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The Role of Accountants in Encountering Climate Change and Its Impact on the Industrial Sector Companies Sustainability: A Conceptual Model

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Abstract

Climate change is a big issue and impacts the business sustainability of industrial companies that depend on fossil fuel energy. The current climate change condition is still an externality that has not been considered by the government, private, and community sectors. Accordingly, it has not been fully anticipated and realized by the three sectors. Internalization of climate change issues has not been reflected in the financial statement accounts due to the difficulty in measuring the potential of climate change to the company's operations in the future. One of the criteria used by accountants in determining whether information should be reflected in the financial statements is materiality. An information has materiality if the negligence of the information in the financial statements will change the decisions taken. This research is expected to contribute ideas on how an accountant handles climate change issues in financial reports by looking at the applicable Indonesia Accounting Standards (PSAK). It aims to reflect climate change issues in financial statements. The research method used is narrative analysis to describe the past, current, and other events. Finding the causes of climate change and its impacts will contribute to the accounting profession tackling climate change issues.

Keywords: climate change, environmental accounting, financial statement, materiality

Introduction

One of the factors that cause climate change is the increasing concentration of greenhouse gases in the atmosphere due to fossil fuels, namely coal and oil. The use of fossil fuels is also one factor that causes global warming. According to Choi et al. (2013), the issue of climate change is considered a political and economic issue. It becomes a challenge for every business entity to contribute to reducing the carbon emissions they produce. Irwhandoko (2016), stated that industrial activity also increases the concentration of greenhouse gases in the atmosphere. As a developing country, Indonesia is not required to disclose emissions; nevertheless, Indonesia's participation is needed to achieve the United Nations Framework Convention on Climate Change goals. The carbon emissions disclosure as an accounting treatment in presenting the use of carbon for company activities is expected to prevent and reduce emissions.

Without efforts from the government, private sector, and society to change the humans way of life that depends on fossil fuels with high carbon content, in the next few decades, a tragedy on the horizon might occur (Anindita, R., & Hamidah, 2020 ; Gibassier, D., Michelon, G., & Cartel 2020). Currently, local and international research on the climate change issue in financial reports has not been accommodated (Csutora, M., & Harangozo, 2017 ; Hopper, 2019) on accounting rules. It means there is no specific standard that regulates how to disclose the issue of climate change in financial reports. Accountant contributes to increasing their role and responsibility for recording transactions, making financial reports, estimating the impact of business activity on climate change, and disclosing this impact in financial statements.

An accountant is known as a profession responsible for recording financial transactions and issuing financial statements. The problem of climate change that threatens all human life requires an accountant to be active in dealing with climate change. They must understand the issue of climate change, starting from the causes of climate change to its impact on economic activities. The condition that has occurred so far is that the issue of climate change is not reflected in the financial statements because the accountant does not consider it.

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Literature Review

Major Causes of Climate Change

Climate change that is currently happening is the impact of the carbon dioxide (CO2) gas accumulation in the atmosphere. CO2 gas absorbs infrared contained in the sun's rays. The ability of CO2 gas to absorb infrared heat is the leading cause of the increase in global temperature (Domino et al., 2015; Kumarasiri & Gunasekarage, 2017). This condition is called the greenhouse effect. The heat from the infrared absorbed by CO2 is trapped between the earth and the atmosphere. Natural processes push the release of CO2 into the atmosphere, such as volcanic eruptions. This cycle is a natural carbon cycle that will make the release of CO2 into the atmosphere go down to earth and not accumulate in the atmosphere layer (Bui & Fowler, 2019; Domino et al., 2015).

In addition, the natural carbon cycle also occurs from the photosynthesis process of plants that require CO2. Plants will release oxygen into the atmosphere from this process. All humans and animals need oxygen in their respiratory activities, releasing CO2. The photosynthesis process will pull back CO2 from the results of human and animal respiration and process it into oxygen. This process continues so that CO2 levels do not accumulate in the atmosphere through the photosynthesis process. Many activities carried out by humans have caused high levels of CO2 into the atmosphere and cannot be processed through the natural carbon cycle. It increases the global temperature. Plantation activities carried out by burning forests will exacerbate the situation because the release of CO2 levels will be higher than if using heavy equipment. Each power plant construction will impact increasing CO2 accumulation in the next few decades. It is because the power plant will operate and have an economic life, not in years but decades.

Many activities by humans have caused the high levels of CO2 in the atmosphere and cannot be processed through the natural carbon cycle, increasing global temperature. In fact, human activities from the 1950s to the present have contributed to the accumulation of CO2 and encouraged climate change (Sitorus, 2016;Werasturi, 2017). Human lifestyles that over-exploit nature have contributed to climate change (Csutora & Harangozo, 2016; Zhang et al.,2016). This exploitation is by consuming excessively and using cheap means in consuming it. Based on Pradita's (2017) research, the Kyoto Protocol was established to protect the earth from increasing concentrations of greenhouse gases, not to worsen the earth's climate pattern..

