THE IMPORTANCE OF IMPLEMENTING ENVIRONMENTAL MANAGEMENT ACCOUNTING IN MANUFACTURING COMPANIES IN INDONESIA

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Abstract

This research aims to determine how environmental management accounting is implemented and essential in manufacturing companies. Environmental management accounting has a vital role in mediating environmentally friendly innovation. The compliance aspect significantly affects the implementation of environmental management accounting. Environmental management accounting can help management to improve the company's environmental performance to support sustainable development. Therefore, manufacturing companies need to pay attention to the importance of environmental management accounting in creating environmentally friendly innovations and improving the company's environmental performance to support sustainable development. The research method used is qualitative, with the author conducting a literature study by collecting data from various articles and several research journals and then analyzing it in more depth related to the research. In this research, it was concluded that applying Environmental Management Accounting in companies has many benefits and relevance in sustainable business.

Keywords: Environment Management Accounting, Manufacturing Companies, Environmental Costs

INTRODUCTION

Phenomena related to environmental damage have become an issue of global concern, and environmental damage is becoming more widespread daily. Many aspects cause increasingly severe environmental damage (Haryanti et al., 2022). One sector that causes environmental damage is the industrial sector (manufacturing companies). On the one hand, the industry can have a detrimental impact on the environment. Still, on the other hand, the industrial world can impact a country's economic development. Current industrial development is oriented towards a balance between environmental, economic, and social aspects. The main operational activity carried out by this industrial sector is production. Production is the process of raw materials or raw goods into semi-finished or finished goods. With a production process, a manufacturing company can run.

Company or industrial development has specific goals to meet stakeholder needs. This goal can be achieved if the company can interact well with the environment. The current perspective regarding company development is not only focused on maximum profits but also on social and environmental welfare (Aditama, 2020). Many environmental problems are caused by the operational activities of manufacturing companies that carry out their production. Environmental damage occurs due to a poorly managed waste disposal system from the production process. Environmental problems with pollution caused by waste, for example, many companies have stopped operating due to environmental problems polluted by these companies. Environmental management accounting is applied in various companies to produce a quantitative assessment of the costs and impacts of environmental protection.

The application of environmental accounting also aims to find out how much environmental costs are incurred in managing waste by using an accounting system so that it can minimize the costs incurred and control responsibilities in protecting the surrounding environment. As well as being used to assess the total environmental costs associated with production activities and products, process inputs in the form of raw materials, energy, water, and outputs in the form of pollution products, water waste, and land waste. Environmental accounting can also be used to track an organization's environmental performance to make it more measurable. Environmental performance is a result that can be measured from the environmental management system, which is related to the control of

environmental aspects. With environmental management accounting (EMA), companies can identify, determine, and allocate costs accurately to a product or process to make management efficient.

Environmental Management Accounting is managing the environment and an organization's economic performance by developing and implementing accounting systems and practices that suit the company's needs (Sari and Gantino, 2022). Environmental accounting needs to be applied in a system implemented for a company or organization because this concept is closely related to current environmental conditions apart from protecting and preserving the environment. In general, the advantage of using the concept of environmental management accounting for a company is the ability to minimize the environmental problems it faces to increase the efficiency of environmental management by assessing environmental activities from the perspective of costs, benefits, and effects (Rahim, 2020).

Despite the importance and benefits of Environmental Management Accounting (EMA), adopting and implementing EMA practices still needs to be improved in companies in many countries, especially in developing countries. Most managers must know the benefits of improving environmental performance and reducing environmental impacts. Therefore, many opportunities to reduce environmental costs are missed. It is due to low environmental awareness, lack of influential role of professional bodies, lack of stakeholder pressure, weak environmental legislation, and difficulties companies face.

REVIEW OF LITERATURE

Definition of Environmental Accounting

Adopting environmental management accounting has become imperative due to the limited categorization of environmental costs as a singular overhead cost inside the conventional management accounting system (L. Chen et al. 2021). Environmental accounting is part of the accounting field that focuses on companies' social and environmental problems. Here, accounting requires environmental disclosure (environmental costs) and measuring environmental performance. The central/important

function of environmental accounting is to reveal environmental costs to stakeholders. Reporting environmental costs allows stakeholders to be motivated to identify ways to reduce environmental costs or avoid these costs to improve environmental quality.

