Firoz and Ansari (2010) mentioned that the obligation to manage the environment can be counted as environmental liabilities, according to their substance and economic causes. PSAK 1 paragraph 35 (as shown in Table 4.3, p. 167) discussed about substance over form; that recording and presentation of a transaction are not to be viewed only from a legal basis but also in accordance with the substance and economic reality as well.

## 5.5 The Measurement and Disclosures

Another accounting view is associated with the absence over form principle in the measuring process. Measurement and disclosure are integrated process. For example, Burritt, Schaltegger and Zvezdov (2011) explain that in a regulatory reporting is needed a performance measurement system using physical units. Physical units generate key performance indicators of actual company performance in absolute terms. However, measurement approach should be based on rules or standards for recognition, measurement and disclosure of environmental information, either within the same industry or across industries (Biobele & Paul, 2012). Identification, classification and assessment are common concepts in the accounting process.

Based on the results of the analysis, the framework of ED procedure can be set and concluded from cost data (Section 4.3.5; associated with cost structure), analysis for improvement (Section 4.2.1; associated with external and internal functions), and indicators through a flow chart of analytical procedures associated with disclosure or reporting of the EA practices. *This becomes the third research contribution.*

Based on the findings of the Indonesian regulations related to environmental treatment and general procedures of EA practices, from the cases can set a procedure for analyzing the information accounts of EA that can appear in disclosure reports. Figure 5.7 gives an overview of the steps to accommodate indicators of EA disclosure. Analytical procedures can be used to analyze EA indicators to pursue systemic thinking of “what should be in disclosure or reporting”. Prorokowsky (2016) stated that lack of ED means that improvements are not quantifiable. Comello, Lepech, Asce, and Schwegler (2012) suggested that for the valuation of ecosystem services,

management should provide a structure, process or product that is a quantifiable metric of performance. The use of logical performance to provide quantifiable data can be seen in Figure 5.7.

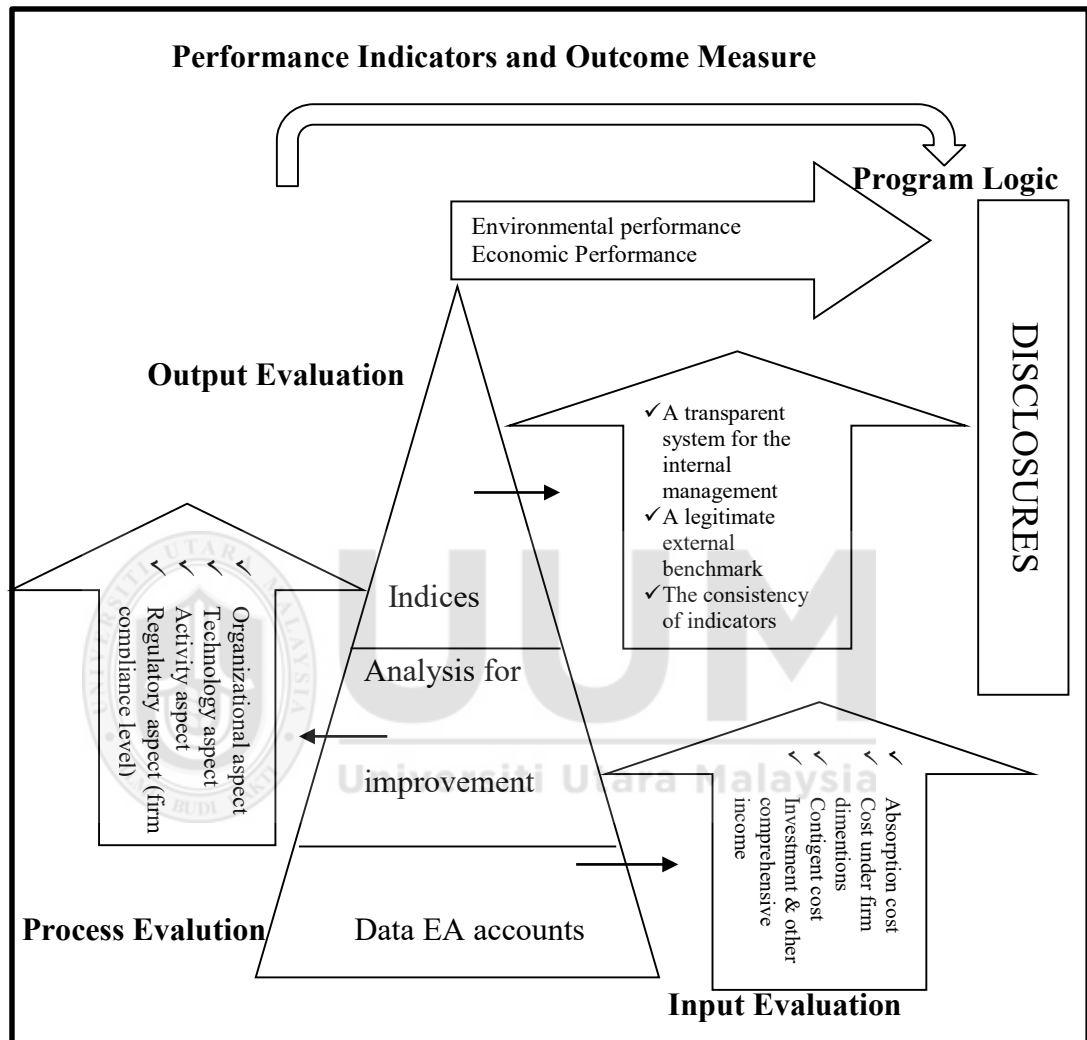


Figure 5.7  
Diagram of Analytical Procedure from Findings

Margerum (2011) noted five ways of evaluating the success of collaboration between managers and regulators. They are: 1) input evaluation, 2) process evaluation, 3) output evaluation, 4) performance indicators, 5) outcome measures and for settling up the evaluation needs a program logic to accommodate information which refers to ED.



Hence, based on the findings from regulators perspective and practices of EA by SOEs, this study comes up with an analytical procedure as depicted in Figure 5.7.

Firstly, the input evaluation should be discussed. For, the cycle begins with an overview of daily transactions data derived from cost center and the environment activities that are funded by enterprises and being recorded in journal entries. When performing the entries, there is a need to analyze this type of data according to: 1) absorption and non-absorption cost; 2) cost under firm dimensions; 3) contingent cost; 4) investment, and 5) other comprehensive income (types of data associated with cost structure in actual transaction basis). Furthermore, the analytical cycle follows accounting process as shown in Figure 5.6.

The next step is process evaluation that performs an analysis for improving indicators. The company wants to quantify the environmental impact to follow current regulations. The data is provided in the environmental activity card (matrix card). The activity shows the actual physical unit to maintain levels of waste, pollution or other environmental impacts.

Based on the findings on SOEs practices, there is no monetary information in the activity card. However, from the accounting perspective, any activities inside the organization are definitely related to consumption costs. Hence, Burritt et al. (2011) opined that a physical unit can be a basis for key performance in monetary values. Thus, there is a need to evaluate what items are to be measured in monetary value and become value-added information. Using four aspects from internal function and

external function can be tools for classifying the items (explained in Section 4.2.1 (Sub A)).

The third step mentioned by Margerum (2011) is output evaluation. Based on the findings in Section 4.4.1.1 and 4.4.2.1 that are related to classification cost structure into EA practices, this step asserts the indicators and evaluation indicators through comparative approach (with other similar industry or ex-ante/ex-post year). Three stages of examining and analyzing performance measures are revealed in the findings of Section 4.2.5 as follows: 1) A transparent system for the internal management by scanning the classification of costs (environmental cost versus investment, 2) A legitimate external benchmark by classifying cost related to function, and 3) The consistency of indicators by evaluating the amount of engagement (activity versus cost). First is the scanning of each cost recorded or realized in every aspect which is related to environmental matters. There are some activities that seem to be related to environmental conservation but they are not, such as land used for the construction of waste treatment infrastructure. Land can be derived from lease asset or company asset. Particularly, the Indonesian Statement of Financial Accounting Standards (*Pernyataan Standard Akuntansi Keuangan/ PSAK*) does not distinguish between land assets for environmental conservation functions and other land sites.

Secondly, classification of each section of the environmental costs interacts with the other aspects. Hence, each aspect creates cost. Figure 4.2 (Chapter 4) showed the perception of “use of organizational standards” in order to maximize and strengthen internal functions (organization, technology, activity aspect). Organizational restructuring will need an integrated management system; it should interact with the

organizational aspect, technological aspect and activity aspect. Burritt, Schaltegger and Zvezdov (2011) pointed out the importance of developing new integrated management information system within existing functional department. In this regard, technological aspect should be classified as soft technology or hard technology. Soft technology is noted by Fernando, Wah, Shaharudin (2016) as eco-innovation to a lower carbon footprint. Activity aspect follows the classification of technology, such as for soft technology, it needs knowledge transfer to keep employees' mind-set aligned with the new vision of the organization. Thirdly, the economic measurement of every environmental aspect is carried out. This tends to show the level of acceptance of employees of the new organizational structure. This valuation should be under human resources department. The result of the section is the card of employment performance that can trace back to personnel cost. So, it is not assessed as either EP or EcP.

The fourth of Margerum's (2011) step is related to generate indicators of performance. Based on the findings, the performance indicators provided by SOEs on EA practices are with different characteristics. As shown in section 4.4.1.2; it is related to environmental performance (EP) and economic performance (EcP); in section 4.4.2.2, it is related to geophysical and social performance. On what is strategically developed by management.

The fifth step of Margerum's approach (2011) is considered to understand the measuring of EA performance and expected the outcomes of program logic (for helping in the understanding of internal function as in Figure 4.3). Margerum (2011) explained that program logic is targeted or the prioritized on where currently the

organizations are involved. Here, this research refers to ED to be a logical program as part of EA practices. Based on the findings, indicators performance characteristic are based on management policy (different format of the Sustainability Report in Section 4.3.2). Management policies influence on setting content of ED. Hence, the program logic perceives as environmental disclosure (ED) to communicate with external stakeholders about company policies.

The communication through ED is the way that the implementation of EA provides a positive impact to the organization; otherwise, the organization will not be able to measure the main benefits of EA, such as production cost efficiency. Mahadeo, Oogarah-Hanuman, and Soobaroyen (2011) reasoned that acknowledgment of an environmental impact by a company may get the attention from unwanted parties and thus, threaten organizational legitimacy.

An indicator of environmental impact is pollution (Gumilang, Mukhopadhyay and Thomassin, 2011). They found that increasing of pollution is followed by increasing of sales i.e. in liberalization market. It is consistent with Biobele and Paul (2012) who found that the relationship between EP of a company is caused by its activities and EcP, i.e., the financial performance produced by the same activities during a specific period. However, market reaction could be different when firms occupy EA as Saka and Oshika (2014) found that EA is positively associated with increasing market value using indicators of reduction in emissions, material usage, and energy usage (Biobele and Paul, 2012). The ratio of EP over financial performance is measured in monetary unit.

Johansson and Winroth (2010) studied the environmental impacts related to internal recycling processes, such as remanufacturing to refurbish product sub-systems and components, where environmental impacts occur in the entire supply chain. This approach leads to a reduction in the cost of production and increases the environmental conservation activity performance as well. To show how the calculation works in association among cost investment and contingent liability, government subsidies, tax refund (perceived as environmental conservation cost and biomass cost), electrical efficiency usage related to efficiency on the cost of goods manufactured (perceived as environmental conservation benefit) are added. It supports for a clear picture of economic reality on relating to substance over form of the environment.

#### **5.5.1 Economic Benefit in Monetary Value**

Economic benefits refer to the productive effort of the cost of the environment. According to Martinez et al. (2012), not all conservation costs can be compared to the benefit in monetary terms. There are two things that make it difficult to measure economic benefit: the technical problem to measure the economic benefit of the company's environmental conservation and the form of reporting in accordance with accounting standards in Indonesia.

Valuing the economic benefit is slightly different from environmental conservation benefit. Martinez (2012) used the syncretistic mechanism, i.e., a “combination of non-economic and economic objectives”. It stimulates the two approaches of the company to disclose their activity, in quantitative way or qualitative way.

Table 5.2  
*Economic Benefit of Environmental Conservation*

<b>Activity</b>	<b>Description</b>	<b>(in the monetary value)</b>	<b>(in physical unit )</b>	<b>Environmental conservation benefit</b>
Water usage before efficiency	Water usage in actual cost	Regular fares of water usage (government data)	Total usage in m <sup>3</sup> (operational company data)	
Recycling water usage	Converting liquid waste to become water cooling in production process	Cost/unit (internal management data)	Water usage m <sup>3</sup> for cooling process (internal management data)	Water usage in efficiency
Reporting water usage after efficiency	Water usage reported in Financial Statements			(total usage in regular rates) + (water usage in efficiency)
Electrical usage before efficiency	Electrical usage in actual cost	Regular fares of electrical usage (government data)	Total usage in Kilo Watt Hours (internal management data)	
Reshaping Biomass to energy supply	Efficiency by electrical biomass	Cost/unit (environmental performance data)	Energy usage in KWH	Electrical usage in efficiency
Reporting electrical usage after efficiency	Electrical usage reported in Financial Statements			(Total electrical usage in normal cost) + (electrical usage in efficiency)
Emission reduction	(Total CO <sub>2</sub> in prior year) – (total CO <sub>2</sub> in current year) = (a)	Respiratory health cost/person (minimum society insurance rate) (b)	Numbers of community around plant site (Ring 1) (c)	(a)/(b*c) Percentage of the environmental impact

Table 5.2 (Continued)

<b>Activity</b>	<b>Description</b>	<b>(in the monetary value)</b>	<b>(in physical unit )</b>	<b>Environmental conservation benefit</b>
Reporting of emission reduction	1. Reporting on Reduction of environmental impact on public health in Sustainability Report.  2. Reporting on emission reduction efforts in Sustainability Report.			

Hence, as shown in Table 5.2, the environmental performance can be reported in non-economic and economic objectives measurement. Measuring the economic benefit requires environmental conservation benefit related to data, such as all environmental conservation activities mentioned in corporates practicing on EA (Section 4.4). The combinations of non-economic and economic objectives in a summation of objectives in the monetary value are multiplied by objectives in physical unit which relates to economic' objectives as showed in Table 5.2.

Important information shown in Table 5.2 that related to water usages in efficiency, electrical usages in efficiency, and the percentage of environmental impact. Here, the difference between the actual execution of measures (actual cost) and the target (cost after efficiency) is valued according to standard costs (representing the normal costs for this operation), and serves as a means of correcting the annual operational results (reporting or disclosure). All information connotes companies' effort on

environmental conservation. Through comparing to prior years and with other company in similar industry will provides evaluation on practices. Evaluation refers to Ball (2005), commented that accounting is not merely bookkeeping system, but it relates to change people behavior.

Data in monetary value gives a positive signal for improvement of product quality and company image. Companies that use EA have positive sales levels (Saka & Oshika, 2014). Consumers have decisions and actions that are directly related to the consumption of products and services in ways that are less harmful to the ecological or natural environment (Martinez, Marte, & Roxas, 2015). Therefore, it is important for companies to provide financial information about their efficiency efforts.

The example method to calculate the benefit of environmental investment for internal management relating to efficiency cost is adapted from McGuigan, Moyer, and Harris' (2008) equation. In the equation, eco-investment is not considered as part of cost efficiency. Whereas Field B. and Field, M. (2006, p.180) uses multiple regression analysis to encourage a company to believe that costs should decline gradually over time until reaching the efficient point which should be equal to balances between the marginal environmental damages and marginal control costs as a result of eco-investment (environmental investment).

McGuigan et al. (2008) approach is represented by the relationship between the demand schedules or demand curve and price-quantity. The existing factors are product substitution and substitution costs of production to hold down the prices. As noted by McGuigan et al. (2008, p. 35), the notation consists of variable (x). Adaptation from McGuigan (2008) is a modification of price movement into



production cost efficiency movement (Krozer, 2008). Krozer (2008) revealed the costs to comply with the emission reduction targets that provide a benchmark for an efficient life cycle management. The model is similar to the regular target costing in management accounting.

The only way to incorporate the environment investment effect into the cost equation is to include a time trend (t) as an additional explanatory variable, as the equation of monetary function:

Notation x (x1, x2, ...) is the determinant to obtain the expected value of the variable (y). Therefore, the variable (x) can be gathered from the company's financial data. Notation (y) is modified as monetary benefit (e.g., of cost efficiency, revenue increase) from environmental conservation cost of determinant x with time being (t). Hence the equation can be adapted from McGuigan et al. (2008) and Krozer (2008);

$$y=f(x,t)$$

$$y= f[(EI, PS, TI, ES, SA,RC,FC,SG)x,t]$$
 where

y = monetary benefit (cost efficiency)  $\approx$ (cost of goods sold- total abatement costs)

x= quantity of products at efficiency

EI = eco-investment

PS = price of unused substitute inputs (e.g., charcoal)

TI = technological improvements (e.g.,heat inverter)

ES = entry or exit of other product sellers

SA = accidental supply interruptions from fires, floods, etc.

RC = costs of regulatory compliance

FC = expected (future) changes in price

SG = taxes, subsidies or allowances, grant, loan for emission reduction

t = adjustment time period

The example of combination calculation between physical measurement (perceived as EP) and economic benefits (perceived as EcP) is related to count cost of production. According to Walker (2009, p. 29), cost of sales is the cost of the goods or services that have been sold to generate the revenue for the period and the cost of goods sold is most easily derived for a manufacturing company but does not include support cost, such as marketing and official expenses to get actual cost related to production. Somehow, in the annual report, the firm reports total cost of production that is already deducted by total abatement cost. Thus, total abatement costs can be cited from EPA (1995, p.9):

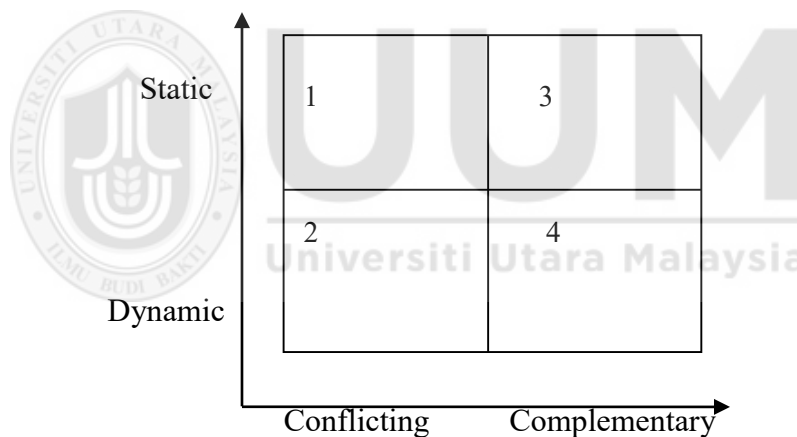
- a. The costs of reducing pollution (e.g., costs of scrubbers, labor needed to maintain them, etc.).
- b. The opportunity costs of lowering consumption or production.

The quadrant position as shown in Figure 5.9 is adapted from Rugman and Verbeke (1998). It is configured as the movement of the variables at the four performance impact to cost of production, revealing the existence of impact on environmental conservation activities (based on the findings about cost structure in Section 4.4.1.1, 4.4.1.2, and performance measurement in Section 4.4.2.1, 4.4.2.2).

Rugman and Verbeke (1998) set the matrix interaction between corporation and government related with the environmental policies. The framework reflects the four main possibilities of the consistency between corporation and government goals. In

quadrant 1 of Figure 5.8 interactions of corporation and government are driven by goal conflict. This reflects the tensions between the micro-efficiency-driven behavior of corporation and the macro-efficiency or distributional objectives of government. In quadrant 2 there is consistency between corporation and government goals, but corporation has mistaken in resource commitments. In quadrant 3 represents a low visibility of corporate's goal, because corporate use own standard to evaluate its environmental performance without consider to compare with other corporate performance in similar industry. The opposite situation arises in quadrant 4; here the goals of corporation and government are complementary.

Time horizon of managerial response



Impact on industrial versus environmental performance

Figure 5.8

*The Impact of Environmental Regulation on the Firm*

Source: Rugman and Verbeke (1998, p.365); Rugman, Nguyen, & Wei (2014)

This theory was applied by Rugman, Nguyen, and Wei (2014) to develop a framework matrix of interaction between multinational-enterprises (MNE) subsidiary, MNE parent, and host and home government goals in China. However, this framework can explain the position matrix between corporate perspective and regulator's articulation related with environmental aspect in accounting. Thus, the similar framework is

revealed by Gunarathne and Lee (2015) who posit three stages of environmental conservation cost behavior associated with company's priority in implementing EA (explained in Section 5.4.1).

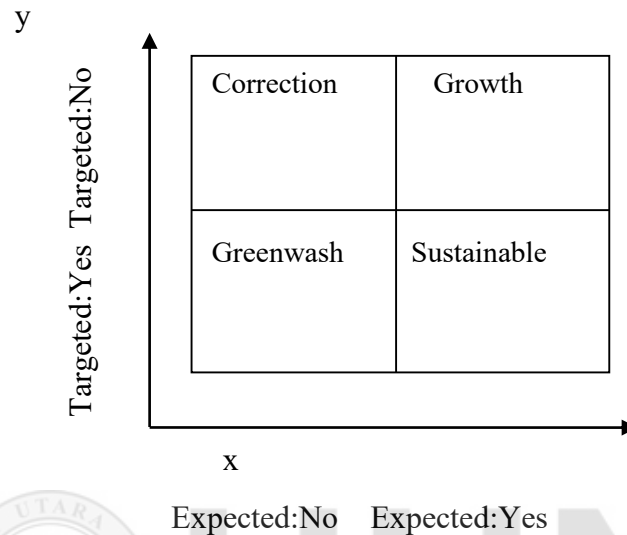


Figure 5.9  
*Quadrant of environmental performance from findings*

The greenwash quadrant (Figure 5.9) shows an investment cost for the environment that tends to be short-term; the direction of the arrow for the value of (x) changes from the expected to become unexpected or no change in line with the quantity of short-term investments (trimester or three months). Similarly, the environmental impact on the cost of the investment will not have any effect likely on the cost of production or the constant (but a burden on other administrative expenses). Using the equation model based on the literature on financial disclosure, Lyon and Maxwell (2011) pointed out that greenwashing practices increase because the communication of environmental messages are still uncontrolled by any industrial standards. There is a real possibility that the threat of public backlash for greenwash will cause some firms to “clam up” rather than become more open and transparent. Rugman and Verbeke (1998), and

Rugman et al. (2014) argued that at this stage firms reject the negative impact of environmental regulations on company performance.

The growth quadrant (Figure 5.9) shows consistent use of investment costs for every year. The impact on investment of cost efficiency of production has yet to show significant contribution. There is a tendency of investment costs to become a burden. Tate, Ellram, and Dooley (2014) stated that companies enter into contracts in order to create different fixed costs and variable cost structures. Companies need technological innovation by considering other aspects (organization, activity and regulatory). Usually, companies enter this gradient in the first stage of environmental conservation cost behaviour (in Section 5.3.1.1). In this quadrant, position (y) is inversely proportional to (x), where (y) moves from the expected direction toward the level of unexpected charges; while (x) moves from non-targeted towards the target. Companies may reduce environmental impact but cannot yet measure the economic benefits of such activities. Rugman and Verbeke (1998), and Rugman et al. (2014) refer this stage to win-win literature on sustainable development and green management, but the greening become inevitable as a result of external pressure. The external pressure in accounting perspectives refers to the increasing of contingent liabilities.