The Impact of Climate Change on Economy and Carbon Pricing Implementation

Climate change not only destroys environmental ecosystems but also destroys the economic order. Two risks threaten the economy during climate change: physical and transition risks. Physical risks from climate change are closely related to the destruction of production assets, infrastructure destruction, and other uninsured damages (such as forest fires and the loss of animal and plant diversity). Meanwhile, the risk of transition is associated with strategies to reduce carbon emissions that are not well planned. The two risks are linked and interact (Haslam et al., 2014; Kumarasiri & Jubb, 2016). Physical risks are triggered by an increase in extreme weather, such as heavy rainfall, heatwaves, and strong winds, which have the potential to damage various types of assets and infrastructure. Damage to production assets can occur when multiple machines operate under extreme weather conditions. This condition can shorten the use of machines so that there will be an increase in annual depreciation expenses. In dealing with this, the company can bear the costs by increasing the goods and services selling price or combining both.

The degradation of a machine faced by the producers increases their burden and decreases the number of goods produced from the machine. Some of the accounts affected on the balance sheet are intangible and tangible assets, inventories, receivables, cash, prepaid expenses, equity, accruals, and liabilities. On the other hand, in the income statement, accounts affected by the impact of climate change are sales, energy expenses as part of material expenses, personnel expenses, selling expenses, insurance expenses, non-operating income, depreciation and amortization expenses, disposal expenses, expenses interest, certain costs, and income. Several studies reveal that climate change will impact balance sheet financial statements and income statements (Farouk & Jabeen, 2018; Wrana & Diez, 2018).

The government can prevent physical damage by applying carbon pricing. It is a scheme to impose additional burdens on parties that produce CO2 emissions from an activity. The greater the CO2 emissions from an activity, the greater the burden that must be paid. Carbon pricing will charge the process of CO2 emissions into the atmosphere. CO2 emissions will be subject to consequences in the form of additional burdens that must be paid by the party which makes emissions. The carbon pricing implementation also aims to encourage the private sector and the public to reduce dependence on fossil fuels and switch to renewable energies without carbon emissions.

Carbon pricing is a way that the government can take to achieve the target of limiting global temperature increases that have been agreed upon in the Paris Agreement. However, besides meeting the targets, carbon pricing also has another goal, namely internalizing the climate change issue in the company's financial statements. In achieving this goal, accountants play a significant role in internalizing climate change issues in the financial statements. Carbon pricing can be applied in two methods: carbon tax and emission trading systems (ETS), Carbon tax as a method to reduce CO2 emissions will fail if the imposed rate is too low. Low rates do not encourage producers and consumers to switch to renewable energy sources. In promoting the carbon tax method and reducing CO2 emissions into the atmosphere, tax rates need to be applied progressively. Thus, the greater the CO2 emissions, the greater the tax rate applied to calculate tax. By introducing a carbon tax, Indonesia becomes one of the countries that will implement it first. Indonesia is the first mover of carbon taxes globally, especially from emerging economic powers (Febrio Kacaribu, 2021).

Emission trading systems (ETS) provide quotas from the government to each business entity. As in the carbon tax method, each entity is given a quota to produce CO2 emissions without being burdened. If an entity requires an additional carbon quota, they can buy from another entity that still has a quota so that a sale and purchase transaction of CO2 allotment will occur. From this transaction, the market price of CO2 will be formed. An increase in CO2 buying and selling transactions will encourage a carbon market that brings together those who need a quota with those who have a quota. ETS implementation can be distorted if short-term business and political interests' conflict with its primary goal of reducing carbon levels. The success of ETS implementation depends on all business actors to complete the principles inherent without outrageous profit motivation (Nartey, 2018; Zhang & Xu, 2015). Carbon pricing implementation can reduce carbon emissions and potentially eliminate the competitiveness of a product. As a result, there is a decline in the gross domestic product (Khan, 2014; Mateo-Márquez et al., 2019). Recently, Indonesia has not implemented a carbon pricing mechanism to control carbon emissions.

The Role of Accountant in Encountering Climate Change

An accountant has been known as a profession responsible for recording financial transactions and issuing financial reports for various organizations. Accountants cannot remain silent in dealing with climate change problems that threaten all human life. They must understand the issue of climate change, starting from the causes of climate change to its impact on economic activities. This understanding helps accountants to think of its contribution to limiting global warming. Accountants need to enlarge their roles and responsibilities as recorders of transactions and issuers of financial statements. They are also required to estimate business activity's impact on climate change and disclose these impacts in financial statements.

Accountants in the company pay more attention to business sustainability in the Corporate Sustainability Report. They maintain the synergy of saving Profit, People, and Planet, with Triple Bottom Accounting. Accountants know and understand that the activities carried out by construction companies harm people, both inside and outside the company and the planet; nevertheless, they are powerless. Thus, the dilemma is which one should come first, going concern or the business sustainability. In avoiding the threat of climate change, especially for construction and property business players, it can use environmentally friendly materials. Since accountants know the contents of financial statements, which are the estuaries of all company operational activities, accountants should be committed to maintaining environmental balance. Mardiasmo, in the international webinar themed "Optimizing Sustainability Governance through a Single Set of High-Quality Global Sustainability Reporting Standards," explained that accountants must contribute to global efforts by reducing carbon emissions. Accountants are considered to have the right skill set to mitigate climate change through sustainability reporting (April, 2022).