Environmental accounting focuses on recording, measuring, reporting, and analyzing financial activities related to an organization's environmental impact. Therefore, companies must provide information about how company management is accountable to owners for using economic resources entrusted to them. The publication of environmental accounting results will be functional and meaningful for companies in fulfilling their accountability and transparency for stakeholders, which simultaneously is very important for ensuring the evaluation of environmental conservation activities.

Environmental accounting based on its stakeholders can be differentiated into environmental financial accounting and environmental management accounting. The discussion of environmental financial accounting includes calculating environmental costs, profit or loss on business investments that pay attention to the environment, and the company's obligations to the environment. Environmental financial accounting refers to a country's regulations, laws, and applicable international standards, but reporting is still voluntary to external stakeholders. Discussion of environmental management accounting includes developing and implementing appropriate management control systems related to the environment and disclosing activities related to environmental costs in the company's business strategy.

According to Latan et al. (2018), many managers need more awareness regarding the advantages of enhancing environmental performance and reducing environmental impacts. It is important to note that managers, in addition to their primary objective of cost reduction, are responsible for mitigating the environmental consequences of their organization's operations. Furthermore, avoiding detrimental environmental effects necessitates access to environmental cost data about the company's operations.

Definition of Environmental Costs

According to Hasen (2015), environmental costs are costs that occur due to poor environmental quality or poor environmental quality that may occur. So, environmental

costs are related to preventing, detecting, and correcting environmental degradation. With this definition, environmental costs can be classified into four categories.

1. Environmental Prevention Costs

   These costs are for activities to prevent the production of waste and rubbish that can damage the environment. Examples of prevention activities are evaluating and selecting suppliers, evaluating and selecting tools to control pollution, designing processes and products to reduce or eliminate waste, training employees, studying environmental impacts, auditing environmental risks, conducting environmental research, developing environmental management systems, recycling remanufacturing products, as well as obtaining ISO 14001 certification.

2. Environmental Detection Costs

   These costs are for activities to determine that the company's products, processes, and other activities meet applicable environmental standards. Examples of detection activities are audits of environmental activities, inspection of products and processes (to ensure they are environmentally friendly), development of environmental performance measures, implementation of pollution tests, verification of suppliers' environmental performance, and measurement of pollution levels.

3. Environmental Internal Failure Costs

   These costs are for activities carried out due to the production of waste and rubbish but not disposed of in the external environment. Thus, internal failure costs occur to remove and process waste and waste when it is produced. Internal failover activities have one of the following objectives:

   a. Ensure that the waste and rubbish produced is not disposed of into the external environment or

   b. Reducing the level of waste disposed of so that the amount does not exceed environmental standards. Internal failure activities include equipment operation to reduce or eliminate pollution, processing, and disposal of toxic waste, maintenance of polluting equipment, licensing facilities to produce waste, and recycling of scrap materials.

4. Environmental External Failure Costs

This fee is for activities carried out after releasing waste or rubbish into the environment. Realized external failure costs are costs experienced and paid by the company. Unrealized external failure costs or social costs are caused by the company but are experienced and paid for by parties outside the company. Social costs can be further classified as:

a. Costs originating from environmental degradation
b. Costs related to adverse impacts on property or public welfare. In these cases, the costs are borne by other parties, not the company, even though the company causes them. Examples of realized external failure costs are cleaning up polluted lakes, cleaning up spilled oil, cleaning up polluted land, inefficient use of raw materials and energy, settlement of personal accident claims from environmentally unfriendly work practices, settlement of property damage claims, land renewal to its natural state, and elimination of sales due to poor environmental reputation.