The corrective quadrant (Figure 5.9) shows unfavourable changes in terms of environmental impact generated on the quantity of production and environmental costs as well as the tendency of the absence of cost efficiency. This behaviour is actually happening in companies that have implemented environmental investment cost in the long-run. Johanson and Winroth (2010) found a number of costs which are associated

with poor environmental compliance to include various types of costs, such as hidden cost, contingent cost and image or agency costs. Reduced potential conflicts and enhanced organization structure for strengthening manufacturing strategy are to collaborate more with the environmental issue. Companies in the transition from growth gradient to the sustainable quadrant (see Figure 5.8) is likely to be in the second phase of environmental conservation cost behavior. Rugman and Verbeke (1998), and Rugman et al. (2014) opined that firms merely comply with environmental regulations but firms do not find any benefits in developing green competencies that are brought under this stage.

The sustainability quadrant is the condition where directions of arrows reach the targeted area. Johansson and Winroth (2010) said the effort to achieve high resource efficiency and elimination of unnecessary activities inherent to lean on environmental friendly manufacturing approach. This stage refers to develop the green capabilities in innovation offsets, due to the complementarity between the home base environmental regulations and industrial performance (Rugman and Verbeke, 1998, p. 365).

The example of summation using the efficiency cost notation on company A and B can be seen in Appendix F. Company A was found to be in a position of the corrective quadrant (Appendix F), while Company B is in a position of quadrant growth. Company A has the possibility of being in the corrective quadrant (Appendix F) because of the magnitude of contingent liability (see the calculation in Appendix F) that impacts on negative returns on investment (see Appendix H); while Company B is located on growth gradient possibilities allocation factor for environmental investment allowance derived from the Profit/Loss Statements or the Comprehensive

Income Statements of each year, the amount of investment allocation for the environment in proportion to the increase in revenue (per unit variable cost). The position of Company B could shift to the greenwash quadrant if the level of net income declines.

The combination evaluation on EcP on EP and financial fundamental performance can give more thorough analysis than standalone EP analysis. It is in consistency with Mohd Said, Sulaiman and Nazli Nik Ahmad (2014) who confirm in current financial decision-making practices still prefer to use conventional approach such as financial information than environmental aspects.

External funding for environmental investment is affected by the financial structure. The financial implication can be managed through the integration of accounting systems and practices (Setthasakko, 2010). The method of calculation for the benefit of environmental investment for internal management relating to efficiency cost is the second recommendation for further application in the evaluation of EA practices.

## **CHAPTER SIX**

### **CONCLUSION**

#### **6.1 Introduction**

This chapter presents the synthesis of key points in findings and implications of the study and recommends new areas for future research. Furthermore, the impact and findings provide answers to the research questions and objectives pertaining to EA practices.

#### **6.2 Contribution of Findings**

The answers of research objective one is important because it notes the content of environmental regulation and accounting regulation that support the practices of EA. The categories constructed from regulators perspectives were 1) use of organizational standards, 2) enforcement of environmental laws, 3) management of organisation system & activities, 4) reporting, 5) evaluation of environment accounting, and 6) Sustainability. The single sentence of essence from the categories of first theme is the regulators' articulation to the integrating report for economic, social, and environmental activities.

It is found that Indonesia does not have an objective standard of what and how to treat EA in business practices. The government has yet to provide monetary facility for example tax reduction for supporting environmental conservation, remediation fund, and insurance (as explained by regulator in Section 4.2.2, p.154). As a token of appreciation for businesses that are environmentally friendly, a certificate is awarded by Ministry of Environment and Forestry (KLHK) that can be used for facilitating the



business license and bank loans. Nevertheless, increasingly severe laws requirements must be applied every year.

On the regulatory side, the legitimacy gap is one of the challenges for developing EA. Multidisciplinary study on public sector or laws can assert the legitimacy issue related to EA practices in future research. Legitimacy issue stated in Section 4.2.1 reveal how the company under limited guidance about EA get affected in practices through the deepening study on supported data, and through interviews with regulators. Due to internal aspects that regulators provide only physical standard relating to the way companies conduct measurement, which further refers to the legitimacy gap. All such aspects are: 1) aspects of the internal function (referred to organizational, technology, activity aspect in Section 4.2.1); and 2) an aspect of external function (referred to regulator aspect in Section 4.2.1, Sub D). The occurrence of legitimacy gap is felt by the internal management that may not fully control its environmental costs. The regulation (litigation) can play a supporting role or can be a constraint for entities practices to achieve entities goals (to enhance economic stability and stakeholder's satisfaction). Based on the explanation and description on the cases, analytical procedure on content of environmental measurement and disclosure can be set as the ED procedure (Section 5.5).

Relevant to research question two, there are internal policies that guide companies to address EA, particularly in respect to the environmental regulations. International stakeholders are forcing companies to incorporate environmental elements into their business practices. It is advisable for companies to avoid risk from the environmental impact (degradation of air, water, land, and health because of pollution). Thus, in

pragmatism, a company's ability to adapt to the existing regulations is the key factor behind company's successful EA practices. Here, the adaptation of management to strategic planning is related to the incorporation of environmental aspects in their management system.

Overall, this study comprises of informative contribution to answer the second research question about analytic at techniques in the practice of EA based on two cases (SOEs) which have been practicing EA. There are significant capital structure and products, controlling more than 50% of the national market for the main products. Both companies were also included in the list of recipients of prestigious awards from the KLHK; they were accorded the Gold rank or the highest ranking for organizational businesses among all environmental friendly companies in 2013.

From the saturation method, it provided the accounts or cost structure of EA practices, aspects of performance measurement, the type of performance, and disclosure which applies to EA (stated in Sub-section 4.3.5).

The classification of accounts on EA regarding cost structure were based on the characteristics and functions of expenditures in the Annual Report or the substance of EA accounts. It was classified into four aspects: 1) costs that can be absorbed in the cost of goods manufactured; 2) costs according to the dimensions of the company or expenditure in accordance with the defined characteristics of the company; 3) contingent costs or disbursement contingency cost appropriate to the function related to third parties; and 4) investment and other comprehensive income or expenditure for the environment from internal and external funding sources (Section 4.4.1.1 Sub D and Section 4.4.2.1 Sub C).

Aspects of performance measurement and classification of performance of companies' practices depend on internal and external aspects that is stated in Section 4.4, Company A classified performance as EP and EcP (Section 4.4.1.2 Sub A and Sub B), and social performance in Section 4.3.5.2 (Sub C), while Company B classified performance as geophysical performance and social performance (noted in Sub-sections 4.4.2.2 Sub A and Sub B).

The general questions about disclosure on EA practices are how and what information can be set in a standardized format as there is no specific standard for EA. OJK-RI suggests companies disclose in an integrated report about internal operational standard of company efforts on the environment conservation activities (associated to CSR). In practice, the disclosure contents of EA depend on management's strategic plan. It could be seen that Company A included stakeholders' inclusiveness (Sub-section of 4.4.1.3) as primary consideration, and Company B considered the licensing process (Sub-section of 4.4.2.3).

The answers of research question three is offered through the plausible conceptual framework on EA practices. The Figure 4.7 depicted how EA practices should be undertaken as part of companies' general accounting procedure (Section 4.4). Whereas the perceptions had synchronic messages in correspondent characteristic (Section 5.3.3), it was strengthened by latest literatures as part of making sense of data.

Those discussion about the substance of EA accounts are associated with economic causes like environmental investment, environmental impact, and economic benefit in monetary value such as cost and benefit principle as explained in Section 5.4 and 5.5.

### **6.3 Contribution of Study**

Based on the finding, the formulated plausible conceptual framework consisted of ten constructs of perceptions on EA practices, and two implication perceptions on practices.

It is expected that the findings from the case studies can strengthen the role of accountants in setting and implementing financial reporting standards in accordance with IAI's direction for a common standard for financial regulations. Thus, this research contributes to accounting practitioners to improve their understanding of the importance of EA as part of recognized accounting standards.

Firstly, in relation to EA standards and its disclosure, this research reviewed and developed environmental requirements that are in adherence to voluntary disclosure in Indonesia. Regulators did not mention about their effort on converging EMA (international standard of environmental management accounting) to its GAAP. The internal management did not mention their EA systems to voluntarily adopt (or adapt) international EA standard, except, company has agreement with international third party related to credit emission mechanism. Accordingly, this research can support policy-makers in deciding regulations and procedures of EA reporting in Indonesia.

Secondly, from the academic perspective, there have been slow responses to the issues of EA, whether they are financial or additional reporting research, mainly due to unavailable of EA (implicitly stated) standards which should be followed by Indonesian companies. This research contributes to the few studies on EA in Indonesia on EA practices, especially from the regulators' perspective and internal

management's perspective synchronously associated with the general procedure on EA practices.

Lastly, it is very useful for the business environment. International market and investor use environmental disclosure to gain a signal on financial information of a company's future standing, and to get guarantee about the quality of production (process) and the product. Thus, this research captures the need for EA in a financial accounting system and helps companies to adapt to the best practices of EA. It can enable investors to differentiate between companies who promote and adhere to the sustainability of their environment and those who ignore it. Also, from this research, internal management (company) can gain a better understanding on pragmatic measurement of EA, thus supporting them in practicing sustainable EA.

## **6.4 Recommendations for Future Research**

### **6.4.1 Study on Level of Legitimacy Gap in Accounting Regulations**

In Indonesia, environmental regulation is under the KLHK, while the institutional functions of the Securities and Exchange Commission are under the OJK-RI. Moreover, accounting standard setters are in the Institute of Indonesia Chartered Accountants (IAI). Each product regulations still confront EA in the gray area. On the accounting regulatory side, especially the IAI does not have political authority, especially at ministerial level of cross-sectoral authority.

Furthermore, legitimacy gap is one of the challenges for developing EA. Even on cost structure set by the company or on associated contents of disclosure, the statutory power cannot be passed out from business practices. Legitimacy gap is a hurdle to

maximize stakeholders' satisfaction. Also, regulators' articulation on EA practices are considered as important factors for EA practices.

Integrated in the Annual Report which is conducted as a integrated for getting information about company performance. The company performance is associated with EA practices in based primarily on management strategy on reporting. Information on environmental costs from previous year that also relates to shareholders' wealth and decision of internal management can eventually affect current and future position of accounts in financial statements. Hence, the researcher suggests for future research on the hidden risk of legitimacy gap to stakeholders (internal and external).

#### **6.4.2 Study on measurement approach**

In future studies, elaboration a “combination of non-economic and economic objectives” will stimulate the two approaches of the firm to disclose their activity in a quantitative or in a qualitative way. The calculation can be obtained from economic benefit based on EP, and from a financial accounting perspective. Measuring the economic benefit requires environmental conservation benefits related to data on total environmental conservation activities. For example, in energy conservation practices, there are different approaches to converting energy and to reduce energy usage. It has different treatment in accounting as well as different impact on financial position. However, the measurement of EP and EcP can support the fundamental financial analysis.

### **6.4.3 Methodological Study**

The perspectives of the regulators and internal management need to be synchronized in order to obtain proper EA practices. This stage can be obtained by using quantitative method. In future studies, association between regulators' perspective and internal management's perspective can be valued in quantitative approach that can be conducted only in specific circumstances (demography features). Also, different countries have dissimilar EA standards which can be considered by future researchers.

Another stage for future research, after getting proper measurement on each perspective (variables), is the indexed method. Indexing the perspective can show the local content of what has been done by firms.

Future research can also examine regulator categories for measuring performance of the corporations. The categories of the regulator can be used to measure the EA practices accomplished by indexing on each category as it is commonly done in quantitative method.

### **6.5 Limitations of Study**

Despite the fact that regulator categories can be standard benchmark of EA practices for valuing company performance, it is more applicable to Indonesia in particular. The findings show that the most influential stakeholder is the government as it has majority ownership. It implies the mirror effect on management of SOE's behavior that should be inserted in their preference to follow all regulations and government policy. The mirror effect on SOE's is related to accountability aspect from government as the regulator with majority ownership.

Furthermore, environmental issues are sensitive matter for Indonesia, and without international imposition the environmental problems are undisclosed substances (not be reported) by national firms, and even by multinational corporations that operate in Indonesia. It is a complicated condition for studying EA in Indonesia using primary data (interview, observation, taking photograph on plant sites, and video footage). Only SOE's seem to provide easy access to get primary data relating to the environment aspect than the private firms or multinational firms in Indonesia. Mainly, it is because SOEs better recognize social responsibility that compels them to provide information to public as necessitated by government law. As such, this study was conducted with limitations emanating from aforesaid conditions and peculiarities.

## 6.6 Publications

1. Submission to Accounting, Organization & Society (Elsevier Editorial System/EES), 6 August 2017.
2. Published to Journal of Economics & Financial Studies (JEFS), 5(3), 2017. Environmental accounting practices: a regulatory and internal management perspective. doi: 10.18533/jefs.v5i3.267.
3. Published to Archives of Business Research (ABR), 4(6), December 2016. Remuneration and management behavior evaluation: a critical review. doi:10.14738/abr.46.2512.



## REFERENCES

- Abd-Elsalam, O. H., & Weetman, P. (2003). Introducing International Accounting Standards to an emerging capital market: relative familiarity and language effect in Egypt. *Journal of International Accounting, Auditing and Taxation*, 12(1), 63–84. doi:10.1016/S1061-9518(03)00002-8.
- Adelopo, I. (2011). Voluntary disclosure practices amongst listed companies in Nigeria. *Advances in Accounting*, 27(2), 338–345. doi:10.1016/j.adiac.2011.08.009.
- Akhtaruddin, M., & Haron, H. (2010). Board ownership, audit committees' effectiveness, and corporate voluntary disclosures. *Asian Review of Accounting*, 18(3), 245–259. doi:10.1108/13217341011089649
- Alewine, H. C., & Stone, D. N. (2013). How does environmental accounting information influence attention and investment? *International Journal of Accounting & Information Management*, 21(1), 22–52.
- Alexander, D., & Jermakowicz, E. V. A. (2006). True and fair view of the principles / rules debate. *ABACUS*, 42(2), 132–164. doi:10.1111/j.1468-497.2006.00195.x.
- Almilia, L. S., & Wijayanto, D. (2007). Proceeding from The 1st Accounting Conference: *Pengaruh environmental performance dan environmental disclosure terhadap economic performance*. (7–9). Jakarta.
- Alrazi, B., Villiers, C. De, & Staden, C. J. Van. (2015). A comprehensive literature review on, and the construction of a framework for, environmental legitimacy,

- accountability and proactivity. *Journal of Cleaner Production*, 102, 44–57.  
doi:10.1016/j.jclepro.2015.05.022
- Ancelin-Bourguignon, A., & Zarlowski, O. S. P. (2013). Subjectivities and micro-processes of change in accounting practices: a case study. *Journal of Accounting & Organizational Change*, 9(2), 206–236. doi:10.1108/18325911311325960
- Andayani, & Riduwan, A. (2011). Proceeding from Simposium Nasional akuntansi XIV Aceh 2011: *Tanggungjawab lingkungan dan peran informasi biaya lingkungan dalam pengambilan keputusan manajemen: studi kualitatif*. (21–22). Aceh.
- Arbor, A. (2011). Greenwash : corporate environmental disclosure under threat of audit. *Journal of Economics & Management Strategy*, 20 (1), 3–41.
- Ariesanti, A. (2012). Proceeding from International Conference Green World and Business Technology (IC-GWBT)'12: *Environmental Accounting : An mandatory*. (331–338). Yogyakarta.
- Aulia, Z., S. (2011). Proceeding from Simposium Nasional akuntansi XIV Aceh '11: *Analisis Pengungkapan Triple Bottom Line Dan Faktor Yang Mempengaruhi; Lintas Negara Indonesia Dan Jepang*. ( 21–22). Aceh.
- Aussenegg, W., Inwinkl, P., & Schneider, G. T. (2008). Earnings management and local vs international accounting standards of european public firms. *SSRN Electronic Journal*, (c). doi:10.2139/ssrn.1310346.
- Ayudia Sokarina. (2011). Proceeding from Simposium Nasional akuntansi XIV Aceh '11: *Menggagas Dimensi Kinerja Perusahaan Berdasarkan Perspektif Political Economy of Accounting (PEA)*. (21–22). Aceh.

- Babalyan, L. (1990). *Earnings management by firms applying International Financial Reporting Standards: Implications for valuation*. Doctoral dissertation, University of Fribourg (Switzerland).
- Ball, A. (2005). Environmental accounting and change in UK local government. *Accounting, Auditing & Accountability Journal*, 18(3), 346–373. doi:10.1108/09513570510600738
- Barbier, E. B. (1989). The contribution of environmental and resource economics to an economics of sustainable development. *Development and Change*, 20(3), 429-459.
- Barbu, E. M., Dumontier, P., Feleagă, N., & Feleagă, L. (2011). Mandatory environmental disclosures by companies complying with IAS/IFRS: The case of France, Germany and the UK. Universite Pierre Mendes. Grenoble, France.
- Barth, M. E., Landsman, W. R., & Lang, M. H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, 46(3), 467-498.
- Batra, G. S., & Kaur, N. (1996). New vistas in reducing the conflicts between tourism and the environment: an environmental audit approach. *Managerial Auditing Journal*, 11(4), 3-10. doi:10.1108/02686909610119985.
- Bazerley, P., & Jackson, K. (2013). *Qualitative Data Analysis with Nvivo*. Los Angeles, CA: SAGE Publications Ltd.
- Beck, A. C., Campbell, D., & Shrives, P. J. (2010). Content analysis in environmental reporting research: Enrichment and rehearsal of the method in a British–German context. *The British Accounting Review*, 42(3), 207–222.  
doi:10.1016/j.bar.2010.05.002.

- Bedner, A. (2010). Consequences of decentralization: environmental impact assessment and water pollution control in Indonesia. *Law & Policy*, 32(1), 38–60.
- Belkoui, A.R. (2005). *Accounting Theory: Fifth Edition*. UK: Thomson.
- Benoit-moreau, F. (2011). Building brand equity with environmental communication : an empirical investigation in France. *EuroMed Journal of Business*, 6(1), 100–116. doi: 10.1108/14502191111130334.
- Benston, G. J., & Bromwich, M. (2006). Principles- versus rules-based accounting standards: The FASB’s standard setting strategy. *Abacus*, 42(2), 165–188, doi:10.1111/j.1468-4497.2006.00196.x
- Berg, B.L. (2000). *Qualitative research methods for the social sciences (4th)*. Boston, MA: Allyn and Bacon.
- Berger, P. G. (2011). Challenges and opportunities in disclosure research—A discussion of “the financial reporting environment: Review of the recent literature”. *Journal of Accounting and Economics*, 51(1-2), 204–218. doi:10.1016/j.jacceco.2011.01.001
- Berger, R. (2010). *Green growth, green profit (1st ed.)*. Basingstoke: Palgrave Macmillan. doi:10.1057/9780230303874
- Bertram, G., & Terry, S. (2008, April). *The carbon challenge, Response, Responsibility and the Emission Trading Scheme*. Sustainability Council of New Zealand. Retrieved from <http://www.geoffbertram.com/publications/>
- Bewley, K. (2005). The impact of financial reporting regulation on the market valuation of reported environmental liabilities: preliminary evidence from us and canadian public companies. *Journal of International Financial Management and Accounting*, 16(1), 1–48. doi:10.1111/j.1467-646X.2005.00110.x.

- Beyer, A., Cohen, D. A., Lys, T., & Walther, B. R. (2010). The financial reporting environment: review of the recent literature. USA.
- Bicalho, T., Richard, J., & Bessou, C. (2012). Limitations of LCA in environmental accounting for biofuels under RED. *Sustainability Accounting, Management and Policy Journal*, 3(2), 218–234. doi:10.1108/20408021211282322
- Biobele, S., & Paul, I. (2012). The Impact of Environmental Accounting and Reporting on Sustainable Development in Nigeria. *Research Journal of Finance and Accounting*, 3(7), 55–64.
- Blanco, E., Rey-Maqueira, J., & Lozano, J. (2009). The Economic Impacts of Voluntary Environmental performance of Firms: a Critical Review. *Journal of Economic Surveys*, 23(3), 462–502, doi:10.1111/j.1467-6419.2008.00569.x.
- Bommel, K. van. (2014). Towards a legitimate compromise?: An exploration of Integrated Reporting in the Netherlands. *Journal of Small Business and Enterprise Development* (Vol. 27). doi:10.1108/02656710210415703.
- Bowen, R. M., Rajgopal, S., & Venkatachalam, M. (2008). Accounting discretion, corporate governance, and firm performance. *Contemporary Accounting Research*, 25(2), 351–405. doi:10.1506/car.25.2.3
- Boyd, J. (1998). The benefits of improved environmental accounting : an economic framework to identify priorities the benefits of improved environmental accounting: an economic framework to identify priorities. Washington, DC: Resources for the future.
- Boyd, J. (2008). The benefits of improved environmental accounting: an economic framework to identify priorities. Discussion Paper 98-49.

- Bracci, E., & Maran, L. (2013). Environmental management and regulation: pitfalls of environmental accounting. *Management of Environmental Quality: An International Journal*, 24(4), 538–554. doi:10.1108/MEQ-04-2012-0027
- Bragg, S. M. (2004). *Accounting Best Practices* (3rd ed., pp. 1–407). Canada: John Wiley & Sons, Inc.
- Brammer, S., & Pavelin, S. (2004). Voluntary social disclosures by large UK companies. *Business Ethics: An European Review*, 13(2/3), 86–99.
- Brown, J., & Fraser, M. (2006). Approaches and perspectives in social and environmental accounting: an overview of the conceptual landscape. *Business Strategy and the Environment*, 1(15), 103–117. doi: 10.1002/bse.452
- Buchanan, A.H. and Levine, S.B. (1999). Wood-based building materials and atmospheric carbon emissions. *Environmental Science and Policy*, 2, 427-437.
- Burritt, R. L. (2012). Environmental performance accountability: planet, people, profits. *Accounting, Auditing & Accountability Journal*, 25(2), 370–405. doi:10.1108/09513571211198791
- Burritt, R. L., & Schaltegger, S. (2012). Measuring the (un-)sustainability of industrial biomass production and use. *Sustainability Accounting, Management and Policy Journal*, 3(2), 109–133. doi:10.1108/09564230910978511
- Burritt, R. L., Schaltegger, S., & Zvezdov, D. (2011). Carbon Management Accounting: Explaining Practice in Leading German Companies. *Australian Accounting Review*, 21(1), 80–98. doi:10.1111/j.1835-2561.2010.00121.x
- Byard, D., Li, Y., & Yu, Y. (2011). The Effect of mandatory IFRS adoption on financial analysts' information environment. *Journal of Accounting Research*, 49(1), 69–96. doi:10.1111/j.1475-679X.2010.00390.x

- Cabrera, L. (2008). Widespread Acceptance of IFRS Continues. *The CPA Journal*, March. Retrieved from <http://www.nysscpa.org/cpajournal/2008/308/essentials/p.36.htm>
- Cagatay, S., & Mihci, H. (2006). Degree of environmental stringency and the impact on trade patterns. *Journal of Economic Studies*, 33(1), 30–51.
- Çalışkan, A. O. (2014). How accounting and accountants may contribute in sustainability? *Social Responsibility Journal*, 10(2), 246–267. doi:10.1108/SRJ-04-2012-0049.
- Callao, S., Jarne, J. I., & Láinez, J. a. (2007). Adoption of IFRS in Spain: effect on the comparability and relevance of financial reporting. *Journal of International Accounting, Auditing and Taxation*, 16(2), 148-178. doi:10.1016/j.intaccaudtax.2007.06.002.
- Campbell, D., & Beck, A. C. (2004). Answering allegations : the use of the corporate website for restorative ethical and social disclosure. *Business Ethics: A European Review*, 13(July), 100–116.
- Carmody, L., & Shaw, N. (2010). *Palm oil in asia*. (Rumi Morales, Ed.). Singapore: Responsible Research.
- Catasús, B. (2008). In search of accounting absence. *Critical Perspectives on Accounting*, 19(7), 1004–1019. doi:10.1016/j.cpa.2007.02.002.
- Cheng Chee Mun, E., Courtenay, S. M., & Rahman, A. R. (2011). Effects of prior voluntary disclosure on earnings announcements in an environment with low information and regulation. *Pacific-Basin Finance Journal*, 19(3), 308–329. doi:10.1016/j.pacfin.2010.12.004.

