

# Challenges of Implementing Environmental Accounting in Micro, Small, and Medium Enterprises (MSMES) (Case Study: Siks Tofu And Fermented Soybean Cake Cooperative In Balikpapan City)

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## Abstract

Environmental Accounting involves identifying, measuring, and recording environmental costs considered by business entities. This practice can be implemented not only by large-scale entities but also by micro and small enterprises. The Somber Small Industry Center (SIKS), a small-scale producer of tofu and fermented soybean cake in Balikpapan City, has generated a significant volume of waste over three years (2020-2022). This waste is processed into new products such as fermented soybean cake fat, livestock feed, and water, which is reused in the production of fermented soybean cake. This study aims to understand the implementation of environmental accounting at the Somber Small Industry Center (SIKS) in their waste processing activities. The research employs a qualitative approach, utilizing semi-structured interviews to gather information from craftsmen. The findings indicate that environmental accounting practices have not yet been implemented by SIKS in their daily waste processing activities. The primary challenges include the craftsmen's lack of preparedness for record-keeping, the absence of comprehensive recording practices, and the lack of cost classification within the environmental accounting framework at SIKS. Therefore, to successfully implement environmental accounting at SIKS, collaboration between craftsmen and administrators is essential to regularly record environmental costs. The importance of recording environmental accounting lies in enabling SIKS to understand the costs associated with waste processing activities, thereby benefiting the economy of both the craftsmen and the area managers.

**Keywords:** *Environmental Accounting; MSMEs; Environmental Conservation*

## Introduction

Environmental issues are increasingly interesting to study along with developments in technology and the global economy. This is interesting because every year there are new problems related to changes in the ecosystem. Thus, Indonesian people's awareness of the importance of the environment is starting to grow slowly. This awareness becomes the basic capital as a control system over the entity. Through this control system, it is hoped that it can minimize side effects from industrial activities. One of the side effects of industrial activities is the disposal of waste from deviant production activities, which often becomes a spotlight for communities around industrial sites. The industry that is often in the spotlight is small industry (MSME), namely the food sector. According to data from Indonesian MSMEs, from 2020 to 2022 the number of MSMEs reached 64.2 million. And in 2022 there will be an increase of 1.2% to 65 million MSMEs [1]. Data on MSMEs in Balikpapan City from the 2021 Department of Cooperatives and MSMEs shows data that the number of MSMEs in Balikpapan continuously from 2020 - 2022 continues to experience a significant increase reaching 117%. Very significant growth, especially in the tofu and fermented soybean cake food sector. However, unfortunately, this industry is one of the most highlighted because of the impact of its production results. This is caused by the process of making raw materials into tofu or fermented soybean cake which produces several wastes, namely solid and liquid waste. Apart from causing various negative impacts on the environment, unpleasant odors, increasing the growth of mosquitoes, and reducing the aesthetic value of the area are also problematic factors highlighted in this production [2].

In Indonesia, around 15-20 percent of waste is disposed of properly and appropriately, but the rest is disposed of carelessly, such as in rivers and streams. Around 75% of waste can be decomposed and can be reused such as compost and biogas. However, the lack of knowledge and training hinders further development of environmental processing. Meanwhile, in Balikpapan itself, in the Somber industrial area, the increase in the amount of waste resulting from tofu and fermented soybean cake production has increased to 6% in the last three years, 2020-2022. So this waste problem has become an important matter in Balikpapan, especially Balikpapan as a buffer zone for the National Capital City (IKN). The waste problem is serious. The role of environmental accounting needs to be carried out so that the tofu and fermented soybean cake industry itself can improve its environmental performance which has often been highlighted negatively by the public due to production activities. The role of environmental accounting is expected to be able to control waste produced in the Somber area.

Environmental accounting is a form of entity responsibility towards the area in which the entity operates. There is a need for an understanding of environmental accounting. The application of environmental accounting to waste handling problems is an important matter in controlling the entity's responsibility towards the environment [3]. Previous studies illustrate that the application of environmental accounting carried out by Dwifebrisa [4] in MSME production activities in Malang can minimize waste and can determine the level of cost achievement related to factory maintenance costs and waste processing costs. Meanwhile, in more recent research conducted by Ramadhani and Dewi [5] in Tanjung Morawa District, the application of environmental accounting in production activities is very helpful for MSMEs, but only large-scale MSMEs can implement environmental accounting. This is because there are differences in responsibility towards the environment between large and small-scale industries towards the environment. Environmental accounting issues focus more on large-scale industries, this causes small-scale industries to have no sense of responsibility towards the environment.