Definition of Environmental Management Accounting

Environmental Management Accounting is the result of the development of the scientific field of Environmental Management and a series of economic performances of a company, as well as its application of the appropriate environment in the relationship between the Accounting System and its practice. The main problem with environmental management accounting is that we need a standard definition of environmental costs. It depends on a wide range of interests, including various costs, for example, disposal or investment costs and, sometimes, external costs (i.e., costs incurred outside the company, mainly to the general public). Of course, this also applies to the benefits of the company's environmental activities (environmental cost savings). Environmental management accounting has various benefits for organizations in managing and reducing the environmental impact of their business activities.

The function and role of environmental accounting are divided into two forms, namely:

1. Internal Functions

   Internal functions are functions related to the internal parties of the company itself. Internal parties run the business, including consumer households, production households, and other services. The dominant actor and factor in this internal function is company leadership because the company leader is the person who is responsible for making every decision and determining every internal company policy. As with only corporate environmental information systems, internal functions make it possible to measure environmental conservation costs and analyze the costs of environmental conservation activities effectively, efficiently, and by decision-making. In this internal function, it is hoped that environmental accounting will function as a business management tool that managers can use when dealing with business units.

2. External Function

   External functions are functions related to aspects of financial reporting. (SFAC.No1) explains that financial reporting provides valuable information for investors, creditors, and other users in making rational investment, credit, and similar decisions. Such information must be comprehensive for those who have a rational understanding of business and economic activities and are willing to study information rationally. (SFAC.No1) explains that financial reporting provides valuable information for investors, creditors, and other users in making rational investment, credit, and similar decisions.

In this function, an essential factor that companies need to pay attention to is the disclosure of the results of environmental conservation activities in the form of accounting data. The information they disclose is a quantitatively measured result of environmental conservation activities. It includes information about a company's economic resources, claims to these resources (a company's obligation to transfer resources to other entities or capital owners), and the effects of transactions, events, and conditions that change economic resources. And claims to those sources. The external function gives the company the authority to influence stakeholders' decision-making, such as customers, business partners, investors, residents, and administration. Therefore, companies must provide

information about how company management is accountable to owners for using economic resources entrusted to them. It is hoped that the publication of environmental accounting results will be functional and meaningful for companies in fulfilling their accountability and transparency for stakeholders, which is very important for ensuring the evaluation of environmental conservation activities. There are several ways to disclose environmental responsibility information. Firstly, presenting environmental information through "disclosure can be done by making an overview of company activities related to efforts to preserve the environment, the results of independent party assessments related to the entity's compliance with environmental sustainability, secondly reporting environmental responsibility as well as can be presented in core finance, for example, equipment provided to reduce environmental pollution can be presented as fixed assets. (PSAK, 2016, Revised 2007) Paragraph 11 states, "Fixed assets are acquired for safety or environmental reasons. Acquisition of such fixed assets, which does not directly increase the future economic benefits of an existing fixed asset, may be necessary for the entity to obtain future economic benefits from other assets". Thirdly, costs incurred to protect the environment from pollution can be considered expenses. The income statement (Ikhsan, 2009) states that Environmental Management Accounting has two types of components produced, namely as follows:

1. Physical Environmental Management Accounting (PEMA)

   PEMA is used by internal management as a tool to address environmental impacts expressed in physical units such as electricity use, which is measured in kWh. EMA pays special attention to physical information relating to the flow of energy, materials, water, and waste because the cost of purchasing materials can be a significant cost driver and many of an organization's environmental impacts are directly related to the use of resources and waste.

2. Monetary Environmental Management Accounting (MEMA)

   MEMA expands its use in conventional management accounting to address environmental aspects of corporate activities expressed in monetary units. MEMA assists problem-solving in identifying, discovering, and treating environmental costs and associated revenues (or cost savings). It can be used as a basis for improving environmental performance. MEMA focuses on the financial aspects of company

activities, which impact the environment and benefits in setting the desired goals and targets so that they are achieved.

By dividing environmental management accounting into PEMA and MEMA, organizations can take a more integrated approach to managing their environmental impacts from a physical and financial perspective. It can help them make more sustainable decisions and better measure environmental performance.