Undefined Climate Change Issues in Financial Statements

Undefined climate change issues are because accountants do not consider this issue in their financial statements. Therefore, the consequences are: first; the company does not consider the impact of climate change from its production activities. Hence production activities cannot be categorized as sustainable production. Second, by not considering the climate change issue, product prices do not reflect the impact of ecosystem damage that triggers climate change. Third, the lack of description of ecosystem damage on product prices ultimately makes consumers uncritical in consuming products. As a result, sustainable consumption is not achieved. Fourth, the absence of sustainable production and consumption makes the climate change issue an externality that both producers and consumers do not consider.

Research at the global level has not focused on including climate change issues in financial reports (Csutora & Harangozo, 2017; Hopper, 2019). Explicitly the issue of climate change is not accommodated at the local level accounting rules through Indonesia Accounting Standards (PSAK) or at the international level through International Financial Reporting Standards (IFRS). In other words, there is no specific standard that regulates how to disclose the issue of climate change in financial reports.

Conceptual Framework

Based on the literature review in the previous section, the conceptual model is as described in Figure 1.

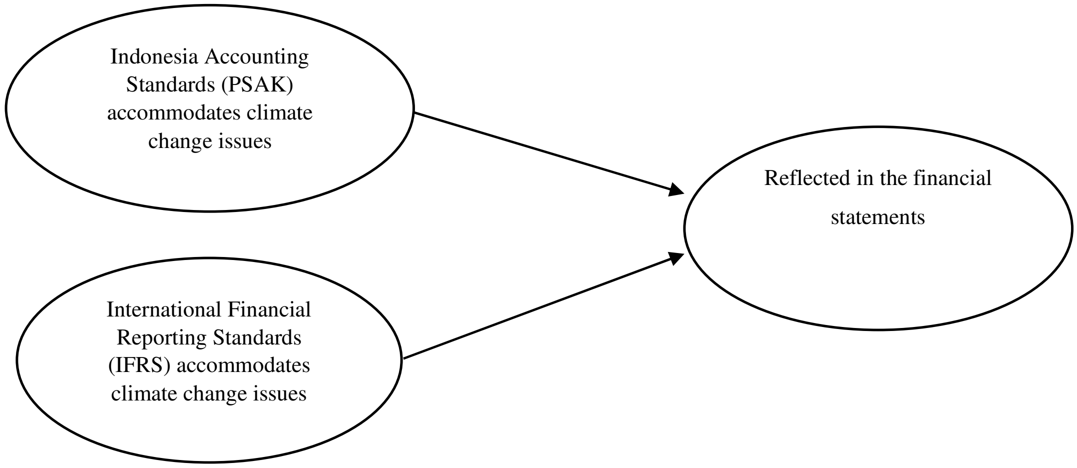

Figure 1. Conceptual Model

Based on the analysis, it can be determined whether the current Statement of Financial Accounting Standards (PSAK) and International Financial Reporting Standards (IFRS) can accommodate the issue of climate change so that it is reflected in the financial statements. Thus, the preposition proposed in this study are:

1. Indonesia Accounting Standards (PSAK) accommodates the issue of climate change reflected in financial statements.
2. International Financial Reporting Standards (IFRS) accommodates climate change issues reflected in financial reports.

Research Method

The research method used is narrative analysis to describe the past, current, and other events (Patten & Shin, 2019). Finding the causes of climate change and its impacts will contribute to the accounting profession tackling climate change issues. The narrative analysis begins by identifying the triggers of climate change based on research under the theme of environment and climate change. Furthermore, research with the same theme will be selected to investigate the impact of climate change on environmental ecosystems. Meanwhile, to identify the accountant's contribution, research related to the effects of climate change on economic activities is contained as material for analysis.

Conclusion and Future Research

Climate change is a big issue that is currently faced by humankind and has not been accommodated in the financial statements, both in the balance sheet and income statement. In economic activities, climate change will significantly impact the sustainability of the company's business. However, the current condition shows climate change is still an externality that has not been considered by the government, private, and community sectors. An accountant is not only the company's transaction recorder and issuer of financial statements but can also play a more significant role in climate change issues. This role requires accountants to internalize climate change issues in financial reports. Accordingly, financial statements users can consider climate change issues in their decisions. The climate change issue will impact the business sustainability of the fossil fuel energy industry and other industries that depend on it. When there is awareness regarding this, the climate change issue should ideally be in the form of disclosure in financial statements and reflected in financial statement accounts. Future research related to the role of accountants in internalizing climate change issues in financial reports can be focused on methods that accountants can use to quantify the impact of damage from CO2 emissions in financial statements.

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