- Cho, C. H. (2007). Legitimation strategies used in response to environmental disaster: a French case study of total S.A.'s. Concordia University. Canada.
- Cho, C. H., Freedman, M., & Patten, D. M. (2009). Corporate disclosure of environmental capital expenditures: a test of alternative theories. "La place de la dimension européenne dans la Comptabilité Contrôle Audit.
- Ciasullo, M. V., & Troisi, O. (2012). Sustainable value creation in SMEs. A case study. *The TQM Journal*, 25(1), 1–19.
- Clarkson, P. M., Overell, M. B., & Chapple, L. (2011). Environmental reporting and its relation to corporate environmental performance. *ABACUS*, 47(1), 27–60. doi:10.1111/j.1467-6281.2011.00330.x.
- Coase, R. R. H. (1960). The problem of social cost. *Journal of Law and Economics*, 3(n), 1–44. doi:10.1086/466560.
- Comello, S. D., Lepech, M. D., Asce, M., & Schwegler, B. R. (2012). Project-level assessment of environmental impact: ecosystem services approach to sustainable management and development. *Journal of Management in Engineering*, 28(1), 5–13. doi:10.1061/(ASCE)ME.1943-5479.0000093.
- Cowan, S., & Deegan, C. (2011). Corporate disclosure reactions to Australia's first national emission reporting scheme. *Accounting & Finance*, 51(2), 409–436. doi:10.1111/j.1467-629X.2010.00361.x.
- Coxhead, I., & Jayasuriya, S. (2010). China, India and the Commodity Boom: Economic and Environmental Implications for. *The World Economy*, 1(1), 525–540. doi:10.1111/j.1467-9701.2009.01232.x.
- Cua, F. C., & Garrett, T. C. (2009). Understanding ontology and epistemology in information system research. In K. Klinger, J. Neidig, & J. Snaveley (Eds.),



- Information Systems Research Methods, Epistemology, and Applications* (35–46).  
New York: Information Science Reference. Retrieved from <http://www.igi-global.com>
- Curkovic, S., & Sroufe, R. (2007). Total Quality Environmental Management and Total Cost Assessment: An exploratory study. *International Journal of Production Economics*, 105(2), 560–579. doi:10.1016/j.ijpe.2006.04.021
- Deegan, C., Rankin, M., & Tobin, J. (2002). An examination of the corporate social and environmental disclosures of BHP from 1983-1997. *Accounting Auditing Accountability Journal*, 15(3), 312–343. doi:10.1108/09513570210435861
- Delmas, M. A., & Toffel, M. W. (2003). Proceeding from Institutional Pressure And Environmental Management Practices: Institutional pressure and environmental management practices. Presented at the 11. (1–28). San Fransisco.
- Department for Environment, Food and Rural Affairs.(2008). Waste wood as a biomass fuel, market information report, waste infrastructure delivery programme. Department for Environment, Food and Rural Affairs. London, UK. Retrieved from <http://www.defra.gov.uk> .
- Ditz, D. W., Ranganathan, J., & Banks, R. D. (1995). Green ledgers: case studies in corporate environmental accounting. World Resources Institute.
- Djajadikerta, H. G., & Trireksani, T. (2012). Corporate social and environmental disclosure by Indonesian listed companies on their corporate web sites. *Journal of Applied Accounting Research*, 13(1), 21–36. doi:10.1108/09675421211231899
- Donovan, G. O. (2002). Environmental disclosures in the annual report. *Accounting, Auditing & Accountability Journal*, 15(3), 344–371.  
doi:10.1108/09513570210435870

- Duff, S. (2008). *Remembering Piper Alpha disaster*. Retrieved from [http://news.bbc.co.uk/2/hi/uk\\_news/scotland/7438774.stm](http://news.bbc.co.uk/2/hi/uk_news/scotland/7438774.stm)
- Dunk, A. S. (1999). An examination of the role of financial investment appraisal methods in the context of international environmental regulation. The Montreal Protocol and CFC substitutes in domestic refrigeration. *Accounting, Auditing & Accountability & Journal*, 12(2), 188-205.
- Durand, R., & Tarca, A. (2008). *An investigation of the usefulness of accounting data in extractive industry operations*. Retrieved from <http://www.business.uwa.edu.au>.
- Edgley, C. R., Jones, M. J., & Solomon, J. F. (2009). Stakeholder inclusivity in social and environmental report assurance. *Accounting, Auditing & Accountability Journal*, 23(4), 532–557. doi:10.1108/09513571011041615.
- Elijido-Ten, E. (2004). Voluntary environmental disclosures of Malaysian listed companies: an application of stakeholder theory. Swinburne University of Technology.
- Elijido-Ten, E., Kloot, L., & Clarkson, P. (2010). Extending the application of stakeholder influence strategies to environmental disclosures: An exploratory study from a developing country. *Accounting, Auditing & Accountability Journal*, 23(8), 1032–1059. doi:10.1108/09513571011092547
- Elsayed, M. O., & Hoqueeb, Z. (2010). Perceived international environmental factors and corporate voluntary disclosure practices: An empirical study. *The British Accounting Review*, 42(1), 17–35. doi:10.1016/j.bar.2010.01.001

- Eng, L. L., & Mak, Y. T. (2003). Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy*, 22(4), 325–345. doi:10.1016/S0278-4254(03)00037-1
- Eng, L. L., & Mak, Y. T. (2003). Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy*, 22(4), 325–345. doi:10.1016/S0278-4254(03)00037-1.
- EPA of USA. (1995). *An introduction to Environmental Accounting as a business management tool: key concepts and terms*. Washington, DC.
- Ernst and Young Group. (2011). *International GAAP 2011 under International Financial Reporting Standards*. New York, NY: Wiley.
- Esty, D. C. (1999). Toward optimal environmental governance. *Law Review*, 74, 1–81.
- Eugénio, T. C. P. (2009). *Social and Environmental Accounting: a case study on a Portuguese cement company* (Doctoral dissertation, Instituto Superior de Ciências do Trabalho e da Empresa).
- Evans, P. (1996). Management control systems accounting for the environment. *Management Accounting*, 74(9), 48–49.
- Evans, P. (1996). Management control systems accounting for the environment. *Management Accounting*, 74(9), 48–49.
- Everett, J. (2004). Exploring (false) dualisms for environmental accounting praxis. *Critical Perspectives on Accounting*, 15(8), 1061–1084. doi:10.1016/S1045-2354(02)00207-1
- Farouk, S., Cherian, J., & Jacob, J. (2012). Green accounting and management for sustainable manufacturing in developing countries. *International Journal of Business and Management*, 7(20), 36–44. doi:10.5539/ijbm.v7n20p36

- Fernando, Y., Wah, W. X., & Shahrudin, M. S. (2016). Does a firm's innovation category matter in practising eco-innovation? Evidence from the lens of Malaysia companies practicing green technology. *Journal of Manufacturing Technology Management*, 27(2), 208–233. doi:10.1108/02656710210415703
- Field, B. C., & Field, M. K. (2006). *Environmental Economics on introduction*. Singapore: McGraw-Hill.
- Finch, N. (2009). Towards an understanding of cultural influence on the international practice of accounting. *Journal of International Business and Cultural Studies*, 1(1), 1-6.
- Firoz, C. M., & Ansari, A. A. (2010). Environmental accounting and International Financial Reporting Standards (IFRS). *International Journal of Business and Management*, 5(10), 105–112.
- Fleischman, R. K., & Schuele, K. (2006). Green accounting: A primer. *Journal of Accounting Education*, 24(1), 35–66. doi:10.1016/j.jaccedu.2006.04.001.
- Friedman, M. (1970). The social responsibility of business is to increase its profits. *The New York Times Magazine*, (32), September 13. doi:10.1007/978-3-540-70818-6\_14
- Gallhofer, S., Gibson, K., Haslam, J., McNicholas, P., & Takiari, B. (2000). Developing environmental accounting: insights from indigenous cultures. *Accounting, Auditing & Accountability Journal*, 13(3), 381–409.
- García-Murillo, M. (2005). Regulatory responses to convergence: experiences from four countries. *The Journal of Policy, Regulation and Strategy for Telecommunications, Information and Media*, 7(1), 20. doi:10.1108/14636690510578252

- Gelb, D., Holtzman, M. P., & Mest, D. (2008). International operations and voluntary disclosures by U.S.-based multinational corporations. *Advances in Accounting*, 24(2), 243–249. doi:10.1016/j.adiac.2008.09.002
- Gernon, H., & Wallace, R.S.O. (1995). International accounting research: a review of its ecology, contenting theories and methodologies. *Journal of Accounting Literature*, 14(1), 54-106.
- Gifford, J, Nielsen P, Hall P Nicholas, I, Robertson K, Duignan A, Li J, & Ford-Robertson J. (2002). Proceeding from the Forest Industry Engineering Association conference Wood Wastes 2002, Residues to revenues: The wood waste resource: assessing the technical, economic and market potential for energy production in New Zealand. Auckland.
- Gils, M. Van, Vissers, G., & Wit, J. De. (2009). Selecting the right channel for knowledge transfer between industry and science: Consider the R&D-activity. *European Journal of Innovation Management*, 12(4), 492–511.
- Global Reporting Initiative. (2011). G4 Sustainability Reporting Guidelines. Amsterdam, NL: GRI.
- Godfrey, P. C. (2005). Philanthropy and shareholder wealth : the relationship between corporate a risk management perspective. *Academy of Management Review*, 30(4), 777–798. doi:10.5465/AMR.2005.18378878
- Gonedes, N. J., & Dopuch, N. (1979). Economic analyses and accounting techniques: perspective and proposals. *Journal of Accounting Research*, 17(2), 384–410.
- Goodin, R. E. (2003). Democratic accountability: the third sector and all. *working paper*. Canberra, AU: The Hauser Center for Nonprofit Organizations The John F. Kennedy School of Government.

- Govindarajulu, N., & Daily, B. F. (2004). Motivating employees for environmental improvement. *Industrial Management & Data Systems*, 104(4), 364–372. doi:10.1108/02635570410530775
- Gray, R. (2000). Current developments and trends in social and environmental auditing, reporting and attestation: a review and comment. *International Journal of Auditing*, 4(July), 247–268.
- Gray, R., Javad, M., Power, D. M., & Sinclair, C. D. (2001). Social and environmental disclosure and corporate characteristics: a research note and extension. *Journal of Business Finance & Accounting*, 28(3–4), 327–356. doi:10.1111/1468-5957.00376
- Gray, S. (1995). On cultural perspectives the measurement of corporate success. *European Management Journal*, 13(3), 269–275.
- Gray, S. J. (1983). Towards a theory of cultural influence on the development of accounting systems internationally. *ABACUS*, 24(1), 1–15.
- Gumilang, H., Mukhopadhyay, K., & Thomassin, P. J. (2011). Economic and environmental impacts of trade liberalization: The case of Indonesia. *Economic Modelling*, 28(3), 1030–1041.
- Gunarathne, N., & Lee, K.-H. (2015). Environmental Management Accounting (EMA) for environmental management and organizational change: An eco-control approach. *Journal of Accounting & Organizational Change*, 11(3), 362–383. doi:10.1108/JAOC-10-2013-0078
- Gunawan, J. (2015). Corporate social disclosures in Indonesia: stakeholders' influence and motivation. *Social Responsibility Journal*, 11(3), 535–552. doi:10.1108/SRJ-04-2014-0048

- Guo, Z., Ai, N., & Polenske, K. R. (2008). Evaluating environmental and economic benefits of yellow dust storm-related policies in north China. *International Journal of Sustainable Development and World Ecology*, 5, 457.
- Gupta, B. V. K. (n.d.). Environmental accounting and reporting -an analysis of Indian corporate sector 2. *Environmental Accounting and Reporting*,1(1), 1-19.
- Gurtvitsh, N., & Sidorova, I. (2012). Environmental and Social Accounting Disclosures as a Vital Component of Sustainability Reporting Integrated into Annual Reports of the Baltic Companies for the Years 2007-2011: Based on Companies Listed on NASDAQ OMX Baltic Main List as of June 2012 Natal. Estonia: Estonian-Swiss Cooperation Programme. doi:10.5176/2010-4804.
- Guthrie, J., & Abeysekera, I. (2006). Content analysis of social, environmental reporting: what is new? *Journal of Human Resource Costing & Accounting*, 10(2), 114–126.
- Guzma, B. A. (2010). The influence of the Portuguese environmental accounting standard on the environmental disclosures in the annual reports of large companies operating in Portugal A first view (2002-2004). *Management of Environmental Quality: An International Journal*, 21(4), 414–435.
- Hackston, D., & Milne, M. J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing & Accountability Journal*, 9(1), 77-108.
- Hail, L., Leuz, C., & Wysocki, P. (2009). Global accounting convergence and the potential adoption of ifrs by the united states : an analysis of economic and policy factors. *SSRN Electronic Journal*, (February), 1–104. Retrieved from SSRN: <http://ssrn.com/abstract=1357331> or doi:10.2139/ssrn.1357331

- Hall and Gifford, (2007). *Bioenergy options for New Zealand*. Retrieved from <http://www.scionresearch.com/bioenergy+report.aspx>.
- Harto, Y. B. S. (2010). Tantangan penerapan konvergensi IFRS bagi penyajian dan pemeriksaan laporan keuangan. Jakarta: Arghajata Alliance
- Hecht, J. E. (1999). Environmental accounting where we are now, where we are heading. *Resources*, (135), 14–17.
- Hinds, J., & Sparks, P. (2008). Engaging with the natural environment: the role of affective connection and identity. *Journal of Environmental Psychology*, 28(2), 109–120. doi:10.1016/j.jenvp.2007.11.001
- Ho, S. S., & Shun Wong, K. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation*, 10(2), 139–156.
- Hoepner, A. G. F. (2010). Portfolio diversification and environmental, social or governance criteria : Must responsible investments really be poorly diversified. Retrieved from <http://ssrn.com/abstract=1599334>.
- Hofstede, G. (2001). *Culture's consequences: comparing values, behaviors, institutions and organizations across nations*. (2nd edition). Thousand Oaks, CA: Sage.
- Hofstede, G. (2009). American culture and the 2008 financial crisis. *European Business Review*, 21(4): 307-312.
- Holbrook, M.B. (1996). Customer value: a framework for analysis and research. *Advances in Consumer Research*, 23(1), 138-42.
- Horton, J., Serafeim, G., & Serafeim, I. (2010). *Does Mandatory IFRS Adoption Improve the Information Environment ?* Working paper. Cambridge, MA: Harvard Business School



- Husser, J., Irgo, M. I. V, Andre, J., & Barbat, G. (2012). CSR and sustainable development : are the concepts compatible ? *Management of Environmental Quality: An International Journal*, 23(6), 658–672. doi:10.1108/14777831211262936.
- Ibrahim, M. H., & Syed Aun R. Rizvi. (2015). International Journal of Climate Change Strategies and Management. *International Journal of Climate Change Strategies and Management*, 7(4), 460–475.
- Ienciu. (2012). The Contribution of The Environmental Management, *Studia Ubb, Oeconomica* 57(2), 58–60.
- Indonesian Accountant Board (*Ikatan Akuntan Indonesia*). (2015). Statement of Financial Accounting Standard edition 2015 (*Pernyataan Standar Akuntansi Keuangan edisi 2015*). Jakarta: Salemba Empat.
- IPCC. (2007). Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Retrieved from [https://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4\\_wg3\\_full\\_report.pdf](https://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4_wg3_full_report.pdf)
- IPCC.(2008). Technical Paper on Climate Change and Water. Released Wednesday 9th April 2008. Retrieved from <https://www.ipcc.ch/meetings/session28/doc13.pdf>
- Janamrung, B., & P. (2015). The association between corporate social responsibility index and performance of firms in industrial products and resources industries: empirical evidence from Thailand. *Social Responsibility Journal*, 11(4), 893–903. doi:10.1108/SRJ-11-2013-0141

- Jennifer Ho, L.-C., & Taylor, M. E. (2007). An Empirical Analysis of Triple Bottom-Line Reporting and its Determinants: Evidence from the United States and Japan. *Journal of International Financial Management & Accounting*, 18(2), 123–150.
- Jerrett, M., Rey, S. J., Dufournaud, C., & Jones, D. (2003). Accounting for the environmental “bottom line” along the U.S.-Mexico border. *Annals of the Association of American Geographers*, 93(1), 67–88. doi:10.1111/1467-8306.93106
- Jöbstl, H. A., & Hogg, N. J. (2005). Proceeding Publication from Chair for Business Economics of the Forest Sector. *Series of the Division for Accounting and Marketing* (12, p. 1–95). Vienna.
- Jöbstl, H. A., & N.Hogg, J. (2005). Proceeding from Chair for Business Economics of the Forest Sector, *Publication Series of the Division for Accounting and Marketing* (12), 1-95. University of Natural Resources and Applied Life Sciences, Vienna.
- Jöbstl, H. A., & N.Hogg, J. (2005). Publication Series of the Division for Accounting and Marketing. In *Chair for Business Economics of the Forest Sector*, (12), 1–95.
- Johansson, G., & Winroth, M. (2010). Introducing environmental concern in manufacturing strategies: Implications for the decision criteria. *Management Research Review*, 33(9), 877–899. doi:10.1108/01409171011070305.
- Jones, M. J. (2003). Accounting for biodiversity: operationalising environmental accounting. *Accounting, Auditing & Accountability Journal*, 16(5), 762–789. doi:10.1108/09513570310505961.
- Jones, M. J., & Solomon, J. F. (2013). Problematising Accounting for biodiversity. *Accounting, Auditing & Accountability Journal*, (Special Issue), 1–21.

- Jorgensen, B. N., & Soderstrom, N. S. (2006). Environmental disclosure within legal and accounting contexts : an international perspective. New York, NY.
- Joshi, S., Krishnan, R., & Lave, L. (2001). Estimating the Hidden Costs of Environmental Regulation. *The Accounting Review*, 76(2), 171–198.
- Joshi, S., Krishnan, R., & Lave, L. (2002). *Estimating the hidden costs of environmental regulation*. Working paper, Michigan State University (US).
- Jun Lin, Z., & Chen, F. (2005). Value relevance of international accounting standards harmonization: Evidence from A- and B-share markets in China. *Journal of International Accounting, Auditing and Taxation*, 14(2), 79–103. doi:10.1016/j.intaccaudtax.2005.08.001
- Kagan, R. A., Thornton, D., & Gunningham, N. (2003). Explaining corporate environmental performance: how does regulation matter? *Law & Society Review*, 37(1), 51–90.
- Kallamu, B. S., & Mohd Saat, N. A. (2015). Asian Review of Accounting Article information. *Asian Review of Accounting*, 23(3), 206–231. doi:10.1108/ARA-04-2012-0017
- Kang, G. G., & Lin, J. W. (2011). Effects of the Type of Accounting Standards and Motivation on Financial Reporting Decision. *Journal of Accounting-Business & Management*, 18(2), 84–104.
- Kang, H. H., & Gray, S. J. (2011). Reporting intangible assets: Voluntary disclosure practices of top emerging market companies. *The International Journal of Accounting*, 46(4), 402–423. doi:10.1016/j.intacc.2011.09.007

- Kent, P., & Stewart, J. (2008). Corporate governance and disclosures on the transition to International Financial Reporting Standards. *Accounting and Finance*, 48(April 2007), 649–671. doi:10.1111/j.1467-629x.2007.00257.x.
- Keuning, S. J. (1998). Interaction between national accounts and socio-economic policy. *Review of Income and Wealth*, 44(3), 345–359.
- Kieso, D. E., Weygandt, J.J. & Warfield, T.D. (2001). *Intermediate Accounting: 10<sup>th</sup>*, New York, NY: Prentice Hall
- Kolk, A. (2005). Environmental reporting by multinationals from the triad: convergence or divergence. *Management International Review*, 45(1), 145–166.
- Kothari, S. P., Ramanna, K., & Skinner, D. J. (2010). Implications for GAAP from an analysis of positive research in accounting. *Journal of Accounting and Economics*, 50(2–3), 246–286. doi:10.1016/j.jacceco.2010.09.003
- Kozlowski, A., Searcy, C., & Bardecki, M. (2015). Corporate sustainability reporting in the apparel industry: An analysis of indicators disclosed. *International Journal of Productivity and Performance Management*, 64(3), 377–397. doi: 10.1108/174711111111114558
- Krippendorff, K. (1989). Content Analysis. In E. Barnouw, G. Gerbner, W. Schramm, T. Worth, & L. Gross (Eds.), *International Encyclopedia of Communications* (1st ed., pp. 402–407). New York: Oxford University Press.
- Krippendorff, K. (2011). Agreement and information in the reliability of coding. *Communication Methods and Measures*, 5(2), 93–112. doi 10.1080/19312458.2011.568376
- Krozer, Y. (2008). Life cycle costing for innovations in product chains. *Journal of Cleaner Production*, 16(3), 310–321. doi:10.1016/j.jclepro.2006.07.040

- Kuzel, A.J. (1992). Sampling in qualitative inquiry. In Cabtree, B.F. and Miller, W.L. (Eds), *Doing Qualitative Research*, Vol. 3. Newbury Park, CA: Sage Publications,
- Lange, G.M. (2003). Policy applications of environmental. In *Environmental Economic Series* (1–74). Washington: The World Bank Environment Department.
- Laughlin, R. (1999). Critical accounting : nature , progress and prognosis accounting. *Accounting, Auditing and Accountability Journal*, 12(1), 73–78.
- Laux, C., & Leuz, C. (2009). The crisis of fair-value accounting: making sense of the recent debate. *Accounting, Organizations and Society*, 34(6-7), 826-834. doi: 10.1016/j.aos.2009.04.003
- Lawn, P. (2006).A Stock-Take of Green National Accounting Initiatives. *Social Indicators Research*, 80(2), 427–460. doi:10.1007/s11205-006-0003-1
- Lee, K. (2011). Motivations, barriers, and incentives for adopting environmental management (cost) accounting and related guidelines: a study of the republic of korea\*, *Corporate Social Responsibility and Environmental Management*, 49(18), 39–49. doi: 10.1002/csr.239
- Liempd, D. Van, & Busch, J. (2013). Biodiversity reporting in Denmark. *Accounting, Auditing & Accountability Journal*, 26(5), 833–872.
- Lindrianasari, & Adriyanto, W. (2010). Manager ’ s perception of the importance of en- vironmental accounting and its effect on the quality of corporate environmental account- ing disclosures : case from Indonesia. *Issues in Social and Environmental Accounting*, 4(1), 74–86.
- Lodrigan, M.T., Lewenson, B. S. (2004). *Reflective decision making*. London: Jones and Bartlett Publishers.