RESEARCH METHOD

The research method used is qualitative, with the author conducting a literature study by collecting data from various articles and several research journals, then analyzing it in more depth, which is related to the research. Describe the transfer pricing method as a tool for tax avoidance in multinational companies.

RESULTS AND DISCUSSION

PEMA is an application of physical environmental management accounting. At the same time, MEMA is an application of environmental management accounting, which focuses on the monetary or costs required and budgeted for the implementation of EMA. PEMA and MEMA must be assessed separately because not all companies will implement both. Manufacturing SMEs do not focus on the monetary aspects of EMA as they may be more involved in physical and environmental-related activities without concentrating on the costing process. As mentioned, (Jalaludin, 2011), the role of accounting is not considered necessary in supporting company EMA, especially activities related to the environment. Therefore, environmental performance may not be improved. EMA practices involve tracking, tracing, and treating costs, revenues, and savings that occur in connection with the company's environmental-related activities.

The failure to implement the EMA properly is undoubtedly caused by obstacles that need to be explored so that solutions can be found to prevent or reduce the obstacles that prevent the implementation of the EMA from being appropriately implemented. These findings also show that financial constraints are the main obstacle to the development of

EMA in manufacturing SMEs. There needs to be more environmental knowledge (concerning actual costs and benefits), and skills also limit the integration of environmental issues into accounting systems and practices. Finally, this study finds that the absence of guidance for EMA also constitutes a barrier to integrating environmental issues into existing accounting systems and practices. It is in line with (Setthasakko, 2010), who argues that the lack of guidance on EMA causes difficulties in collecting, identifying, and skills and limits integrating environmental issues into accounting systems and practices. Poor implementation of EMA can occur due to several obstacles, including:

1. Attitude Barriers

   Low priority of accounting for environmental costs Resistance to change.
2. Financial Barriers

   Resource constraints efficiency financial considerations Environmental costs are not considered significant.
3. Information Barriers

   Difficulty in accumulating or allocating environmental costs, low physical environmental uncertainty.
4. Institutional Barriers

   Lack of institutional pressure, Stakeholder power, Shareholder power.
5. Management Constraints

   Little incentives are provided to manage environmental costs, Lack of environmental responsibility and accountability, and Lack of integration of the environment into strategic planning.

Every action taken by a company certainly has a reason or purpose in the form of encouragement that influences the company to act. This needs to be known so that the incentives or factors that influence the implementation of EMA can be paid more attention to and improved. From the results of research on factors that influence EMA practice, it was found that coercive factors have a significant influence on EMA practice. With increasing coercive pressure, manufacturing SMEs are more willing to practice EMA. These results are in line with institutional theory which emphasizes the impact of social, economic, and political institutions on an organization. Behavior is related to making changes and adopting new practices. Institutional theory emphasizes that coercive pressure

exerted by the government and legalization can force an organization to make organizational changes and adopt certain attributes to gain legitimacy for its operations. Concerning EMA practices, coercive pressure may lead to the adoption of new techniques due to the need to comply with environmental regulations. Without pressure from governments (which establish guidelines that bind organizations to accounting procedures and practices related to environmental management), organizations will be less likely to adopt EMA. Thus, increasing coercive pressure by the government will positively influence the intention and willingness of manufacturing SMEs to adopt EMA.

The mediating role of environmental management practices lies in their ability to shape the link between institutional demands and environmental performance. It is because these practices play a crucial role in determining how hospitals respond to institutional pressures to achieve desired levels of environmental and socioeconomic performance. Institutional theory posits that environmental requirements give rise to institutional pressures, which originate from diverse sources. These sources include adherence to government regulations for regulatory compliance, meeting the social expectations of customers (Rui & Lu, 2020) and suppliers (Latif et al., 2020), as well as the need to imitate competitors to sustain comparative competitive advantage (Tang & Tang, 2014). The forces above have the potential to influence the policies and activities of hospitals about the environment, leading to the adoption of environmental management techniques.