Currently, SIKS has implemented waste processing activities. However, in practice, environmental accounting has not yet been implemented in production activities. The form of implementing environmental accounting is recording costs related to environmental conservation activities at the Somber Small Industry Center. Business management challenges are increasingly directed towards environmental sustainability, such as the increasing amount of waste produced. So, the role of environmental accounting is expected to contribute to SIKS business process activities. The final objective of this research is to determine the implementation of environmental accounting in the Somber Small Industry Center (SIKS) area.

## **Literature Review**

### **Legitimacy Theory**

Legitimacy theory is a theory that explains the practice of disclosing an entity's accountability which must be carried out in such a way that activities and performance can be accepted by society. Legitimacy itself can be said to be a benefit or potential source for an entity to be able to survive and thrive. Micro, Small, and Medium Enterprises are industries that are very prone to experiencing problems with production and survival, so the entity needs *to survive* through a fairly diverse business climate. By carrying out environmentally responsible activities by maintaining the environment, minimizing the environmental impact of production results, and allocating costs to manage production waste products. So that the people around the production site feel appreciated and will be accepted by the surrounding community.

### **Stakeholder Theory**

*Stakeholder* theory is a theory that describes which parties an entity is responsible for [6]. All *stakeholders* have the right to obtain information regarding the entity's activities that can influence the entity's decision-making [5]. It is not only entities that operate to make a profit, but also everyone who has an interest in it [7]. For entities, the role of *stakeholders* is very influential for the entity, so that it can influence or be taken into consideration by the entity in making decisions. *Stakeholders* can influence the use of various economic information used by the entity. So, *stakeholders* are generally related to the entity's ways of controlling *stakeholder influence*.

### Environmental Accounting in MSME Practices

Environmental accounting is a term related to the policy of incorporating costs into an entity's accounting practices. Environmental costs themselves are impacts resulting from both financial and non-financial sides. Environmental costs must be borne as a result of activities that affect environmental quality [8]. The role of environmental accounting is to identify environmental accounting concepts in one accounting cycle. The accounts focused on costs and income related to the environment and social issues. Environmental accounting plays a role in 3 (three) types of accounting manifestations, namely: First, environmental accounting plays a role in providing additional information that is disclosed fully and fairly. Second, environmental accounting is used to allocate reasonable costs and control all company activities. Thirdly, environmental accounting plays a role in making and making management decisions as well as control aspects [5].

### Environmental Conservation Costs

Environmental costs are costs incurred by an entity related to the environment [9]. Environmental conservation costs are allocated to the costs of preventing, reducing, and avoiding environmental impacts, moving from what happens, repairs made after a disaster, and other activities [10].

Table 1: Allocation Of Environmental Conservation Costs

Cost	Meaning
Prevention	Prevention costs are costs incurred to prevent and manage waste generated from industry to avoid environmental damage.
Reduction and avoidance	This is a cost savings resulting from environmental management.
Repair	Costs incurred to maintain, repair, and replace environmental damage resulting from industrial activities.

Source: Santoso, 2018.

### Environmental Conservation

Environmental conservation is an effort to protect and maintain natural resources as well as efforts to improve them to protect the environment and provide benefits to living creatures. Profit from conservation activities is an effort for an entity to gain profit or profit from its production activities. This relationship is divided into actual profits and estimated profits depending on whether the data can be determined [10].

### Objectives of Environmental Accounting in MSMEs

In its implementation, environmental accounting also has the aim of increasing the amount of relevant information created for those who need data related to environmental activities in an industry [11]. Apart from that, the purpose of environmental accounting is related to environmental conservation activities carried out by an entity or organization, so that stakeholders *can* observe and understand the efforts carried out and it is hoped that they can get support from *stakeholders*. Environmental accounting as an environmental management tool. As an environmental management tool, environmental accounting is used to evaluate activities related to environmental activities [12]. Apart from being a management tool, environmental accounting is also a communication tool with the public. As a public communication tool, environmental

accounting is used to communicate the impact of environmental activities carried out by the Somber Small Industry Center (SIKS).