- Lopes, P. T., & Rodrigues, L. L. (2007). Accounting for financial instruments: An analysis of the determinants of disclosure in the Portuguese stock exchange. *The International Journal of Accounting*, 42(1), 25–56.
- Love, V. J., & Eickemeyer, J. H. (2009). IFRS and accountants' liability. *The CPA Journal*, (April), 54–59.
- Lungu, C. I., Caraiani, C., Dascălu, C., & Gușe, R. G. (2011). Exploratory study on social and environmental reporting. *Journal of Accounting and Management Information Systems*, 10(4), 459–478.
- Lyon, T. P., & Maxwell, J. W. (2011). Greenwash: corporate environmental disclosure under threat of audit. *Journal of Economics & Management Strategy*, 20(1), 3–41.
- Machado, A., Católica, P. U., Lima, F. G., Paulo, U. D. S., Preto, R., Carlos, A., Franca, C. U. De, et al. (2011). Carbon credit storage: a study of how to measure and account posting. *Review of business research*, 11(1), 126–134.
- MacIntyre, A. (2007). *After virtue: a study in moral theory* (3th ed.). Notre Dame, Indiana: University of Notre Dame Press.
- Magness, V. (2006). Strategic posture, financial performance and environmental disclosure: An empirical test of legitimacy theory. *Accounting, Auditing & Accountability Journal*, 19(4), 540–563. doi:10.1108/09564230910978511
- Magness, V. (2008). The impact of a change in regulation on environmental disclosure: SAB92 and the US chemical industry. *Issues in Social and Environmental Accounting*, 2(1), 61-88. doi: 10.1108/09513570610679128
- Mahadeo, J. D., Oogarah-Hanuman, V., & Soobaroyen, T. (2011). A Longitudinal Study of Corporate Social Disclosures in a Developing Economy. *Journal of Business Ethics*, 104(4), 545–558. doi:10.1007/s10551-011-0929-3.

- Maimaran, M. M. (2011). Environmental Accounting. *SSRN Electronic Journal*, 22-23. doi:10.2139/ssrn.1927567.
- Maness, T. C. (2009). Forest Management and Climate Change Mitigation: Good Policy Requires Careful, (May).
- Margerum, R. D. (2011). Environment. In *Beyond consensus: Improving Collaborative Planning and Management* (pp. 663–668). Cambridge, MA: MIT Press.
- Markandya, A., & Tabora, M. (2005). *Green Accounting in Europe*. (C. Carraro, K. J. Arrow, W. J. Baumol, P. Dasgupta, K.-G. Maler, I. Musu, & H. Tulkens, Eds.) (2nd ed., pp. 1–530). Cheltenham, UK: Edward Elgar Publishing, Inc.
- Marra, A., Mazzola, P., & Prencipe, A. (2011). Board Monitoring and Earnings Management Pre- and Post-IFRS. *The International Journal of Accounting*, 46(2), 205–230. doi:10.1016/j.intacc.2011.04.007
- Marra, A., Mazzola, P., & Prencipe, A. (2011). Board Monitoring and Earnings Management Pre- and Post-IFRS. *The International Journal of Accounting*, 46(2), 205–230.
- Martinez, C., Marte, R., & Roxas, B. (2015). Explaining the environmentally-sustainable consumer behavior: a social capital perspective. *Social Responsibility Journal*, 11(4), 658–676. doi:10.1108/SRJ-02-2014-0019.
- Martinez, F. (2012). The syncretism of environmental and social responsibility with business economic performance. *Management of Environmental Quality: An International Journal*, 23(6), 597–614.
- McCarthy, J. F. (2000). The Changing Regime : Forest Property and Reformasi in Indonesia. *Development and Change*, 31, 91–129.

- McCarthy, J. F., & Zen, Z. (2010). Regulating the oil palm boom: assessing the effectiveness of environmental governance approaches to agro-industrial pollution. *Journal Compilation Baldy Center for Law and Social Policy*, 32(1), 153–179.
- McGuigan, J. R., Moyer, R. C., & Harris, F. H. deB. (2008). *Managerial economics: applications, strategy, and tactics* (12th ed.). Ohio, USA: South-Western Cengage Learning.
- Medley P. 1997. Environmental accounting – what does it mean to professional accountants? *Accounting, Auditing, and Accountability Journal* 10(4): 594–600.
- Meek, G.K. and SM. Saudagaran.(1990). A survey of research on financial reporting in a transnational context. *Journal of Accounting Literature* 9: 145-182.
- Merdekawati, I., & Arsjah, R. J. (2011). Proceeding from Conference in Fakultas Ekonomi Universitas Syiah Kuala Banda Aceh , 21-22 Juli '11: *Timeliness of financial reporting analysis: an empirical study in indonesia stock exchange*. (21–22). Aceh.
- Merriam, S. B. (1998). *Case studies as qualitative research*. Qualitative research and case study applications in education. San Fransisco, CA: Jossey-Bass Inc.
- Miles, M.B. and Huberman, A.M. (1994). *Qualitative data analysis: an expanded sourcebook*. Thousand Oaks, CA: Sage Publications.
- Ministry of the Environment Japan. (2005). *Environmental Accounting Guidelines*. Japan: MOE.
- Mobus, J. L. (2005). Mandatory environmental disclosures in a legitimacy theory context. *Accounting Auditing Accountability Journal*, 18(4), 492–517.  
doi:10.1108/09513570510609333



- Mobus, J. L. (2005). Mandatory environmental disclosures in a legitimacy theory context. *Accounting Auditing Accountability Journal*, 18(4), 492–517.
- Mohd Said, R., Sulaiman, M., & Nazli Nik Ahmad, N. (2014). Environmental information usefulness to stakeholders: empirical evidence from Malaysia. *Social Responsibility Journal*, 10(2), 348–363. doi:10.1108/SRJ-10-2012-0131
- Monteiro, S. M. da S., & Aibar-Guzman, B. (2010). Organizational and accounting change within the context of the environmental agenda: Evidence from Portugal. *Journal of Accounting & Organizational Change*, 6(4), 404–435. doi:10.1108/18325911011091800
- Mook, L. I., & Quarter, J. (2006). Accounting for the social economy: The socioeconomic impact statement. *Annals of Public and Cooperative Economics*, 77(2), 247–269.
- Mook, L. I. (2007). Social and environmental accounting: the expanded value added. PhD Dissertation. Library and Archives Canada, Canada.
- Murdoch, B. (1986). The information content of FAS 33 Return on Equity. *The Accounting Review*, 61(1), 273-387.
- Niskanen, J., & Nieminen, T. (2001). The objectivity of corporate environmental reporting : a study of Finnish Listed Firms' Environmental Disclosures. *Business Ethics: A European Review*, 10(February), 29–37.
- Nn. (2004). Conversion to International Financial Reporting Standards and Revised Accounting Policies. (December), 1-24.
- Nuraini, E. (2010). The influence of environmental performance and environmental disclosure to economic performance - study on listed companies in Indonesia (*Pengaruh environmental performance dan environmental disclosure terhadap*

*economic performance - Studi pada Perusahaan yang Terdaftar di Bursa Efek Indonesia*). Disertation Semarang, Indonesia: Universitas Diponegoro.

O'Dwyer, B. (2000). The legitimacy of accountants' participation in social and ethical accounting, auditing and reporting. *Business Ethics: A European Review*, 10(1), 27–39.

Omran, M. A., & El-Galfy, A. M. (2014). Theoretical perspectives on corporate disclosure: a critical evaluation and literature survey. *Asian Review of Accounting*, 22(3), 257–286. doi:10.1108/ARA-04-2012-0017.

Organisation for Economic Co-operation and Development. (2007). Progress in modernising environmental regulation and compliance assurance in Eastern Europe, Caucasus, and Central Asia. Brussels.

Othman, R., & Ameer, R. (2009). Corporate social and environmental reporting: Where are we heading? A survey of the literature. *International Journal of Disclosure and Governance*, 6(4), 298–320. doi:10.1057/jdg.2009.7

Pappas, S. (2011) *7 most dangerous places on the earth*. Retrieved from <http://www.livescience.com/30602-7-most-dangerous-places-earth-natural-disasters.html>.

Patton, M. (1990), *Qualitative Evaluation and Research Methods*. Newbury Park, CA: Sage Publications,

Paz-Vega, R. (2008). Corporate social responsibility, action, and performance in international settings : a critical realist perspective. Dissertation Presented to the Faculty of the Graduate School of Business and Leadership of the Instituto Tecnológico y.

- Peters, G. F., & Romi, A. M. (2011). Discretionary compliance with mandatory environmental disclosures : evidence from SEC filings. Unpublished working paper.
- Pickett-Baker, J., & Ozaki, R. (2008). Pro-environmental products: marketing influence on consumer purchase decision. *Journal of Consumer Marketing*, 25(5), 281–293.
- Porter, M.E. and Kramer, M. (2006). Strategy and society: the link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84(12), 78–92.
- Powell.W.W.,& DiMaggio, P.J. (1991). The New Institutionalism in Organizational Analysis. Chicago IL: University of Chicago Press.
- Prabowo, M. A. (2011). Proceeding from Simposium Nasional akuntansi XIV Aceh '11: *Pengaruh corporate social responsibility terhadap kinerja keuangan perusahaan*. (21–22). Aceh.
- Previts, G.J. (2003). Research in accounting regulation Volumes 1–15, Supplement 1: 10th Anniversary Special. Elsevier Science.
- Prorokowski, L. (2016). Environmental risk index for financial services firms. *Qualitative Research in Financial Markets*, 8(1), 16–44. doi:10.1108/QRFM-04-2015-0018
- Public Sector Accounting Board.(2009). Liability for remediation and mitigation of contaminated sites.
- Qian, W., Burritt, R., & Chen, J. (2015). The potential for environmental management accounting development in China. *Journal of Accounting & Organizational Change*, 11(3), 406–428. doi:10.1108/JAOC-11-2013-0092

- Qian, W., Burritt, R., & Monroe, G. (2011). Environmental management accounting in local government: A case of waste management. *Accounting, Auditing & Accountability Journal*, 24(1), 93–128. doi:10.1108/09513571111098072
- Radermacher, W. (1999). Indicators, Green Accounting and Environment Statistics: Information Requirements for Sustainable Development. *International Statistical Review / Revue Internationale de Statistique*, 67(3), 339.
- Raska, D., & Shaw, D. (2012). When is going green good for company image? *Management Research Review*, 35(3/4), 326–347.  
doi:10.1108/01409171211210190.
- Ribeiro, V. P. L., & Aibar-Guzman, C. (2010). Determinants of environmental accounting practices in local entities: evidence from Portugal. *Social Responsibility Journal*, 6(3), 404–419. doi:10.1108/17471111011064771
- Rintamaki, T., Kanto, A., Kuusela, H., & Spence, M. T. (2006). Has the harmonisation of accounting practices improved? Evidence from South Asia. *International Journal of Retail & Distribution Management*, 34(1), 6–24.  
doi:10.1108/02656710210415703
- Roxas, B., & Chadee, D. (2012). Environmental sustainability orientation and financial resources of small manufacturing firms in the Philippines. *Social Responsibility Journal*, 8(2), 208–226. doi:10.1108/17471111211234842
- Roy, K. C., & Tisdell, C. A. (1999). Conservation and prudent management are the key to the preservation of the environment: The case of water resources, and the Indian situation. *International Journal of Social Economics*, 26(1/2/3), 274–289.

- Rugman, A. M., & Verbeke, A. (1998). Corporate Strategies and Environmental Regulations: An Organizing Framework. *Strategic Management Journal*, 19(4), 363–375.
- Rugman, A.M, Nguyen, Q.T.K, & Wei, Z. (2014). Chinese multinationals and public policy. *International Journal of Emerging Markets*, 9(2), 205–215.  
doi:10.1108/IJoEM-08-2013-0127
- Saedy, P., & Kazemipour, S. (2011). Effects of environmental risk, the company strategy and capital structure on performance of companies in the pharmaceutical industry in Iran Stock Exchange. *World Applied Sciences Journal*, 13(4), 962–967.
- Sahid. (2002). Akuntansi lingkungan: Good Governance. *Pemeriksa*, 86, 38-42. Jakarta.
- Saini, G. K. (2011). Implications of non-tariff measures on international business operations: a case of India's textiles and clothing firms. *Journal of Asia Business Studies*, 5(2), 211–231.
- Saka, C., & Oshika, T. (2014). Disclosure effects, carbon emission and corporate value. *Sustainability Accounting, Management and Policy Journal*, 5(1), 22–45.
- Sakumoto, N. (2004). Development of environmental law and legal reform in Indonesia. In *Reforming Laws and Institutions in Indonesia: An Assessment* (205–238). Jakarta.
- Saldana, J. (2009). An Introduction to Codes and Coding. In *The coding manual for qualitative researchers*. Los Angeles, CA: Sage.  
doi:10.1519/JSC.0b013e3181ddfd0a

- Santi, N. (2013). *Indonesia, Malaysia fight for palm oil in APEC*. Retrieved from <http://en.tempo.co/read/news/2013/10/09/074520471/Indonesia-Malaysia-Fight-for-Palm-Oil-in-APEC>
- Santos, F. M. (2012). A Positive Theory of Social Entrepreneurship. *Journal of Business Ethics*, 111(3), 335–351.
- Saudagaran, S. M., & Diga, J. G. (1998). Accounting harmonization in ASEAN: Benefits, models and policy issues. *Journal of International Accounting, Auditing and Taxation*, 7(1), 21–45.
- Sawani, A. (n.d.). The Changing Accounting Environment: International Accounting Standards and US implementation, 1-9.
- Schutte, D., & Buys, P. (2011). Cultural Considerations and the Implementation of IFRS: A Focus on Small and Medium Entities, 26(1), 19-27.
- Setiawan, B. B., & Hadi, S. P. (2007). Regional autonomy and local resource management in Indonesia. *Asia Pacific Viewpoint*, 48(1), 72–84.
- Setthasakko, W. (2010). Barriers to the development of environmental management accounting. *EuroMed Journal of Business*, 5(3), 315–331.
- Silverman, D. (2005). *Doing qualitative research*. London: Sage Publications. doi:10.1097/00006199-199507000-00011.
- Siregar, S. V., & Bachtiar, Y. (2010). Corporate social reporting: empirical evidence from Indonesia Stock Exchange. *International Journal of Islamic and Middle Eastern Finance and Management*, 3(3), 241–252.
- Sisaye, S., 2011. Ecological systems approaches to sustainability and organizational development: Emerging trends in environmental and social accounting reporting systems. *Leadership & Organization Development Journal*, 32(4), 379–398.

- Smith, M. (2003). *Reserach Methods in Accounting* (1–256). London: Sage Publications.
- Smith, M., Yahya, K., & Amiruddin, A. M. (2007). Environmental disclosure and performance reporting in Malaysia. *Asian Review of Accounting*, 15(2), 185–199. doi:10.1108/13217340710823387.
- Spencer, S. Y., & Adams, C. (2013). The mediating effects of the adoption of an environmental information system on top management's commitment and environmental performance. *Environmental Information System*, 4(1), 75–102. doi:10.1108/SA
- Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage. doi:10.1108/eb024859 MPJ-10-2011-0030.
- Stake, R. E. (2003). Case Studies. In *Strategies of Qualitative Inquiry* (pp. 134–164).
- Stake, R. E. (2010). *Qualitative research: studying how things work*. doi:10.1007/s13398-014-0173-7.2
- Spreckley, F. (1981). *Social audit: a management tool for co-operative working* (1–45). Leeds, UK: Beechwood College.
- Staunton, J. J. (2008). Multiple dimensions of accounting in the development of GAAP. *ABACUS*, 44(1), 109–135.
- Steve, B. (2011). *Securities and mergers & acquisitions csa issues guidance on environmental disclosure*. Vancouver, Toronto.
- Studies, B., Islamia, J. M., & Ansari, P. A. A. (2010). Environmental accounting and Intemational Financial Reporting Standards (IFRS). *International Journal of Business and Management*, 5(10), 105–112.

- Suaryana, A. (2011). Proceeding from Simposium Nasional akuntansi XIV Aceh '11: *Implementasi akuntansi sosial dan lingkungan*. (1–26). Aceh.
- Sudarijono.(2006). *National conference on environmental management green strategy the passport to facing global competition*. Retrieved from <http://www.menlh.go.id/national-conference-on-environmental-management-green-strategy-the-passport-to-facing-global-competition/>
- Suhardjanto, D., & Miranti, L. (2008). Indonesian index environmental reporting and corporate characteristics (*Indonesian environmental reporting index dan karakteristik perusahaan*). *Fakultas Ekonomi Universitas Sebelas Maret, Surakarta*,
- Sumartono, R.M., & Gatot, P. (1996). *Hukum Lingkungan Indonesia*. Sinar Grafika Jakarta.
- Suryono, H., & Prastiwi, A. (2011). Proceeding from Simposium Nasional Akuntansi XIV Aceh 2011: *Pengaruh karakteristik perusahaan dan corporate governance (cg) terhadap praktik pengungkapan sustainability report (sr) ( Studi Pada Perusahaan – Perusahaan yang Listed (Go-Public) di Bursa Efek Indonesia (BEI) Period 2007 - 2009 )*. (21–22). Aceh.
- Susilo Harto, Y. B. (2010). The challenge of IFRS convergence for financial reporting and auditing (*Tantangan Penerapan Konvergensi IFRS bagi Penyajian dan Pemeriksaan Laporan Keuangan*). Internal Document.
- Tate, W. L., Ellram, L. M., & J. Dooley, K. (2014). The impact of transaction costs and institutional pressure on supplier environmental practices. *International Journal of Physical Distribution & Logistics Management*, 44(5), 353–372. doi:10.1108/IJPDLM-12-2012-0356



- Tencati, A., Russo, A., & Quaglia, V. (2008). Unintended consequences of CSR: protectionism and collateral damage in global supply chains: the case of Vietnam. *Corporate Governance*, 8(4), 518–531. doi:10.1108/14720700810899248
- The IFRS Journey in Insurance: A Look Beyond the Accounting Changes. (n.d.).
- Tilling, M. V. (n.d.). Refinements to Legitimacy Theory in Social and Environmental Accounting Not One Theory but Two ( at least ). *Commerce Research*, 1–11.
- Trotman, K. T., Tan, H. C., & Ang, N. (2011). Fifty-year overview of judgment and decision-making research in accounting. *Accounting & Finance*, 51(1), 278–360. doi:10.1111/j.1467-629X.2010.00398.x.
- Tuan, L. T. (2014). Corporate governance and brand performance. *Management Research Review*, 37(1), 45–68. doi:10.1108/MRR-08-2012-0183.
- Turcsanyi, J., & Sisaye, S. (2013). Corporate social responsibility and its link to financial performance: Application to Johnson & Johnson, a pharmaceutical company. *Journal of Small Business and Enterprise Development*, 10(1), 4–18. doi:10.1108/20425941311313065.
- Tyrrall, D., Woodward, D., Rakhimbekova, A. (2007). The relevance of International Financial Reporting Standards to a developing country: Evidence from Kazakhstan. *International Journal of Accounting*, 42 (1), March, 82-110
- UNCTAD. (2004). *A manual for preparers and users of Eco-efficiency Indicators*. New York. New York and Geneva.
- Unerman, J. (2006). Methodological issues - reflections on quantification in corporate social reporting content analysis. *Accounting, Auditing & Accountability Journal*, 13(5), 667–681. doi:10.1108/09513570010353756

- United Nations. (2001). *Environmental Management Accounting Procedures and Principles*. Washington, DC.
- Utama, W. B. (2011). *The role of corporate governance in the social and environmental disclosure: an empirical study of state-owned enterprises (Peran corporate governance dalam pengungkapan sosial dan lingkungan: studi empiris badan usaha milik negara)*. Dissertasi. Universitas Sebelas Maret, Indonesia.
- Van Lier, L. (2005). Case study. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp. 195–208). Mahwah, NJ: Lawrence Erlbaum.
- Van Tenteloo, B., & Vanstraelen, A. (2005). Earnings management under German GAAP versus IFRS. *European Accounting Review*, 14(1), 155-180.
- Villiers, C. de, & Staden, C. J. van. (2011). Where firms choose to disclose voluntary environmental information. *Journal Accounting Public Policy*, 30, 504–525. doi:10.1016/j.jaccpubpol.2011.03.005.
- Walker, J. (2009). *Accounting in a Nutshell*. Oxford, UK: CIMA Publishing.
- Wang, Q., Gao, H., Wen, F., Macgill, I., Huang, J., Greenfield, D., Jorm, C. (2009). From command and control regulations to a business proposition: Creating a Chinese market for emissions trading. *International Journal of Energy Sector Management*, 3(1), 62–82. doi:10.1108/17506220910947854.
- Warr, P., & Yusuf, A. A. (2011). Reducing Indonesia ' s deforestation-based greenhouse gas emissions. *The Australian Journal of Agricultural and Resource Economics*, 55(June), 297–321. doi:10.1111/j.1467-8489.2011.00540.x.
- Warno, & Farida, D.N. (2016). Proceeding from Seminar Nasional dan The 3rd Call for Syariah Paper. *Environmental accounting: implementation in Islamic 'perspective (Study case on Jakarta Islamic Index listed companies/JII) (Akuntansi*

- lingkungan : kajian penerapan dalam perspektif islam (studi kasus pada perusahaan yang tercatat di Jakarta Islamic Index (JII)), p. 82-98. Surakarta, Indonesia.*
- Watson, M. (2004). Environmental auditing in the new Europe. *Managerial Auditing Journal*, 19(8/9), 1131–1139. doi:10.1108/02686900410562777.
- Watts, R.L, & Zimmerman, J. (1990). Positive Accounting Theory: A Ten Year Perspective. *The Accounting Review*. 65(1), 131–156.
- Webb, K. a., Cahan, S. F., & Sun, J. (2008). The effect of globalization and legal environment on voluntary disclosure. *The International Journal of Accounting*, 43(3), 219–245.
- White, A.L., & Savage, D.E. (1995). Budgeting for environmental projects: a survey. *Management Accounting*, 3, 48–54.
- Wideman, M. (2004). The Role of the Project Life Cycle (Life Span) in Project Management. Vancouver, BC. Retrieved from <http://www.maxwideman.com/papers/plc-models/plc-models.pdf>
- Wijayanti, F. T., & Prabowo, M. A. (2011). Proceeding from Simposium Nasional akuntansi XIV Aceh 2011 (*Pengaruh corporate social responsibility terhadap kinerja keuangan perusahaan*, 21–22). Aceh, Indonesia
- Wilkins, A. M. (2010). An Experimental Analysis of Accounting Judgments between US GAAP and IFRS Accountants, 1-8.
- Williams, B. (2015). The local government accountants' perspective on sustainability. *Sustainability Accounting, Management and Policy Journal*, 6(2), 267–287. doi:10.1108/SAMPJ-07-2014-0043

- Williams, B. (2015). The local government accountants' perspective on sustainability. *Sustainability Accounting, Management and Policy Journal*, 6(2), 267–287.
- Wiyantoro, L. S., Yulianto, A. S., Muchlis, M., & Ramdhani, D. (2011). Proceeding from Simposium Nasional Akuntansi XIV Aceh'11: *Persepsi auditor, akuntan pendidik dan akuntan manajemen tentang konsep dasar, pengukuran dan pengungkapan akuntansi lingkungan*. (21–22). Aceh.
- Wong, A. (2015). Corporate sustainability through non-financial risk management. *Corporate Governance*, 14(4), 575–586. doi:10.1108/CG-02-2013-0026.
- Wong, S. K.-S. (2012). The influence of green product competitiveness on the success of green product innovation: Empirical evidence from the Chinese electrical and electronics industry. *European Journal of Innovation Management*, 15(4), 468–490. doi:10.1108/14601061211272385.
- Wood, D., & Ross, D. G. (2006). Environmental social controls and capital investments : Australian evidence. *Accounting and Finance*, 46(September 2003), 677–695. doi : 10.1111/j.1467-629x.2006.00180.x.
- Yakhou, M., & Dorweiler, V. P. (2004). Environmental accounting: an essential component of business strategy. *Business Strategy and the Environment*, 13(2), 65–77. doi:10.1002/bse.395
- Yakoubov, M.Y, Teeger, & Duval D. B. (1998). A stochastic investment model for asset and liability management. Aon Consulting Limited.
- Yang, F., Dolar, B., & Mo, L. (2014). CEO Compensation and Firm Performance: Did the 2007-2008 Financial Crisis Matter? *Journal of Accounting and Finance*, 14(1), 137-146.