The application of EMA is critical, especially in manufacturing companies that greatly influence the environment. The failure to implement EMA by companies certainly impacts both the environment and the company itself. Following are some of the impacts if a company does not implement environmental management accounting (EMA):

1. There are environmental pollution problems carried out by manufacturing companies. (EMA) must be implemented in companies because it has the greatest urgency in reducing waste and saving costs regarding the environment as well as improving environmental performance, which helps the task of company environmental managers.
2. Inaccuracy of allocating environmental costs as fixed costs. Because environmental costs are hidden in general costs, when necessary, it cannot be easy to trace the actual

costs of a particular product process or production line. With the application of environmental management accounting (EMA), you can identify environmental costs often hidden in the general accounting system. EMA provides a more comprehensive approach than conventional accounting; this can be seen from its attention to transactions that are not reciprocal (non-reciprocal). reciprocal transactions) such as pollution, environmental damage, or harmful things from company activities.

3. Inaccuracy in calculating wasted raw materials' volume (and costs). Before implementing EMA, waste costs will be calculated as management costs, namely disposal and management costs. However, after implementing EMA, EMA will calculate waste costs as management costs plus raw material purchase costs so that the costs incurred are greater (actually) than those calculated so far.

In a comparative journal (Bahtiar, 2020), it is stated that environmental management accounting (EMA) must be implemented in companies because it has the greatest urgency in reducing waste and saving costs regarding the environment as well as improving environmental performance, which helps the task of company environmental managers. In addition, by implementing environmental management accounting (EMA), you can identify environmental costs often hidden in the general accounting system (Ikhsan, 2008). EMA provides a more comprehensive approach than conventional accounting; this can be seen from attention to transactions. -non-reciprocal transactions (non-reciprocal transactions) such as pollution, environmental damage, or harmful things from company activities (Rustika, 2011). Implementation of environmental management accounting by a company will positively impact the company itself in increasing profits and value of the company in the eyes of society. The company's value is characterized by a good image and image for the surrounding community so that the community can provide legitimacy to support the company's operational activities.

Companies require costs in implementing EMA, especially in MEMA practices. These environmental costs need to be known and calculated. Environmental costs usually occur because there is poor environmental quality around the company. Costs incurred by the company to prevent the possibility of poor environmental quality and overcome environmental damage that arises from the company's activities. Hasen (2015) explains that environmental costs are costs that occur due to poor environmental quality or poor

environmental quality that may occur. So, environmental costs are related to preventing, detecting, and correcting environmental degradation. The types of environmental costs are explained in the theoretical basis regarding environmental costs, namely environmental prevention costs, environmental detection costs, environmental internal failure costs, and environmental external failure costs.

CONCLUSION

Applying Environmental Management Accounting in companies has many benefits and relevance in sustainable business. The following is a conclusion about the importance of implementing Environmental Management Accounting:

1. Identify and manage environmental risks: By implementing Environmental Management Accounting, companies can identify and manage environmental risks that may affect their operations. It includes reducing compliance risks with environmental regulations, reputation risks, and the risk of adverse environmental impacts on business operations.
2. Resource efficiency: Environmental Management Accounting helps companies measure and manage the efficient use of resources. By monitoring and analyzing environmental data, companies can identify opportunities to reduce waste, save energy, and optimize the use of raw materials. It can reduce operational costs and increase company sustainability.
3. Regulatory compliance: Environmental Management Accounting implementation helps companies comply with applicable environmental regulations and requirements. By monitoring and reporting their environmental performance, companies can avoid legal sanctions and the negative reputation of environmental violations.
4. Improved corporate image: In an era where sustainability and corporate social responsibility are increasingly concerned, implementing Environmental Management Accounting can help companies build a good image. Consumers, investors, and other stakeholders are more interested in companies that employ environmentally friendly and socially responsible business practices.
5. Sustainable decision-making: Environmental Management Accounting provides relevant and measurable information about a company's environmental performance.

This information allows company management to make better decisions in terms of sustainability, including environmental investments, environmentally friendly product development, and long-term sustainable business strategies.

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