## **Methods**

The approach taken in this research is qualitative. Data collection techniques are used in combination, data analysis is inductive, and qualitative research results emphasize meaning rather than generalizations [13]. Data and data sources in this research are direct interviews with sources and documentation. The target of this research is tofu and fermented soybean cake craftsmen who have joined the Somber Small Industry Center (SIKS). The determination of informants in this research was carried out purposively, that is, they were selected with certain considerations and objectives [13]. Some of the considerations referred to are the length of time the owner of the tofu and fermented soybean cake industry has been a member of SIKS, the length of time cooperative employees have worked, and the level of understanding of employees and industry players regarding the importance of waste processing. So that the number of informants in this research was 4 (four) people consisting of tofu craftsmen, *fermented soybean cake* craftsmen, SIKS administrators, and the surrounding community. Data collection techniques consist of semi-structured interview methods and documentation methods. The data analysis technique carried out by this researcher Creswell [14] by collecting data into small themed sections of around five to seven steps.

## **Results And Discussions**

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### **Understanding Environmental Accounting in the SIKS Environment**

The template is designed so that author affiliations are not repeated each time for multiple authors of the same affiliation. Please keep your affiliations as succinct as possible (for example, do not differentiate among departments of the same organization). This template was designed for two affiliations. Somber Small Industry Center is a home industrial area for MSMEs in Balikpapan City. Most MSMEs produce processed tofu and fermented soybean cake. In the production of tofu and fermented soybean cake, craftsmen can produce up to 11 tons of liquid waste and 4 sacks of dregs every day. This amount is quite large if it is not handled every day. SIKS management understands that production waste can pollute the environment if it is continuously left untreated. SIKS management strives to control and process this waste so that it does not pollute the environment too much by carrying out environmental conservation activities.

However, unfortunately, there are still many craftsmen who do not properly understand environmental accounting and the importance of environmental accounting. The management said this was because the craftsmen still only focused on production results every day. Craftsmen do not understand environmental accounting. So the process of recording waste handling costs cannot be carried out routinely and continuously.

### **Environmental Conservation Activities**

In handling waste at the Somber Small Industrial Center (SIKS), the management has made efforts to handle the waste. By carrying out conservation activities, it will bring benefits to industrial areas. One effort in handling waste is by reusing liquid waste into clean water which will later be distributed back to producers' homes. Apart from re-processing the liquid waste, the management and craftsmen also re-process the existing dregs. The dregs will be reprocessed into *fermented soybean cake gumbos* or resold to be used as animal feed. Conservation activities also bring benefits to the surrounding environment, this is because the surrounding environment is clean and not polluted, especially with unpleasant odors. In environmental conservation activities, SIKS management is quite serious about waste handling, so SIKS management can control waste from tofu and fermented soybean cake production.

## Challenge

It can be said that environmental conservation activities at SIKS are starting to run, but not for environmental accounting. In the implementation of environmental accounting at SIKS, it turns out that there are challenges experienced by craftsmen and management related to records that are not detailed and complete. Thus, there is no classification of costs for environmental conservation activities in waste processing. These costs are classified as prevention costs, reduction costs, and avoidance costs. This is quite a difficult challenge for SIKS in implementing environmental accounting in production activities. Apart from the challenges in terms of recording, the ability of craftsmen to implement environmental accounting is not yet sufficient, so implementation is still not perfect. This challenge can occur due to a lack of understanding and ability regarding the importance of recording costs and classifying costs incurred both for production and environmental conservation activities.

## Conclusion

Even though SIKS has carried out environmental conservation activities as proof of its concern for waste and the environment around production sites, the implementation of environmental accounting at SIKS still faces challenges. Recording of conservation costs has not been carried out properly due to a lack of data and the absence of routine records regarding conservation costs. The system is still traditional and the staff's lack of understanding regarding environmental accounting is the main factor resulting in incomplete recording of environmental costs in SIKS.

Another challenge involves the ability of craftsmen to record costs, there is no classification of costs related to their environmental conservation activities. The craftsmen's focus is only on the daily production and sales of tofu and fermented soybean cake. Therefore, in efforts to implement environmental accounting at SIKS, cooperation is needed from craftsmen to record environmental costs regularly. The assistance and understanding provided by management who understand environmental accounting is considered necessary to provide socialization and assistance to these practices to craftsmen. The implementation of environmental accounting at SIKS cannot be said to be perfect, because there is no recording of costs and grouping of costs for environmental management.

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