- Yin, R. K. (2002). *Case study research design and methods applied*. (Karen Wiley, Ed.) (3th ed.). Thousand Oak, CA: Sage.
- Yin, R. K. (2003). *Case study research: design and methods Volume Five*. In *Applied social research methods series* (p. 1–94). Thousand Oak, CA: Sage Publications.
- Yin, R. K. (2004). *Ontology Case Study*. Thousand Oak, CA: Sage Publications.
- Yin, R. K. (2009). *Case study research design and methods (Fourth Edition)*. Thousand Oak, CA: Sage.
- Yin, R. K. (2011). *Case study research design 5th edition*. New York and London: The Guilford Press.
- Yin, R. K. (2013). *Validity and generalization in future case study evaluations*. California: Sage Publications. doi:10.1177/1356389013497081
- Yuliusman. (2008). Environmental accounting increase comparative advantage and investment (*Akuntansi lingkungan meningkatkan keunggulan kompetitif dan mendorong investasi*). *Journal Percikan*, 91(August). Jambi
- Yusoff, H., & Lehman, G. (2009). Corporate environmental reporting through the lens of semiotics. *Asian Review of Accounting*, 17(3), 226–246. doi:10.1108/13217340910991938.
- Zhang, T., & Han, L. (2008). The Impact of Non-tariff Barriers on China's Textile and Clothing Exports and Relevant Strategies. *Asian Social Science*, 4(1), 120–123.
- Zhu, Q., Sarkis, J., & Geng, Y. (2005). Green supply chain management in China: pressures, practices and performance. *International Journal of Operations & Production Management*, 25(5), 449–468. doi:10.1108/01443570510593148.

## Appendix A

### Participants Identification

Company A's participant identification

Num.	Key person	Function	Data
1	Mr. Slamet (CA.1)	Head of CSR	1. Interview on May 2015 2. The financial statements and Sustainability Report can be downloaded at the website
2	Mr. Samsuri (CA.2)	Head of Production	1. Interview on June 2015 2. Photographs
3	Mr. Zakaria (CA.3)	IT staff	Brief interview on May 2015
4	Mr. Yuliantoro (CA.4)	Head of the Environmental monitoring section	Interview on May 2015
5	Mr.Zarkasi (CA.5)	IT staff	Interview on June 2015

Table Company B's participant identification

<b>Num.</b>	<b>Name</b>	<b>Function</b>	<b>Data</b>
1.	Ms. Nurlela (CB.6)	Manager of Public Relation and Internal Policy	1) Interview on May 2015 2) Data hardcopy of company profile 3) Notes about financial statements 2014 4) Access data online downloaded from company website
2.	Mr. Edwin (CB.7)	Staff of PR	Interview on May 2015
3.	Mr. Zaki (CB.8)	Head of CSR and General Affairs	Interview on June 2015
4.	Mr. Wawan (CB.9)	Head of Bina Lingkungan (Community partnership)	Interview on May 2015
5.	Mr. Yayan (CB.10)	Staff of CSR and General Affairs	Interview on June 2015
6.	Ms. Ratna (CB.11)	Staff of Bina Lingkungan (Community partnership)	Interview on June 2015

Table Experts of Regulator's identification

<b>Name Regulator</b>	<b>Function</b>	<b>Address</b>	<b>Data</b>
Otoritas Jasa Keuangan or Indonesia Financial Service Authority	1) Ms.Etty Senior Specialist (ER.12) 2) Ms.Naomi Head of Sub-Bureau of Regulation of Non-bank Financing (ER.13)	Gedung Sumitro, Jakarta	1) Interview on February 2013 and December 2015 2) Finance Minister meeting notes in Shanghai 2012 3) Integrated reporting scheme 4) Japan consultation notes on early adopt of EA 2005
Kementrian Lingkungan Hidup or Ministry of Environment The Republic of Indonesia (KLHK)	1) Mr. Slamet Head of Energy Division (ER.14) 2) Mr. Hilal Staff of Corporate assessment and compliance (ER.15)	Building B Floor 4, Jakarta	1) Interview 2) Self assessment procedures 3) List of company awarded by KLHK



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Ikatan Akuntan Indonesia (IAI) or Institute of Indonesia Chartered Accountants	1. Ms. Jenny (ER.16)	1. Technical assistance of Accountancy regulation, Jakarta	Interview
	2. Mr. Ibrahim (ER.17)	2. Member of IAI, Surabaya	

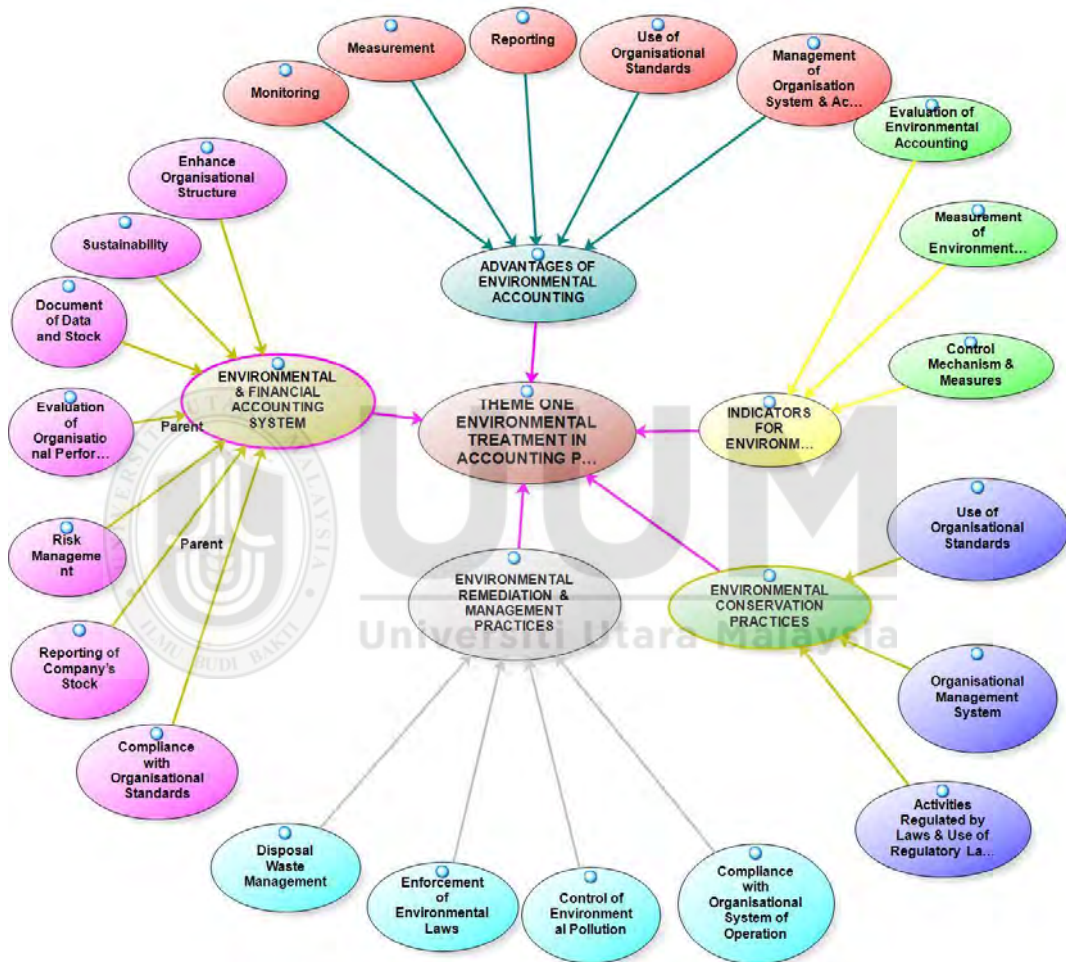
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# Appendix B

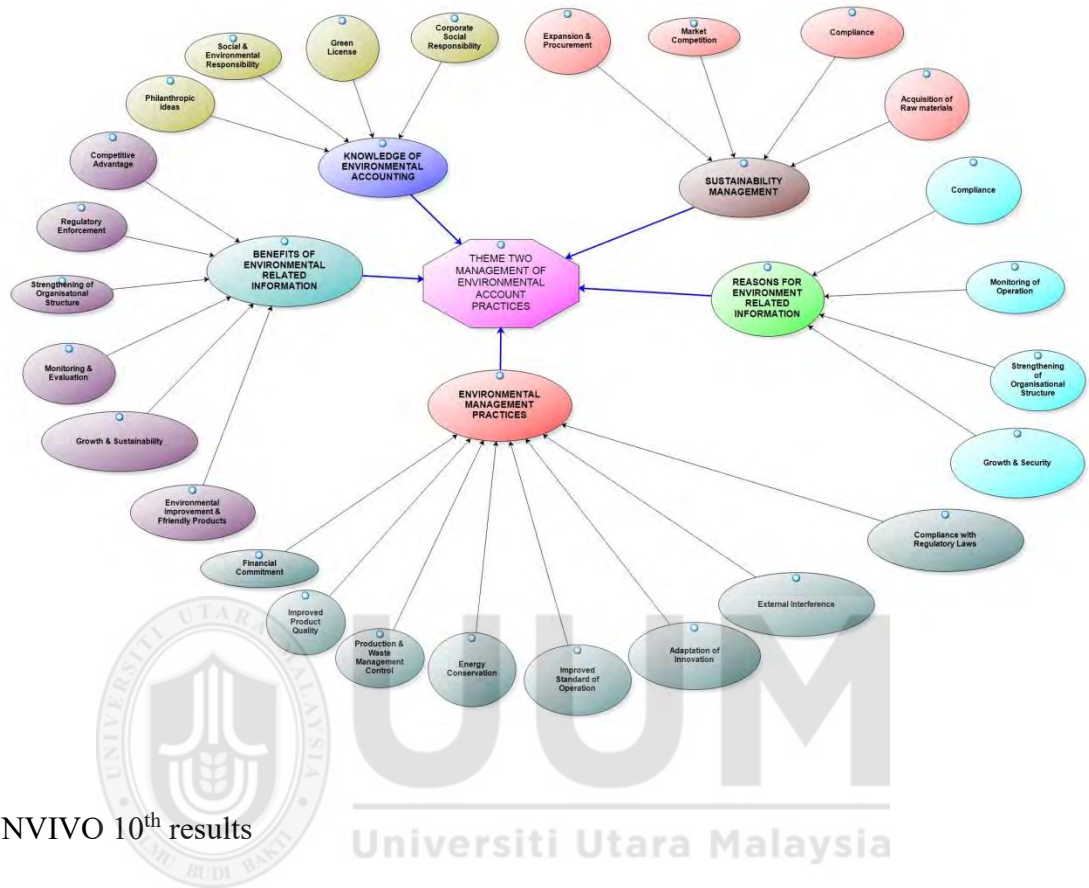
## Nvivo Results Before Saturation Process

### THEME 1: ENVIRONMENTAL TREATMENT IN ACCOUNTING PERSPECTIVE



NVIVO 10<sup>th</sup> result

## THEME 2: MANAGEMENT OF ENVIRONMENTAL ACCOUNT PRACTICES



NVIVO 10<sup>th</sup> results

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## Appendix C

### Agreement Value and Saturation Process

Krippendorff, K. (2011) conveys about agreement value on qualitative data that has no fixed value that could indicate when agreement occurred merely by chance, a condition that is commonly equated with the complete absence of reliability. By chance alone, with two values, one would expect at least 50% agreement, with four theme is 25%, with ten themes is 10%, etc. Based on Krippendorff, K. (2011) in this research is divided two values (regulators and companies) regarding resources (participants) perspective on EA practices, so the category choose with the agreement value more than 50%.

Table Agreement Value of Categories

Values	Participants (sources) numbers
Theme one	6
Theme two	11

To get agreement value more than 50% for theme one regard to number of sources should be  $>3$  (more than 3) and theme two is more than 5 ( $>5$ ) sources.

<b>Theme</b>	<b>Sub Theme</b>	<b>Category</b>	<b>sources</b>
<b>One: ENVIRONMENTAL TREATMENT IN ACCOUNTING PERSPECTIVE</b>	Advantages of EA	Management of Organisation system & activities	4
		Reporting	4
	Environmental & financial accounting system	Sustainability	4
	Indicators for EA	Evaluation of EA	5
	Environmental conservation practices	Use of organizational standards	5
	Environmental remediation & management practices	Enforcement of environmental laws	4
<b>Two : MANAGEMENT OF ENVIRONMENTAL ACCOUNT PRACTICES</b>	Benefits of environmental related information	Environmental improvement & friendly products	8
		Growth & sustainability	7
	Environmental management practices	Compliance with regulatory laws	6
		Improved standard operations	6

Sources' number in saturation process

Nodes		Source
1	THEME ONE ENVIRONMENTAL TREATMENT IN ACCOUNTING PERSPECTIVE	0
2	ADVANTAGES OF ENVIRONMENTAL ACCOUNTING	0
	Management of Organisation System & Activities	4 ✓
	Measurement	3
	Monitoring	1
	Reporting	4 ✓
	Use of Organisational Standards	3
3	ENVIRONMENTAL & FINANCIAL ACCOUNTING SYSTEM	0
	Compliance with Organisational Standards	3
	Document of Debt and Stock	1
	Enhance Organisational Structure	3
	Evaluation of Organisational Performance	3
	Reporting of Company's Stock	1
	Risk Management	1
	Sustainability	4 ✓
4	ENVIRONMENTAL CONSERVATION PRACTICES	0
	Activities Regulated by Laws & Use of Regulatory Laws & Guidelines	1
	Organisational Management System	3
	Use of Organisational Standards	5 ✓
5	ENVIRONMENTAL REMEDIATION & MANAGEMENT PRACTICES	0
	Compliance with Organisational Systems of Operation	2
	Control of Environmental Pollution	3
	Waste Management	1
	Enforcement of Environmental Laws	4 ✓
6	INDICATORS FOR ENVIRONMENTAL ACCOUNTING	0
	Control Mechanism & Measures	2
	Evaluation of Environmental Accounting	5 ✓
	Measurement of Environmental Accounting	3
7	THEME TWO MANAGEMENT OF ENVIRONMENTAL ACCOUNT PRACTICES	0
8	BENEFITS OF ENVIRONMENTAL RELATED INFORMATION	0
	Competitive Advantage	4 ✓
	Environmental Improvement & Friendly Products	8 ✓
	Growth & Sustainability	7 ✓
	Monitoring & Evaluation	3
	Regulatory Enforcement	2
	Strengthening of Organisational Structure	1
9	ENVIRONMENTAL MANAGEMENT PRACTICES	0
	Adaptation of Innovation	2
	Compliance with Regulatory Laws	8 ✓
	Energy Conservation	5 ✓
	External Interference	1

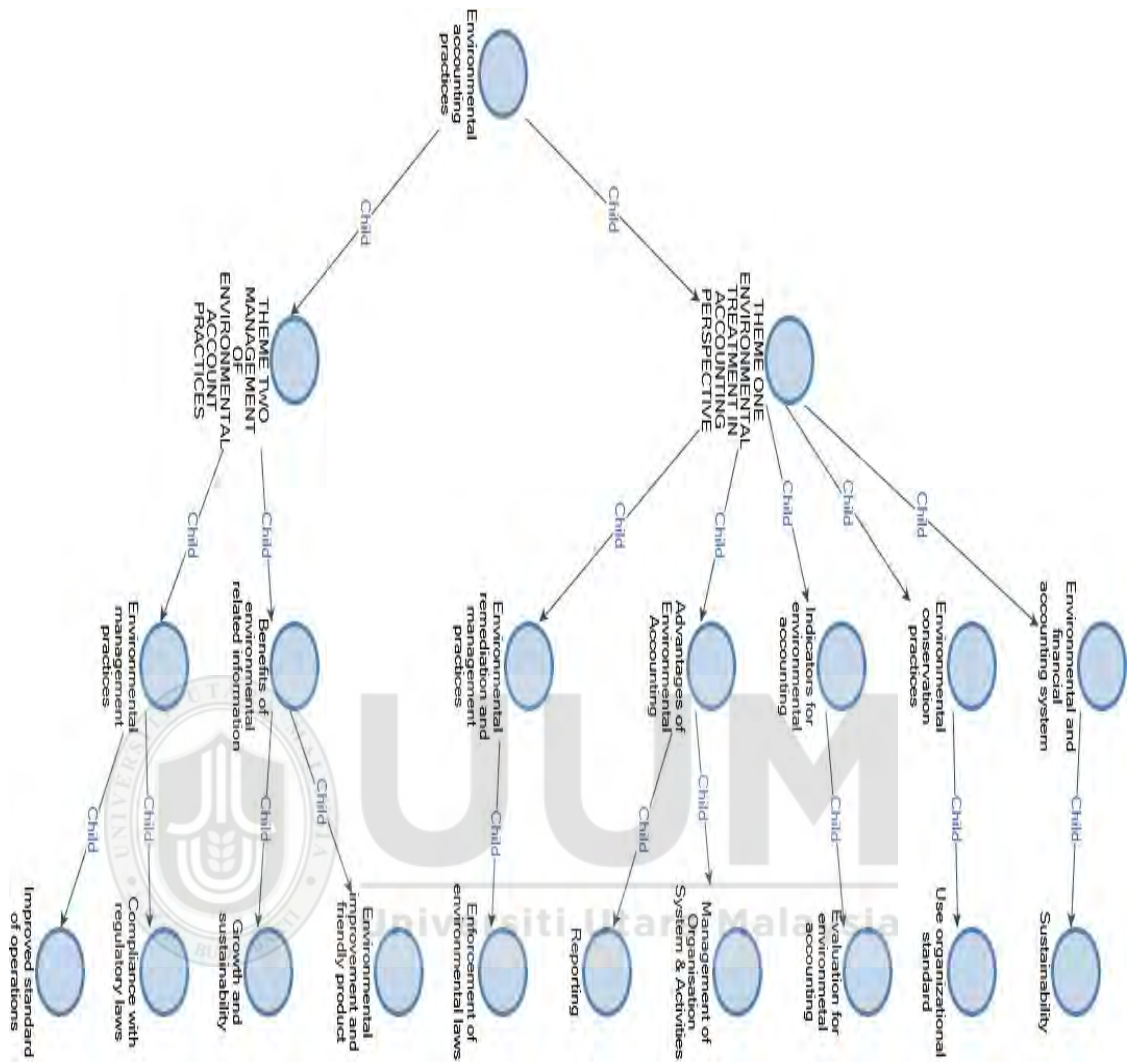
## Nodes

Name	Score
Financial Commitment	7
Improved Product Quality	1
Improved Standard of Operation	6
Production & Waste Management Control	4
<b>KNOWLEDGE OF ENVIRONMENTAL ACCOUNTING</b>	0
Corporate Social Responsibility	3
Green License	2
Philanthropic Ideas	1
Social & Environmental Responsibility	3
<b>REASONS FOR ENVIRONMENT RELATED INFORMATION</b>	0
Compliance	4
Growth & Security	1
Monitoring of Operation	3
Strengthening of Organisational Structure	3
<b>SUSTAINABILITY MANAGEMENT</b>	0
Acquisition of Raw materials	1
Compliance	5
Expansion & Procurement	3
Market Competition	1



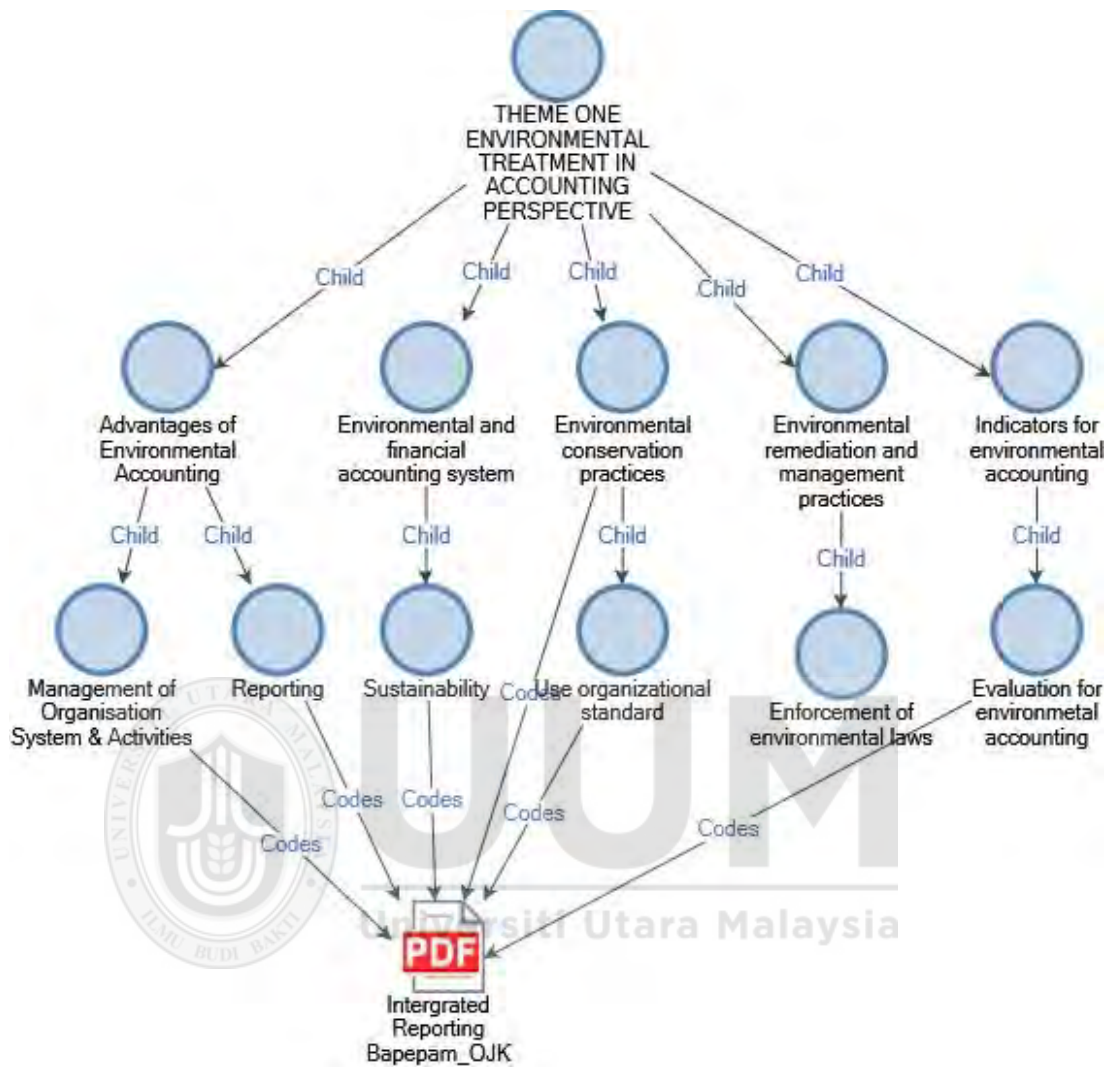
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## General Themes after Saturation Process



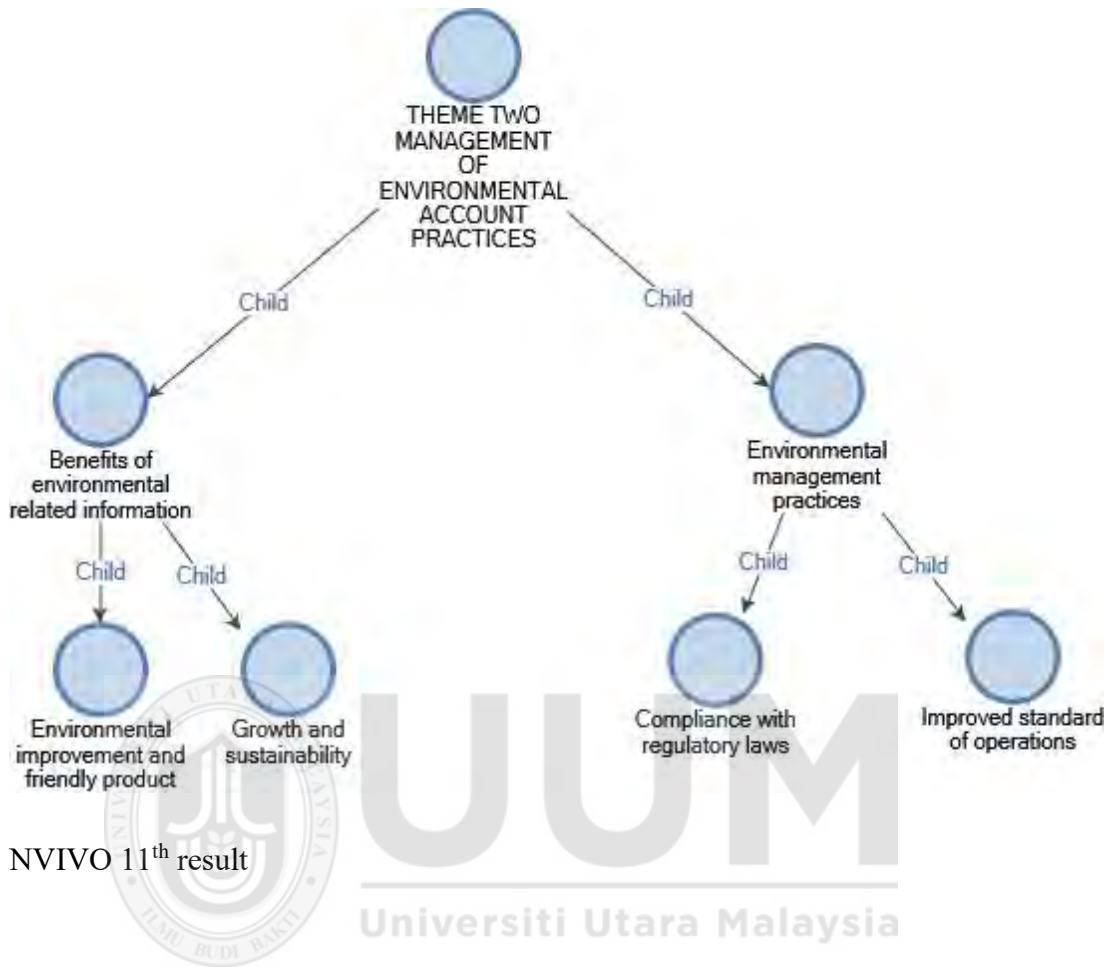


## Theme One of Environmental Treatment in Accounting Perspective



Articulation Regulators on EA Practices-integrating on economi, sosial, and environment activities through reporting

Theme TWO Perspective of management on environmental account practices



## Appendix D

### Context Unit on Categories and NVIVO Summary Report

Name	Memo Link	Symbolic saturation (immersion on practicing activity)
		a√ refer to cost structure
<b>THEME TWO: MANAGEMENT OF ENVIRONMENTAL ACCOUNT PRACTICES</b>		b# refer to performance measurement
		c <sup>ll</sup> refer to disclosure/ reporting matters
<b>ST3: BENEFITS OF ENVIRONMENTAL RELATED INFORMATION</b>	<p>&lt;Internals\Rep.CA3&gt; - § 1 reference coded [3.54% Coverage]</p> <p>Reference 1 - 3.54% Coverage Company has <b>still struggle about ownership</b>. Acquisition process to be PT Semen Indonesia which took over Tonasa Cement, Padang Cement.</p>	b#
	<p>&lt;Internals\Rep.CA5&gt; - § 1 reference coded [4.06% Coverage]</p> <p>Reference 1 - 4.06% Coverage Starting in 2012 for <b>environmental cost, then pursue for beneficiary</b> on 2014. We have been trying to develop environment as our first of many aspects for sustainability strategy.</p>	b#
<b>SST31: Growth &amp; Sustainability</b>	<p>&lt;Internals\Resp. CA1&gt; - § 1 reference coded [3.42% Coverage]</p> <p>Reference 1 - 3.42% Coverage One of the factors that contributed to the <b>Company's economic performance</b></p>	b#

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**achievement in 2013** was the ability to reduce costs by Rp300 billion.

<Internals\\Resp.CA2> - § 1 reference coded [3.51% Coverage]

Reference 1 - 3.51% Coverage  
**We can increase our productivity,** expand our market then become profitable and sustainable company. Profit will follow as first impact of sustainable condition.

b#

<Internals\\Resp.CB10> - § 1 reference coded [0.96% Coverage]

Reference 1 - 0.96% Coverage  
The existence of ISO 18001 on K3, the **company reduced the number of workplace accidents** reach to 0%

b#

<Internals\\Resp.CB11> - § 2 references coded [8.32% Coverage]

Reference 1 - 4.31% Coverage

Company has a **competitive advantage after employ higher environment standard.** Company Profit & Loss Reports Increased year by year ranked in harmony with environmental-compliance.

c ll

Reference 2 - 4.00% Coverage

**The CSR report is important for foreign parties** who become business partners. They asked to know and see the company's business processes are environmentally friendly.

b#

<Internals\\Resp.CB7> - § 1 reference coded [8.31% Coverage]

Reference 1 - 8.31% Coverage

Due to product **quality standards have regulated by WHO,** we compete in terms of environmentally friendly products **from upstream to**

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**downstream**, starting with our vendors be selected through their license notable as green business. This is a marketing strategy to expand through local community.

<Internals\\Rep.CA3> - § 1 reference coded [6.05% Coverage]

Reference 1 - 6.05% Coverage

We got somehow to **be profitable company before so many competitors** came such as from national cibinong cement in west Java, tonasa cement in Celebes, sriwijaya cement in Sumatera, also from multinational corporation such as Holcim.

b#

<Internals\\Resp.CB10> - § 1 reference coded [3.75% Coverage]

Reference 1 - 3.75% Coverage

**Bio secure is our key in competition** with other companies in Indonesia and the world. We campaign our success in the competition Koi fish in Singapore to be one part of an image capture of our products are used to make the koi fish of high value, because viruses and fungi that have been the main enemy of the color, growth and health of the fish be successfully treated using the vaccine our products.

SST32: Environmental Improvement & Friendly Products

<Internals\\Resp.CB11> - § 1 reference coded [4.31% Coverage]

Reference 1 - 4.31% Coverage

Company has a competitive advantage after employ higher environment standard. **Company Profit & Loss Reports Increased year by year ranked in harmony with environmental-compliance.**

a√

<Internals\\Resp.CB7> - § 1 reference coded [6.50% Coverage]

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Reference 1 - 6.50% Coverage

Due to product quality standards have regulated by WHO, we compete in terms of environmentally friendly products from upstream to downstream, starting with our vendors be selected through their license notable as green business

**ST5:  
ENVIRONMENTAL  
MANAGEMENT  
PRACTICES**

<Internals\\Rep.CA3> - § 1 reference coded [7.13% Coverage]

b#

Reference 1 - 7.13% Coverage

**Physical information pursued by Environment Development Bureau (Biro Bina Lingkungan),** such as level of emission, waste, conservation needs. Criteria absolute emission reductions derived from the calculation of the comparison between the proceeds with production in tons.



<Internals\\Rep.CA5> - § 2 references coded [14.31% Coverage]

**SST53: Compliance with Regulatory Laws**

Reference 1 - 10.00% Coverage

c ll

We have been trying **to follow every regulation from The Republic of Indonesia laws**, but its number will increase every year. For example for **CSR reporting**, we follow from GRI G-3 then in 2014 changed to GRI G-4. Then the Environmental Ministry increases its requirement about counting and reporting quality of conservation activities such as has to fill the emission form, reduction, prevention of environmental impact form in every week.

Reference 2 - 4.31% Coverage

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There is not standards, assumption yet about environmental accounting. **We follow the regulatory from government** and attempt our consultant for setting accounting procedure for it purposes.

<Internals\\Resp. CA1> - § 2 references coded [14.82% Coverage]

Reference 1 - 8.09% Coverage

**Regulation from government and policy from Board of Directors (BOD) so far is inline.** But about accounting for social and environment, we have difficulties to follow. We learn from Japan but it's not 100% adopt from Japan because it quite different approach. We have to follow Indonesian GAAP (Indonesian Financial Accounting Standard).

Reference 2 - 6.73% Coverage

Even though, company status is state-owned, it has to **follow public sector and private sector regulation also.** Such as for listing company stock market, we have to follow the same regulation with private company. Company management systems occupy all requirement on regulations.

<Internals\\Resp.CB10> - § 1 reference coded [1.91% Coverage]

Reference 1 - 1.91% Coverage

Company got an award from Environmental Ministry about Gold level which **put company in compliance Excellency.** Means, company reached more than requirements from regulator. Then in 2014, it got Gold award.

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<Internals\\Resp.CB6> - § 1 reference coded [3.66% Coverage]

Reference 1 - 3.66% Coverage

**Company started to follow regulations and policy** from Environmental Ministry. Every year of 4 years from 2011-2014, company got an award about Green Level.

<Internals\\Resp.CB7> - § 1 reference coded [3.13% Coverage]

Reference 1 - 3.13% Coverage

We have been trying to follow the regulation which has the number of requirements increasing year by year.



<Internals\\Resp. CA1> - § 1 reference coded [3.54% Coverage]

Reference 1 - 3.54% Coverage

Noise pollution has been reduced while we change our machine with less noise. **Emission is always monitored** suppose below of the maximum standard.

<Internals\\Resp. CA2> - § 2 references coded [8.08% Coverage]

**SST5 4: Improved Standard of Operations**

Reference 1 - 5.05% Coverage

b#

**Our production and control of it happened in 24 hours as computerized.** We use special tool design for production operating. We can control every minute, total unit of raw materials needs and total unit output can be monitored also

Reference 2 - 3.03% Coverage

Yes, as matter of our production process **using real time monitoring.** Everything

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wrong happened in our production process can be detected.

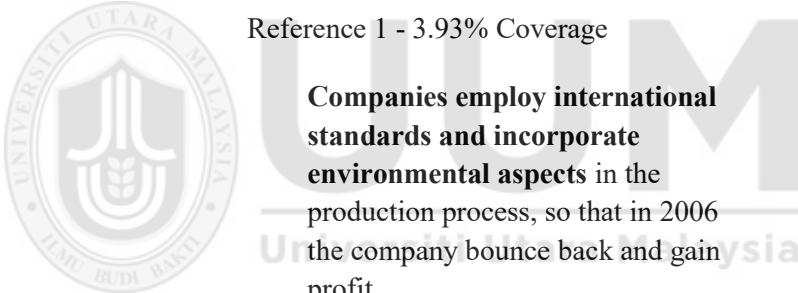
<Internals\\Resp.CB10> - § 1 reference coded [2.81% Coverage]

Reference 1 - 2.81% Coverage

Linkages production of polio vaccine is used all the media in the form of a liquid. So that is the main **wastewater generated**. We have ponds to extract water from inorganic materials. We monitor the results of waste once a month with a filter that has been accredited in accordance with the requirements.

<Internals\\Resp.CB11> - § 1 reference coded [3.93% Coverage]

Reference 1 - 3.93% Coverage



**Companies employ international standards and incorporate environmental aspects** in the production process, so that in 2006 the company bounce back and gain profit.

<Internals\\Resp.CB6> - § 1 reference coded [5.83% Coverage]

Reference 1 - 5.83% Coverage

As in **geophysical activities**, company could reduce

1. 1,700 tonnage CO<sub>2</sub>/year or made electrical efficiency usage  
2,616,442 kilowatt/ hour/year
2. Recycle of 7,76 tonnage of used motor oil became oil-base for co-processing
3. Free from litter

<Internals\\Resp.CB9> - § 1 reference coded [41.85% Coverage]

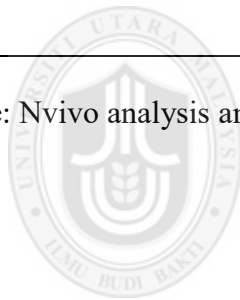
Reference 1 - 41.85% Coverage

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Commitment to energy efficiency is consistently implemented not only in production activities but also operational activities, which begin with energy-efficient office design. Air conditioning in production areas (clean room) and storage space sterilizing systems should not be interrupted for 24 (twenty four) hours and be optimized using inverter technology that can adjust to the most efficient power consumption, especially at night. Indoor lighting uses energy efficient LED lights and solar power for basement lighting. Various green activities are also conducted in the Company's environment such as making bio-pore holes for water catchment and vehicle emission tests every 6 (six) months.

Source: Nvivo analysis and verbal analysis

01/03/2016 12:02



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Source Summary

## Environmental Accounting

01/03/2016 12:02

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References	Number of Audio Video References	Number of Image Referenc
<b>Document</b>						
<b>Internals\\Rep.CA3</b>						
557	30	16	0.8100	41	0	0
<b>Internals\\Rep.CA5</b>						
669	37	17	0.7972	47	0	0

**Internals\\Resp. CA1**

623	30	18	0.7685	63	0	0
-----	----	----	--------	----	---	---

**Internals\\Resp. CA2**

726	25	12	0.5101	49	0	0
-----	----	----	--------	----	---	---

**Internals\\Resp.CA4**

182	25	6	0.6620	8	0	0
-----	----	---	--------	---	---	---

**Internals\\Resp.CB10**

1703	105	17	0.4837	82	0	0
------	-----	----	--------	----	---	---

**Internals\\Resp.CB11**

621	39	10	0.3031	23	0	0
-----	----	----	--------	----	---	---

**Internals\\Resp.CB6**

663	41	11	0.4513	25	0	0
-----	----	----	--------	----	---	---

**Internals\\Resp.CB7**

522	35	14	0.5358	39	0	0
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Reports\\Source Summary Report

Page 1 of 2

01/03/2016 12:02

Total Words in Source	Total Paragraphs in Source	Number of Nodes Coding Source	Coded Percentage of Source	Number of Text References	Number of Audio Video References	Number of Image Referenc
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**Internals\\Resp.CB8**

115	13	4	0.4499	5	0	0
-----	----	---	--------	---	---	---

**Internals\\Resp.CB9**

241	15	3	0.7498	13	0	0
-----	----	---	--------	----	---	---

**Internals\\Resp.R12**

4663	240	23	0.6074	210	0	0
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**Internals\\Resp.R13**

3706	183	20	0.7209	229	0	0
------	-----	----	--------	-----	---	---

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**Internals\\Resp.R14**

518	43	9	0.6219	35	0	0
-----	----	---	--------	----	---	---

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**Internals\\Resp.R15**

2332	133	18	0.8016	147	0	0
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**Internals\\Resp.R16**

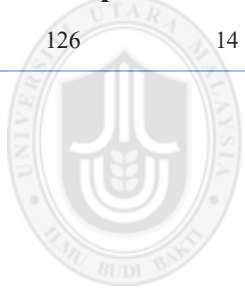
4290	217	19	0.7424	279	0	0
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**Internals\\Resp.R17**

2787	126	14	0.8345	204	0	0
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## Appendix E

### Synchronic pattern

#### Based on the finding

Pattern sequences	Regulator categories	Explanation	Internal management	Explanation	Similarity-Correspondence Pattern
1	Use of organizational standards	<p><b>As long as the goals are the same<sup>a</sup>, the environmental conservation activities</b>  <sup>b</sup> outlined in these guidelines include the pollution prevention activities defined by the ISO 14001. Indonesia adopted ISO 14001 and ISO 14004 to become SNI-19-14001-2005. Pollution prevention is followed to Environmental Aspects which defined by organisation or company (ER.14, interview</p>	Improved standard operation	<p><b><u>Commitment to energy efficiency is consistently implemented<sup>a</sup> not only in production activities but also operational activities<sup>b</sup></u></b>, which begin with energy-efficient office design. Air conditioning in production areas (clean room) and storage space sterilizing systems should not be interrupted for 24 (twenty four) hours and be optimized using inverter technology that can adjust to the most efficient</p>	<p>a) goal are same = commitment is consistently</p> <p>b) the environmental conservation activities = not only in production activities but also operational activities</p>

data, May 4, 2014)

power consumption, especially at night. Indoor lighting uses energy efficient LED lights and solar power for basement lighting. Various green activities are also conducted in the Company's environment such as making bio-pore holes for water catchment and vehicle emission tests every 6 (six) months.” (CB.1, interview data, 2014)



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2	Enforcement of environmental laws	Generally, <b>Indonesian environmental law regulates about what environmental in business,</b> how to measure environmental impact, who have responsibility	Compliance to regulatory laws	<b>We have been trying to follow every regulation</b> from The Republic of Indonesia laws, but its number will increase every year. For example for CSR reporting, we follow from	c) Indonesian environmental law regulates = We have been trying to follow every regulation
---	-----------------------------------	---	-------------------------------	---	--

y to report”  
(ER.15  
interview  
data, 2015).

GRI G-3 then  
in 2014  
changed to  
GRI G-4.  
Then the  
Environmental  
Ministry  
increases its  
requirement  
about  
counting and  
reporting  
quality of  
conservation  
activities such  
as has to fill  
the emission  
form,  
reduction,  
prevention of  
environmental  
impact form in  
every week.

3	Management of organisational system and activities	It is the <b>framework for integrating the accounting concepts of both <u>physical units and monetary</u></b> values and addresses the issue of cost performance. Also, in order to calculate the economic benefits of environment	Environmental improvement and friendly products	<b>Due to product quality standards</b> have regulated by WHO, we compete in terms of environmentally friendly products <b>from <u>upstream to downstream</u></b> , starting with our vendors be selected through their license notable as	d) Framework for= due to quality standards e) of both physical units and monetary=from upstream to downstream
---	--	--	---	--	--

		al conservation activities in monetary terms, specific calculation methods are described (cost versus benefit).		green business	
4	Management of organisation system and activities	<p>“It is the framework for <b><u>integrating the accounting concepts<sup>a</sup></u></b> of both <b><u>physical units and monetary values<sup>b</sup></u></b> and addresses the issue of cost performance. Also, in order to calculate the economic benefits of environmental conservation activities in monetary terms, specific calculation methods are described (cost versus benefit).”</p>	Improved standard operation	<p>It was learned that <b><u>accounting system for the environmental protection<sup>a</sup></u></b> is very <b><u>important and useful<sup>b</sup></u></b>. As Japan’s requirement want to start on 2012, a year before complete equipment from Japan is installed in company sites on 2013</p>	<p>f) Integrating the accounting concepts=accounting system</p> <p>g) Values=very important and useful</p>
5	Reporting	<p><b><u>Through the reporting</u></b> of its</p>	Growth and sustainability	<p><b><u>The CSR report is important for foreign</u></b></p>	<p>h) Through the reporting = the CSR report</p>



		environmental accounting results, a company <b><u>promotes environmental communication</u></b>		<b><u>parties who become business partners.</u></b> They asked to know and see the company's business processes are environmentally friendly.	i) Promotes communication = become business partners
6	Evaluation of environmental accounting	When <b>companies select their appropriate indicators</b> , they can refer not only the environmental performance indicators presented by the Ministry of the Environment but also the information about environmental accounting provided by other companies in a similar industrial field.	Growth and sustainability	"The CSR report is important for foreign parties who become business partners. <b>They asked to know and see the company's business processes are environmentally friendly</b>	j) Companies select = they (foreign parties) asked
7	Sustainability	when environmentally conscious materials or parts are procured at a lower	Growth and sustainability	The CSR report is important for foreign parties who become business partners.	k) This indicates = to know and see l) Activities have become a fully integrated = business

price than conventional material or parts, **this indicates that environmental conservation activities have become a fully integrated** part of the company's goods or services

They asked **to know and see the company's business processes are environmentally friendly**

processes are environmentally friendly

NVIVO supported

Pattern sequences	Theme one	Explanation	Theme two	Explanation	pattern
1	Use of organizational standards	As long as <b><u>the goals are the same<sup>a</sup>, the environmental conservation activities<sup>b</sup></u></b> outlined in these guidelines include the pollution prevention activities defined by the ISO 14001. Indonesia adopted ISO 14001 and ISO 14004 to	Improved standard operation	<b><u>Commitment to energy efficiency is consistently implemented<sup>a</sup> not only in production activities but also operational activities<sup>b</sup></u></b> , which begin with energy-efficient office design. Air conditioning in production areas (clean room) and storage	a) goal are same = commitment is consistently  b) the environmental conservation activities = not only in production activities but also operational activities

become  
SNI-19-  
14001-  
2005.  
Pollution  
prevention  
is followed  
to  
Environmen-  
tal Aspects  
which  
defined by  
organisation  
or company  
(ER.14,  
interview  
data, May 4,  
2014)

space  
sterilizing  
systems  
should not  
be  
interrupted  
for 24  
(twenty  
four) hours  
and be  
optimized  
using  
inverter  
technology  
that can  
adjust to the  
most  
efficient  
power  
consumption  
, especially  
at night.  
Indoor  
lighting uses  
energy  
efficient  
LED lights  
and solar  
power for  
basement  
lighting.  
Various  
green  
activities are  
also  
conducted in  
the  
Company's  
environment  
such as  
making bio-  
pore holes  
for water  
catchment  
and vehicle  
emission  
tests every 6  
(six)



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2	Enforcement of environmental laws	Generally, <b>Indonesian environmental law regulates about what environmental in business, how to measure environmental impact, who have responsibility to report</b> " (ER.15 interview data, 2015).	Compliance to regulatory laws	months." (CB.1, interview data, 2014) <b>We have been trying to follow every regulation</b> from The Republic of Indonesia laws, but its number will increase every year. For example for CSR reporting, we follow from GRI G-3 then in 2014 changed to GRI G-4. Then the Environmental Ministry increases its requirement about counting and reporting quality of conservation activities such as has to fill the emission form, reduction, prevention of environmental impact form in every week.	c) Indonesian environmental law regulates = We have been trying to follow every regulation
---	-----------------------------------	---	-------------------------------	---	--



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3	Management of organisati on system and activities	It is the <b>framework for integrating the accounting concepts of both <u>physical units and monetary values</u></b> and addresses the issue of cost performanc e. Also, in order to calculate the economic benefits of environmen tal conservatio n activities in monetary terms, specific calculation methods are described (cost versus benefit).	Environme ntal improvem ent and friendly products	<b>Due to product quality standards</b> have regulated by WHO, we compete in terms of environment ally friendly products <b>from upstream to downstream</b> , starting with our vendors be selected through their license notable as green business	d) Framework for= due to quality standards e) of both physical units and monetary=from upstream to downstream
4	Management of organisati on system and activities	“It is the framework for <b>integrating the accounting concepts<sup>a</sup> of both physical units and monetary values<sup>b</sup></b> and addresses the issue of	Improved standard operation	It was learned that <b>accounting system for the environmen tal protection<sup>a</sup> is very important and useful<sup>b</sup></b> . As Japan’s requirement want to start	f) Integrating the accounting concepts=accou nting system g) Values=very important and useful

cost performance. Also, in order to calculate the economic benefits of environmental conservation activities in monetary terms, specific calculation methods are described (cost versus benefit).”

on 2012, a year before complete equipment from Japan is installed in company sites on 2013

5	Reporting	<p><b><u>Through the reporting</u></b> of its environmental accounting results, a company <b><u>promotes environmental communication</u></b></p>	Growth and sustainability	<p><b><u>The CSR report is important for foreign parties who become business partners.</u></b> They asked to know and see the company's business processes are environmentally friendly.</p>	<p><i>h)</i> Through the reporting = the CSR report</p> <p><i>i)</i> Promotes communication = become business partners</p>
6	Evaluation of environmental accounting	When <b>companies select their appropriate indicators</b> , they can refer not only the environmental	Growth and sustainability	<p>“The CSR report is important for foreign parties who become business partners. <b>They asked to know and see the</b></p>	<p><i>j)</i> Companies select = they (foreign parties) asked</p>

performance indicators presented by the Ministry of the Environment but also the information about environmental accounting provided by other companies in a similar industrial field.

**company's business processes are environmentally friendly**

7



Sustainability

when environmentally conscious materials or parts are procured at a lower price than conventional material or parts, **this indicates that environmental conservation activities have become a fully integrated part of the company's goods or services**

Growth and sustainability

The CSR report is important for foreign parties who become business partners. They asked **to know and see the company's business processes are environmentally friendly**

k) This indicates = to know and see

l) Activities have become a fully integrated = business processes are environmentally friendly

## Appendix F

### Financial Data in Million IDR the Company A and Company B

Notasi on	Descriptio n	first	second	third	Compa ny
Y	CoGM in efficiency cost (absorptio n)	10,316,11 6,762,000	13,462,110. 967	15,174,43 2.874	A
		546.316	600.870	731.059	B
X1	Efficiency cost	n/d	n/d	300,000	A
		n/d	n/d	n/d	B
X2	Investmen t on the Environm ent	3883.664 429	3,687.24349 7	9,000+5,1 81.196639	A
		2.695	1.632	6.984	B
X3	Financing Activities	12.097	8.760	9.827	A
					B
X4	Contingen t Asset			89.216346	A
		2.695	1.632	6.984	B
X5	Contingen t Liabilities				A
		n/d	n/d	n/d	B

To find out at which stage the achievements of the company to invest on the environment conservation activities. Calculations using the  $y = f(x) + \epsilon$  by assuming that both are already in the stage of company's latest investment in accordance with the conditions that have entered the stage of sustainability investment.

It just needs to be understood is that every company provides the data recorded on the annual report containing the sustainability report and financial report. As revealed by



Burrit et.al (20012) that is a mature investment that has been reported in a sustainable environment activities in an annual report.

$$y = f(x) + \dot{\epsilon}$$

(Y) is the expected output in the form of cost efficient production, ekselerasi sales after efficiency, and other comprehensive income after the efficiency of a number of factors (x) is the efficiency of cost, investment on the environment, financing activities in the environment, contingent asset, contingent liability ,

$$Y=f(Ix)+E; (x,y)=I..... (1)$$

To simplify the result in monetary to Cartesian coordinates. It should be LENT (Ln) as notation

$$\ln Y = \ln(Ix+E)..... (2)$$

$$Y = e^{\ln(Ix+E)}$$

As follows the notation 2 to examine the investment benefit on efficiency activity on cost of production on the Company A and B cases.

### The Company A's case

The first year  $10,316,116,762,000 = (3,883,664,429)x$

$$X = 2,656.28428 \approx 2,656.3 \quad (1)$$

$$y = e^{\ln(3,883,664,429 * 2,656.3)}$$

$$y = 29.96472852 \approx 30 \quad (2)$$

The second year  $13,462,110,967,000 = (3,687,243,497)x$

$$x = 3,650.99592 \approx 3,651 \quad (1)$$

$$y = e^{\ln(3,687,243,497 * 3,651)}$$

$$y = 30.23090026 \approx 30.2 \quad (2)$$

The third year  $15,174,432,874,000 = (9,000,000,000 + 5,181,196,639)x$

$$x = 15,174,432,874,000 / 14,181,196,639$$

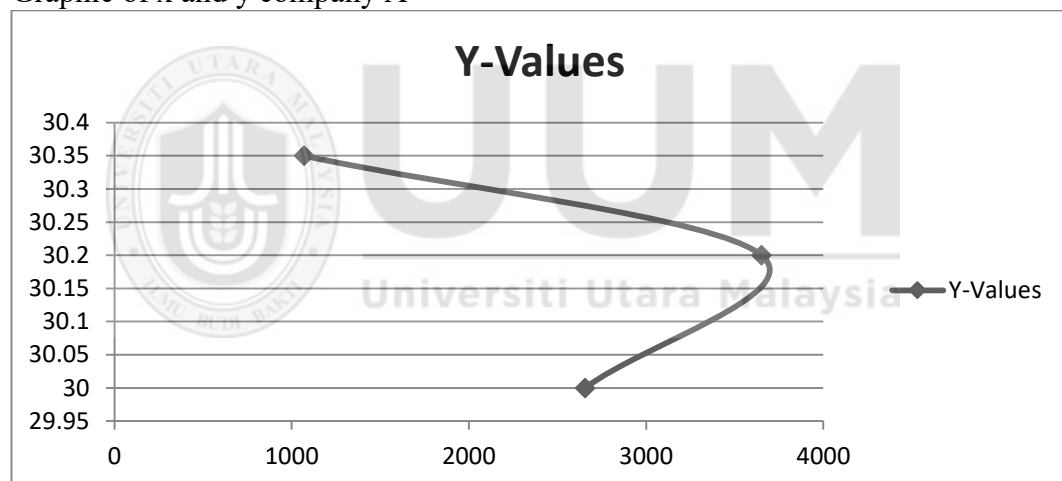
$$x = 1,070.03896 \approx 1,070 \quad (1)$$

$$y = e^{\ln(14,181,196,639 * 1,070)}$$

$$y = 30.3563308 \quad (2)$$

year	1	2	3
Y	30	30.2	30.35
X	2,656.3	3,651	1,070

Graphic of x and y company A



Graphic movement is to corrective phase

### The company B's case

$$\text{The first year } 546,316,000,000 = (9,827,000,000 + 6,984,000,000)x$$

$$X = 546,316,000,000 / 16,811,000,000$$

$$X = 32.4975314 \approx 32.50 \quad (1)$$

$$y = e^{\ln(16,811,000,000 * 32.50)}$$

$$y = 13.2110 \quad (2)$$

$$\text{The second year } 600,870,000,000 = (12,097,000,000 + 2,695,000,000)x$$

$$X = 600,870,000,000/14,792,000,000$$

$$x = 40.621281 \approx 32.62 \quad (1)$$

$$y = e^{\ln(14,792,000,000 * 32.62)}$$

$$y = 13.306 \quad (2)$$

The third year  $731,059,000,000 = (8,760,000,000 + 1,632,000,000)x$

$$x = 731,059,000,000/10,392,000,000$$

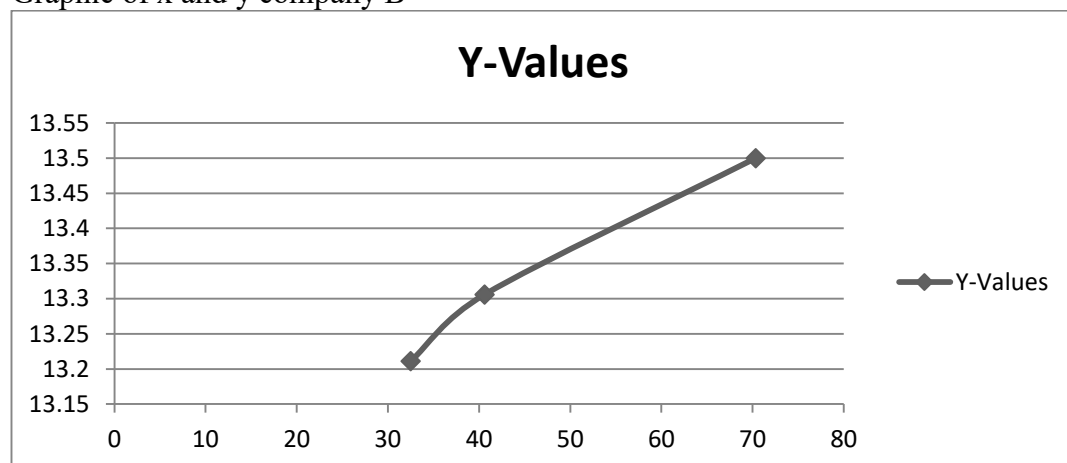
$$x = 70.3482 \approx 70.35 \quad (1)$$

$$y = e^{\ln(10,392,000,000 * 70.35)}$$

$$y = 13.50227 \quad (2)$$

year	1	2	3
Y	13.2110	13.306	13.50
X	32.50	40.62	70.35

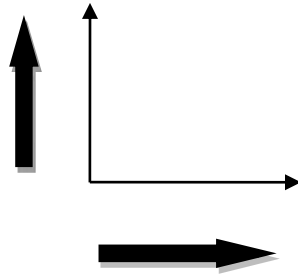
Graphic of x and y company B



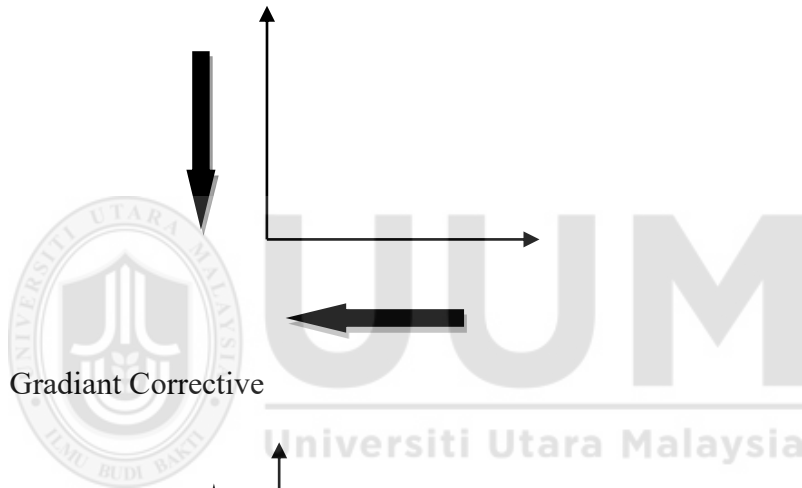
Graphic movement is to growth phase

Figure of Environmental investment and environmental impact shifted

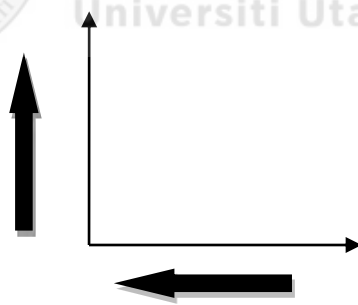
1. Gradient Growth



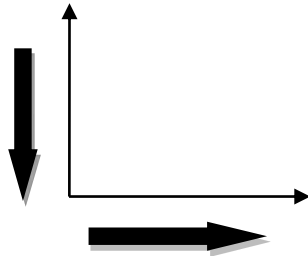
2. Gradient Green wash



3. Gradient Corrective



4. Gradient Sustainable



## Appendix G

### Calculation Example for EcP on EP

Using equation on Table 5.2 to find the economic benefit value as follow:

$$\frac{\text{Total efficiency (y)}}{\text{Net value of comprehensive P/L (a)}} = (\text{EcP}) \quad \text{-----}(1)$$

Using notation of UNCTAD (2003, p.127) adapted by Biobebe et al (2013):

$$\text{Added Value (AV)} = \frac{\text{Environmental performance (EP)}}{\text{Financial performance (EcP)}} \quad \text{-----}(2)$$

Case in Company A ----- (third year)

Cost efficiency= IDR300,000,000,000 ;

VA= IDR11,598,604,085,000;

Net value of comprehensive P/L= IDR5,587,345,791,000

Financial performance based on environmental benefit (EcP);

$$\text{EcP}; \frac{300,000,000,000}{5,587,345,791,000} \times 100\% = 5.369\% \quad \text{-----}(1)$$

$$(\text{Sales} - \text{CoGS}) = \text{EP} / (\text{EcP}) \quad \text{-----}(2)$$

$$11,598,604,085,000 = \text{EP} / 5.369\%$$

$$\text{EP} = \text{IDR } 622,729,053,323.65$$

Contribution of EP to economic growth of the end of third year is IDR 622,729,053,323.65 or the benefit is 2.07 times than cost (622,729,053,323.65/300,000,000,000)

Case in Company B ----- (third year)

Cost efficiency= IDR2,167,990,302.4\* ; Cost efficiency=2,435,944.16 kwh X  
IDR890 (electrical fares)\*=IDR2,167,990,302.4

VA= IDR1,853,682,000,000;

Financial performance based on environmental benefit (EcP)

Net value of comprehensive P/L= IDR572,468,000,000

$$\text{EcP; } \frac{\text{IDR } 2,167,990,302.4 \times 100\%}{572,468,000,000} = 0.3787\% \text{ -----(1)}$$

$$(\text{Sales} - \text{CoGS}) = \text{EP} / (\text{efficiency}) \text{ -----(2)}$$

$$1,853,682,000,000 = \text{EP} / 0.3787\%$$

$$\text{EP} = \text{IDR } 7,020,068,544.85$$

Contribution of EP to economic growth of the end of third year is IDR  
7,020,068,544.85 or the benefit is 3.2 times than cost (7,020,068,544.85  
/2,167,990,302.4)

## Appendix H

### Annual Report Analysis

#### Company A

##### Cost structure

###### ENVIRONMENTAL COSTS AND PURPOSE

Komponen   Component	Besar Biaya   Cost Value
Pengelolaan Limbah   Waste Management	21,600,000
Pengelolaan Emisi   Emissions Management	473,025,000
Penggunaan Jasa Pihak External   External Services for Environmental Management	745,720,000
<b>Jumlah   Total</b>	<b>1,240,345,000</b>

Keterangan | Notes : Dalam Rupiah | In IDR

Source: Sustainability Report Company A (2013, p.88)

#### ENVIRONMENTAL COSTS

Semen Indonesia's commitment to preserving the environment, is also manifested in the form of environmental investment. During 2013 the Company has purchased specialized equipment to support green mining activities.

Source: Sustainability Report Company A (2013, p.88)

**Fundamental Financial Analysis using IRR and elaboration calculation captured the unappropriate investment of environmental aspect. However, company A is still continuing the program. It is a part of commitment.**

Biaya proyek : 25 Milyar	IRR : 7,57 %	NPV: - 4,8 Milyar
--------------------------	--------------	-------------------

Secara ekonomis proyek tersebut **TIDAK LAYAK** (IRR = 7,57%; NPV = -4,8 M), namun karena tingginya komitmen manajemen terhadap lingkungan, proyek tersebut dijalankan dengan mempertimbangkan penurunan Gas Rumah Kaca dan pertumbuhan ekonomi masyarakat. *Proyek ini didaftarkan sebagai proyek CDM.*

Proyek tersebut dikembangkan di unit Tuban 1 pada tahun 2011 dengan investasi sebesar 34 Milyar; IRR : 4,19%; NPV : - 11,2 Milyar dan telah beroperasi mulai Januari 2012.

Source: DRKPL 2013, p.8.

Tabel 1

*An example of overall analysis of performance based of monetary value*

Company	Fundamental financial analysis	EP and EcP Ratios	Gradient performance to cost efficiency
A	NPV= IDR -4.8 billions	EP 2.07 times than EcP	Corrective Gradient

## Company B

### Cost Structure

#### a. Investasi Berdasarkan Penggunaannya

#### a. Investment by According to Usage

Realisasi Investasi Berdasarkan Penggunaannya | Investment Realization According to Usage

Delam Juta Rupiah | In Million Rupiah

Kelompok Investasi	2009	2010	2011	2012	2013	TOTAL	Kerakany Penurunan Increase/ Decrease (%)	Investment Group
	1	2	3	4	5	6	5/4	
<b>RUTIN   ROUTINE</b>								
Penilaian WHO & GMP	3.810	41.085	136.242	39.428	50.654	271.219	28,47	Assessment WHO & GMP
Penggantian	45.586	25.734	18.464	18.592	44.814	153.190	141,04	Replacement
IPALCI/Lingkungan	526	3.372	6.964	2.695	1.632	15.209	(39,44)	IPALCI/Environment

#### The purpose of Commitments:

During 2013 Bio Farma performed material commitments for capital investment with several partners with the objective of procurement related to the WHO & GMP assessment, replacement, WWTP(OHS)/ Environment, capacity enhancement, research and development and new products.

Realization of investment in 2013 amounted to Rp248.28 billion, or 52.48% of the budget, an increase of 40.97% compared to the realization in 2012. See the discussion of the "Capital Investment" in Financial Review (Point V Realization of Capital Investment in Last Financial Year) "...

Source: Annual Report 2013, p.81

Allocation investment account for waste management and business lisencc (certification)



Realisasi Kinerja Tahun 2013 Dibandingkan dengan RJPP Tahun 2013-2015 dan RKAP Tahun 2013  
 2013 Performance Realization Compared to 2013-2015 RJPP and 2013 RKAP

Dalam Juta Rupiah | In Million Rupiah

Uraian	RJPP 2013-2015 Untuk / For 2013	RKAP 2013	Realisasi 2013 (Rakib)	Kenaikan/Penurunan Increase/Decrease (%)		Deskripsi
	1	2	3	3/2	3/1	
Perjanjian Barah	1.759.285	1.635.785	1.853.682	14,03	5,37	Net Sales
Debit Polisi Perjanjian & Jasa	794.694	698.291	723.598	8,11	(4,12)	Cost of Goods in Services Sold
Debit Perusahaan	1.189.281	1.096.715	1.192.575	0,44	(0,96)	Company's Expense
Investasi	789.194	47.8074	248.378	(47,92)	(58,93)	Investment
Labu Sebelum Debit Pajak	531.621	532.017	570.509	46,68	46,48	Income Before Tax Expense
Labu Bersih	392.975	392.592	572.489	45,00	46,42	Net Income
Total Aset	2.899.407	2.420.613	2.700.070	11,67	(5,77)	Total Asset
Modal Kerja	806.602	922.507	1.942.901	87,28	91,20	Working Capital

Dalam Juta Rupiah | In Million Rupiah

	Labu Tahun Buku 2009 Net Income for the Fiscal Year 2009	Labu Tahun Buku 2010 Net Income for the Fiscal Year 2010	Labu Tahun Buku 2011 Net Income for the Fiscal Year 2011		Labu Tahun Buku 2012 Net Income for the Fiscal Year 2012		
			Jumlah Total	Presentase Percentage	Jumlah Total	Presentase Percentage	
Cadangan	189.383	211.278	244.959	81,00	271.279	77,56	Reserve
Dividen	21.768	24.567	45.363	15,00	105.178	20,00	Dividend
Kemitraan	4.354	4.913	6.048	2,00	1.930	0,50	Partnership Program
Bina Lingkungan	2.177	4.913	6.048	2,00	6.830	1,77	Community Development
Tantern	-	-	-	-	675	-	Tantern
<b>Jumlah Labu Bersih</b>	<b>217.682</b>	<b>245.673</b>	<b>302.419</b>	<b>100%</b>	<b>385.892</b>	<b>99,83</b>	<b>Total net Income</b>

Source: Annual Report 2013, p.147

Allocation P/L comprehensive to CSR (Partnership Program and Community Development)

### Fundamental Financial Analysis using IRR and elaboration calculation

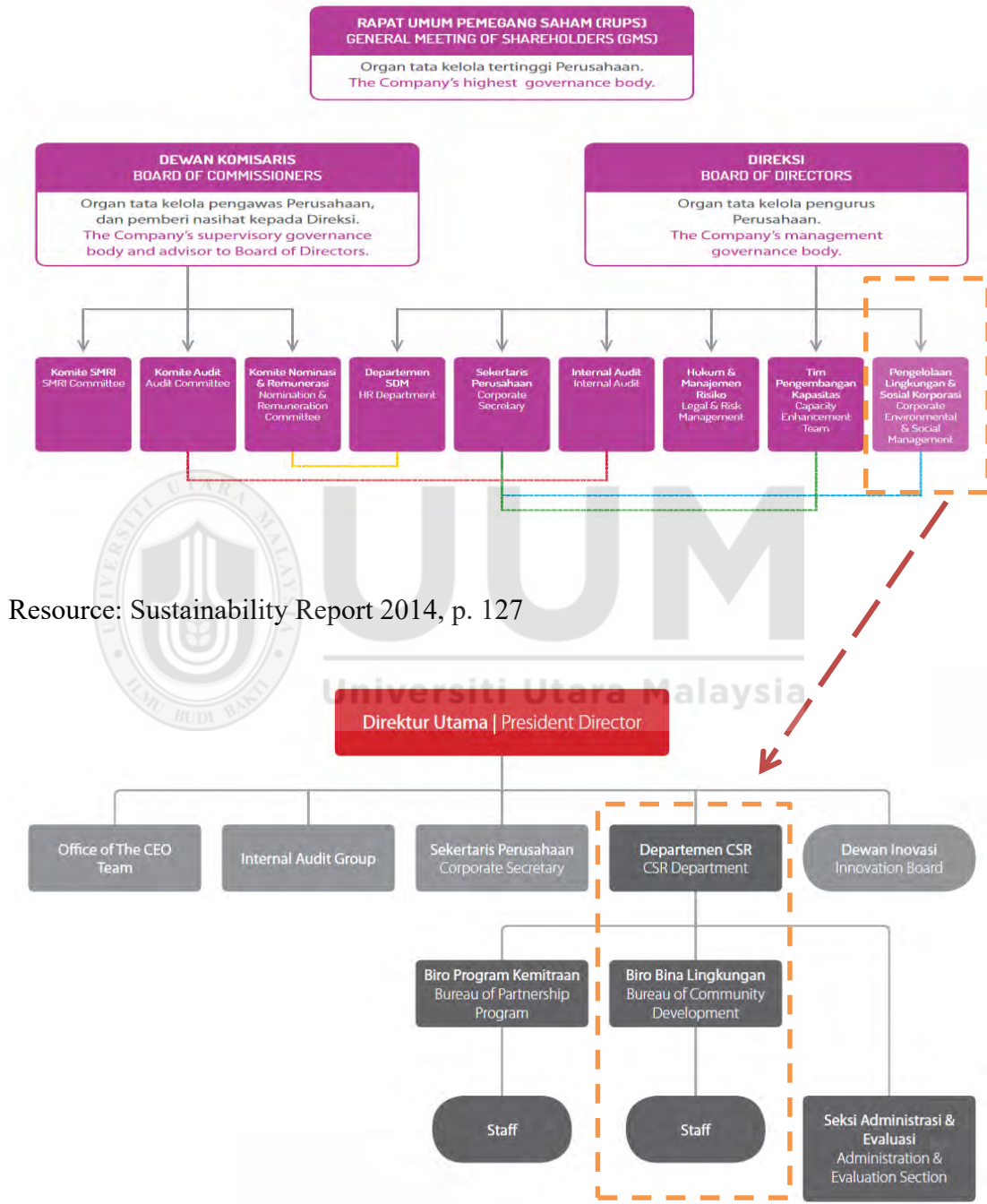
Company A did not publish the financial analysis on it investment on environmental aspect.

Company	Fundamental financial analysis	EP and EcP Ratios	Gradient performance to cost efficiency
B	NPV= IDR billions (not available)	EP is 3.238 times than EcP	Growth Gradient

# Appendix I

## Organization Structure

### Company A's Structure After Reorganization

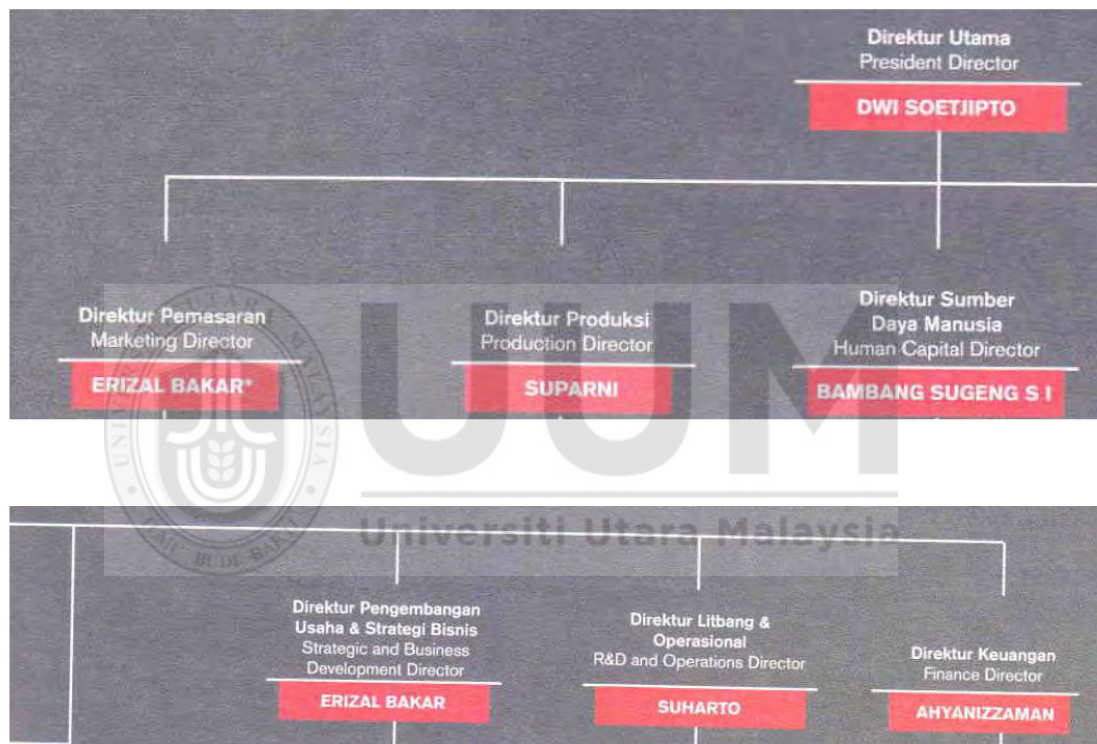


Resource: Sustainability Report 2014, p. 127

Resource: Sustainability Report 2014, p.89

Notes: 2013 Company A did reorganization. Here, Company separated CSR from externalities aspects (environmental and social related). Set Corporate Environmental and Social Management under BOD and set CSR Department under CEO. Thus, Company A has more complexity functions as the result of externalities-related.

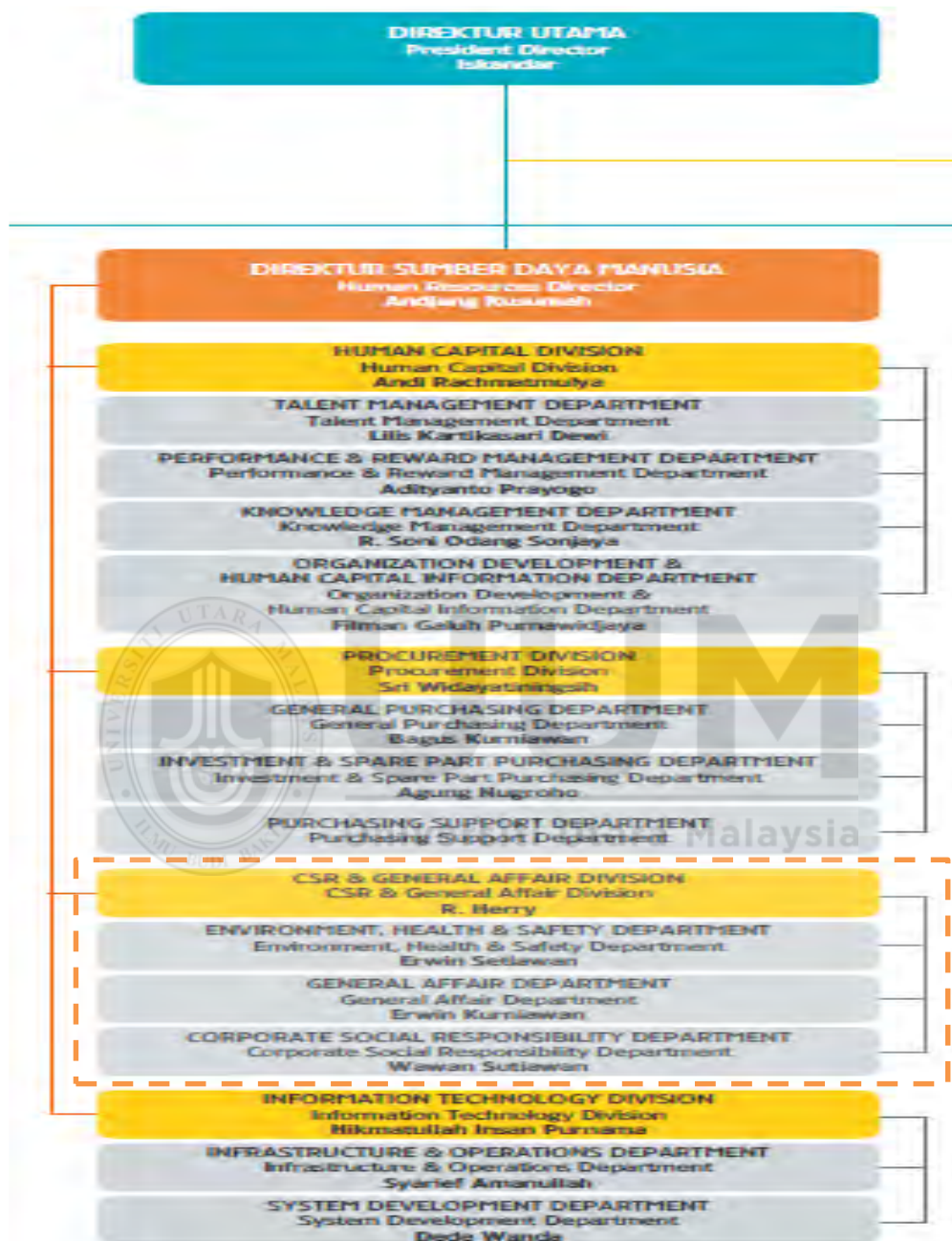
### CompanyA’s Structure Before



Resource: Sustainability Report 2012, page 14-15.

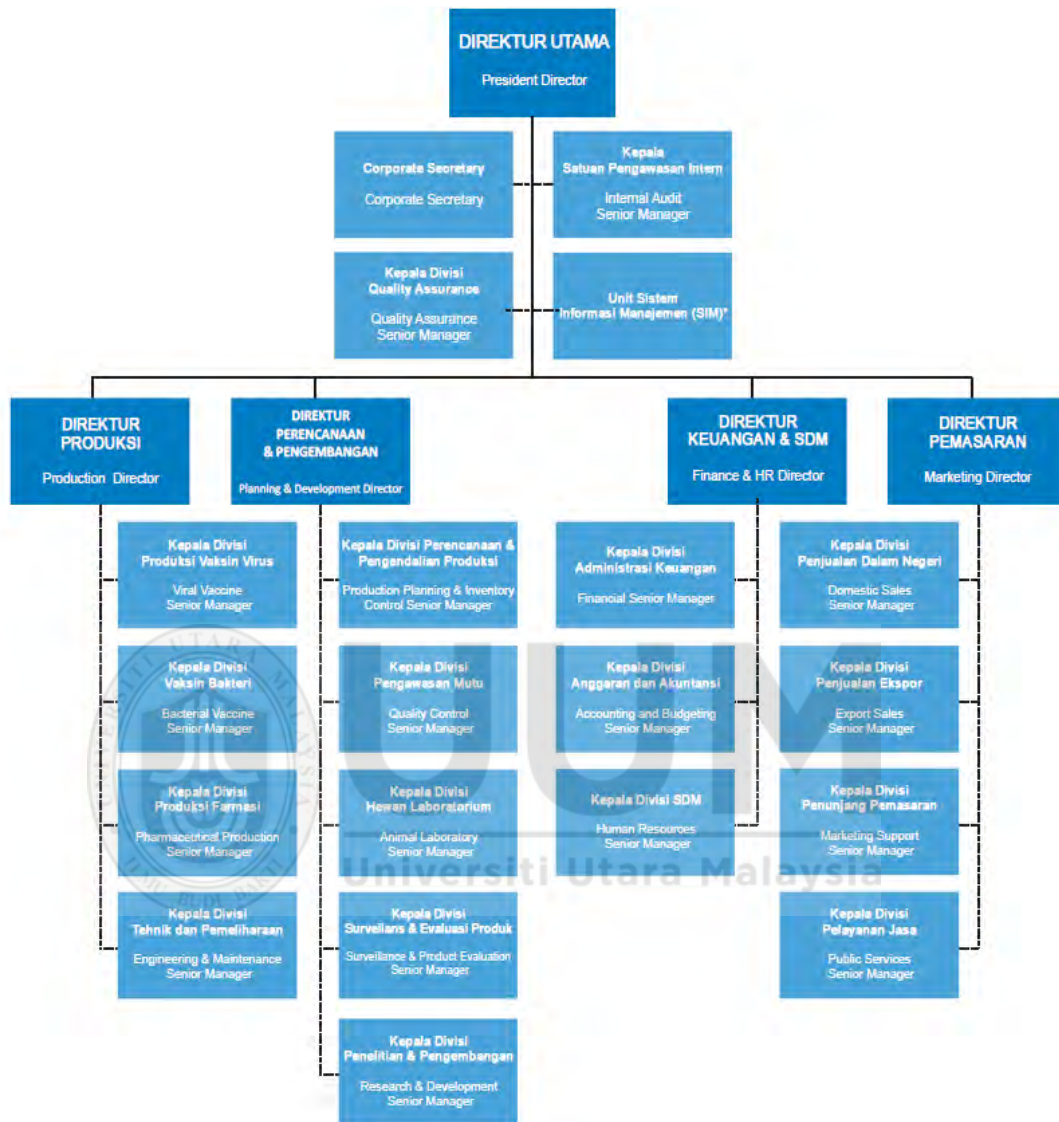
Notes: Company A before reorganization was concerned to conventional daily operational, such as marketing, production, human resources, strategic business, research and development, and finance functions.

## Company B's Structure After Reorganization



Resource: Annual Report 2013, p.31

## Company B's Structur Before Reorganization



Resource: Sustainability Report 2010, page 36.

Notes: Company B's structure after reorganization has a CSR and General Affairs Division under Human Resources Director.

## Appendix J

### Letter Approval for Visiting to Company

  
**INDONESIA PT Semen Indonesia (Persero) Tbk.**

Kepada Yth. : Ka. BIRO BINA LINGKUNGAN  
Perihal : Permohonan Penelitian

Kode Dokumen : R/5005/009  
Revisi : 0  
Tanggal : 02 Januari 2014  
Halaman : 1 dari 1

Tertampir kami sampaikan data mahasiswa permohonan Penelitian dari :  
**Universitas Utara Malaysia**

Nama mahasiswa : Sarah Yuliarini  
Jumlah mahasiswa : 1 (satu) orang  
Dalam rangka : Penelitian  
Jurusan : Bisnis  
Tanggal pengajuan : 09 Maret 2015 s.d. 20 Maret 2015  
Lama Penelitian : 1 (satu) bulan  
Materi Proposal Mahasiswa :

Gresik, 25 Februari 2015  
Hormat Kami  
Ka. Seksi Pelaksanaan Pembelajaran  
Ttd.  
Rahardjo, ST

Mohon konfirmasi atas permohonan kami,  
Mahasiswa tersebut : (  ) dapat dibantu (  ) tidak dapat dibantu  
Tanggal disetujui Penelitian : 09 Maret 2015 s.d. 20 Maret 2015  
Pembimbing yang ditunjuk :  
Nopegi : 818  
Nama pegawai : Slamet Mursidiarso  
Unit Kerja : Bina Lingkungan  
Jabatan : (  ) Ka. Biro (  ) Ka. Seksi (  ) Ka. Regu

Gresik, 26 Februari 2015  
  
( Slamet Mursidiarso )

08/03/2015 10:33

Universitas Utara Malaysia

se - Gedung Utama 5G, Jl. Veteran, Gresik 61122, Indonesia | T +62 31 3981731 | Fax +62 31 3981732

## Appendix K

### Validation English Translation

#### Validation on translation of verbatim transcription Company A

The greenhouse effect of PT. SI first become part of environmental pollution in the town of Gresik. Since 2009, environmental improvement requirements of the Ministry of Environment each year increase, but less than many energy-related accounting that have expertise in environmental assessment. Incidentally our current CEO has a background accountant. Very large investment for environmental management. Although many of the workers is a graduate of ITB, ITS (the prominent engineering universities in Indonesia). In 2014 company did not get the gold award, although there is always a improvement in process business. Currently being developed a new energy that does not depend on PLN (the state-owned electricity company). Actually, there is an advantage of the energy from waste recycling.

This translation is true and same as the meaning of the original language.

Malang, April 19, 2017

Brawijaya Language Centre  
University of Brawijaya, Indonesia

Head,



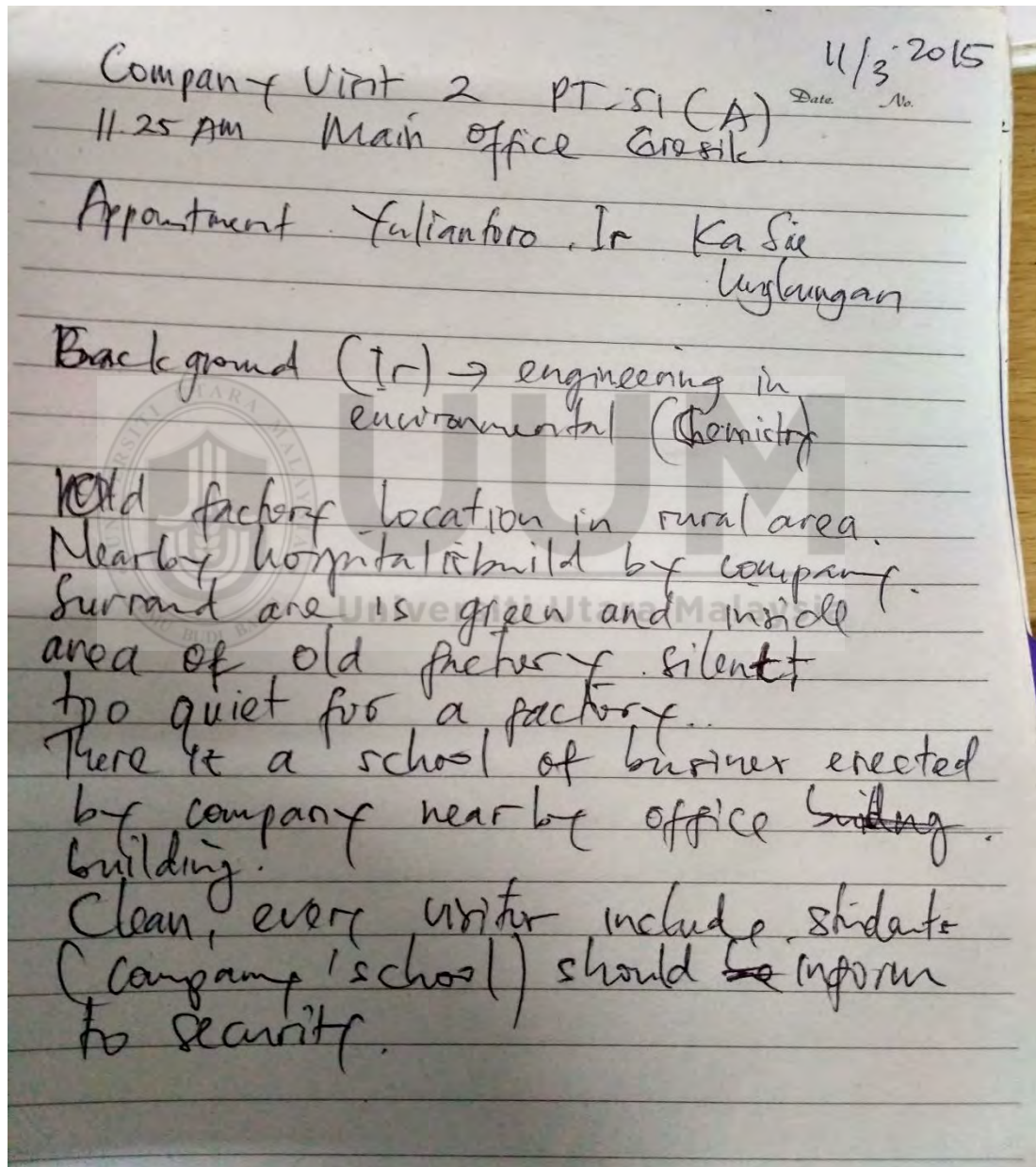
Dr. Sugeng Susilo Adi, M.Hum.

**The other validation of English translation on transcription put on each of the end of transcript.**

## Appendix L

### Observational Notes

#### Example of Observational Notes before Interview Session

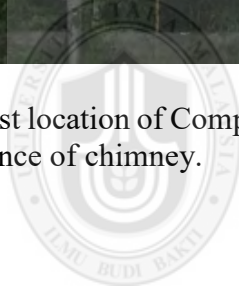


Notes were taken before interview session with CA.4 from Company A. It was supported with photograph of the plant sites.





The first location of Company A is covered by dense trees, however it cannot hide the chimney.



Universiti Utara Malaysia

## Summary of Observational Notes after Interview Sessions

(Triangulation with supporting data)

Num	Institutions or organizations	Time and Date	Interview with following position	Observation' Purposes	Observation' Aims related to company' EA practices	Outcome based on triangulation
1	Otoritas Jasa Keuangan or Indonesia Financial Service Authority	Conducted August 2013 and December 2015	ER.12 as Senior Specialist.	<p>Observation EA disclosure should be integrated with annual report.</p> <p>Meaning of EA accounts, Observation financial institutions through BI Regulation number 7/2/PBI/2005.</p> <p>List of CSR reporting companies "<i>Daftar perusahaan peserta PROPER</i>"</p>	<p>Conformation to CSR dept. on company integration reporting format.</p> <p>EA accounts inside corporate financial statement</p> <p>Environmental aspect for business license</p>	<p>Company A and B do integration reporting by publishing the annual report.</p> <p>Business motive related to EA is different between A and B.</p>

Num	Institutions or organizations	Time and Date	Interview with following position	Observation' Purposes	Observation' Aims related to company' EA practices	Outcome based on triangulation
		Conducted December 2015 and May 2016	ER.13 as Head of Sub-Bureau of Regulation of Non-bank Financing.	<ul style="list-style-type: none"> <li>Observation related to treatment in accounting.</li> <li>Observation Financial institution' role</li> </ul>	Conformation the corporate' legitimacy aspect.	Captured the emerge of EA practices for evaluation
2	Ministry of Environment and Forestry (KLHK)	Conducted January 2013 and March 2015	ER.14 as Head of Energy Division	<ul style="list-style-type: none"> <li>Observation of consistency of government policy related to environmental issues into corporations.</li> <li>Observation of cross-sectional regulation with other ministry,</li> </ul>	Corporation's compliance traces to the executive summary report and sustainability report.	Focus KLHK is PROPER ranking. There are regulations related to environmental aspect but not with accounting standard boards. Corporation is more proactive than preventive in reaction related to regulations

		Conducted March 2015	) ER.15 as Corporate assessment and compliance	Observation on KLHK assessment to corporations. -related is on KLHK only		Government uses the information for “ <i>tata ruang</i> ” or spatial area arrangement. The environmental authority of regulations is under KLHK only.
3	Ikatan Akuntan Indonesia (IAI) or Institute of Indonesia Chartered Accountants	Conducted February 2013 and June 2015	) ER.16 as Head of Accounting Technical	Observation on latest Indonesian GAAP related to EA accounts	) getting internal purposes related to environmental accounts. ) Internal policy in annual report related to environmental accounts	Not specific reporting asked by IAI, thus internal management takes own discretional accounts
		Conducted June 2015	) ER.17 as a senior accountant and a honor member of IAI Surabaya	Observation related to EA principle accounting ) Additional reporting or exceptional of financial statement purposes can	) How corporation follow regulatory laws and Indonesian GAAP at once.	Supporting report for government regulations.

4	Company A	May 2015	CA.1 as Head of CSR	<ul style="list-style-type: none"> <li>  Observation Organization philosophy related to environmental aspects.</li> </ul>	Seeking to whom company most compliance	Company focusing on external stakeholder.
		June 2015	CA.2 as Head of Production	<ul style="list-style-type: none"> <li>  Proseses of production identify of where the environmental aspects are included or happened.</li> <li>  Visit and see inside plant sites to take picture footage.</li> </ul>		Performance measurement approach by each company.
		May 2015	CA.3 as IT staff	Proseses of transfer data from production to accounting and department-related		Internal management for providing data and performance evaluation.
		May 2015	CA.4 as Head of the Environmental monitoring section	Cooperation with third party to support company's plan related with environmental conservation.		Third party engage with company for long-term periode
		June 2015	CA.5 as IT staff	Observation to how standard for general	Refers to information flowing from CSR	EA accounts from each company.

				requirement to incorporate the environmental aspect.	departement to accounting depart and track down from corporate's reporting.	
5	Company B	May 2015	CB.6 as Manager of Public Relation and Internal Policy	Observation to organization philosophy on environmental aspects and incorporated in system.	Seeking which document are most related to environmental aspect	financial system do not fully integrated
		May 2015	CB.7 as Staff of PR	Observation to Policies on report the environmental aspect		Compliance to Ministry of SOE, Ministry of KLHK and local government.
		June 2015	CB.8 as Head of CSR and General Affairs	<ul style="list-style-type: none"> <li>) General policies on environmental-related costs, performance measurement, disclosure policies-related.</li> <li>) General policies on the flow of information related with the environmental aspect.</li> </ul>		Company focusing on social image

May 2015	CB.9 as Head of Bina Lingkungan (Community partnership)	)Observation accounting for CSR )Observation to find another reporting for environmental aspect.		
June 2015	CB.10 as Staff of CSR and General Affairs	) Environmental-related costs, performance measurement, disclosure policies-related. ) The flow of information related with the environmental aspect.		
June 2015	CB.11 as Staff of Bina Lingkungan (Community partnership)	Observation which is more important between social aspect and environmental aspect	Seeking information the most credential for company in reporting	Environmental aspect engages with social aspect.

## Appendix M

### Member Checking

#### An example of member checking as part of validation of evidence

Dear Sarah Yuliarini

Hereby I confirm that that the information appearing in the transcript is true.

Sincerely yours,

Non-Bank Financial Industry (NBF) Supervision Department 1B  
Otoritas Jasa Keuangan  
Menara Merdeka Tower, 21th Floor  
Jalan Budi Kemuliaan I No. 2, Jakarta Pusat 10110  
T: +62 21 2960 0000 ext 8263  
F: +62 21 2957 3861

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**From:** Sarah Y [mailto:[sarahyuliarini@gmail.com](mailto:sarahyuliarini@gmail.com)]  
**Sent:** 03 September 2016 16:09  
**To:**  
**Subject:** Fwd: File Question and Answer about EA guidelines



Member checking to OJK-RI answered via email and the other participants answered via mobile.