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UNDERSTANDING AND REPORTING OF ENVIRONMENTAL COSTS IN FINANCIAL STATEMENTS OF THE RAMBAK INDUSTRY CENTER TULUNGAGUNG

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Abstract

This research aims to identify environmental costs incurred by the Tulungagung rambak industry, as well as their understanding of reporting environmental costs in financial reports. Environmental costs are incurred to manage industrial waste, namely solid waste in the form of livestock hair and liquid waste in the form of cooking oil residue and lime water at the rambak industrial of Tulungagung. The concept of recognizing environmental costs and their accounting treatment uses the Financial Accounting Standards for Micro, Small, and Medium Entities (SAK-EMKM) and the concept of green accounting. The research method used is a qualitative case study, The data was obtained from interviews with three informants who are owners of rambak home industries in Tulungagung. The interview results were identified regarding the understanding and implementation of environmental costs, both in terms of industrial waste management and their reporting in financial statements. The results of this research are that Tulungagung Rambak Industrial has implemented environmental costs for environmental prevention costs and environmental detection costs, such as halal cost, PIRT cost, freight cost, sack cost, and sapiteng cost. Conclusion the reporting of those environmental costs is still done by conventional accounting concepts and not yet by green accounting.

Introduction

An industry is considered to provide many benefits to society; however, behind the efforts to increase productivity and efficiency, an industry often has an impact on the surrounding environment. These efforts to enhance productivity and efficiency can include production utilizing technology, cost reduction, mergers and acquisitions, and the use of cheaper resources. These efforts are made with the aim of maximizing results for stockholders. However, industries do not only offer productivity and efficiency but can also contribute to environmental issues.

In line with the development of Corporate Social Responsibility (CSR) in the 1970s, there was a demand for government intervention aimed at broadening the scope of CSR (Lubis, 2017). This expansion impacted the field of accounting, which initially focused solely on the single bottom line—the value of the company reflected only in its financial condition—to moving towards the triple bottom line, which also considers social and environmental issues (Lubis, 2017). This shift occurred because the presence of a company or industry cannot be separated from the interests of various stakeholders, including environmental support.

Often, an industry's efforts to increase its productivity can have a massive impact on the environment surrounding its operations. The potential impacts include a decline in environmental quality, such as air and water pollution, and the reduction of soil functions due to industrial waste. Environmental preservation can benefit the communities living near the industry and be advantageous for the industry or company in the long term. In the era of the shift towards green companies, industries are not only expected to manage industrial waste but also to ensure that their production processes—from raw material extraction to the disposal of products after consumption—do not harm the environment (Idris, 2012).

This is in line with Law No. 32 of 2009 on Environmental Protection and Management, which regulates the maintenance and care of the surrounding environment and stipulates that economic development must be based on sustainable and environmentally conscious principles (Presiden Republik Indonesia, 2009). In efforts to manage and preserve the environment, accounting plays a role through voluntary disclosures in financial reports related to environmental costs. Accounting that includes accounts for environmental costs is referred to as green accounting or environmental accounting (Aniela, 2012).

However, industries often neglect environmental costs, as evidenced by the increasing air pollution resulting from industrial activities. According to data from the Ministry of Environment and Forestry, there are 2,900 industries that pollute the environment with industrial waste. Tulungagung Regency has many industrial centers, particularly in the food sector, such as the rambak cracker industry. Data from livestock and animal health in 2015 indicates that East Java Province imported 1,655,319 sheets of raw cowhide. This raw hide is used for leather crafts as well as food products.

One of the food products made from cowhide is rambak crackers. Rambak crackers are a type of snack made from cow or buffalo skin through a process that includes hair removal, skin cleaning, boiling, drying, and marinating for raw rambak crackers, followed by frying to produce ready-to-consume rambak crackers. Additionally, the production of rambak crackers also generates liquid waste

from the skin boiling process, which may contain chromium. Whether treated or untreated, the liquid waste from an industry will ultimately be disposed of into the environment, often ending up in rivers.

The rambak cracker industrial centers in Tulungagung Regency are located around the Ngrowo River. According to data from the Tulungagung Environmental Agency, the water in the Ngrowo River contains excessive levels of cadmium and manganese, which exceed the standard quality levels. Cadmium and manganese are heavy metals. Table 1 below explains the heavy metal content in the Ngrowo River for the year 2023

Table 1. Results of the Water Quality Standards Testing for Ngrowo River

Parameter	Measurement Unit	Standart Quality	Result/Outcome
Nitrat (NO_3)	mg/L	10	9,5
Nitrit (NO_2)	mg/L	0,06	0,11
Sianida (CN^-)	mg/L	0,02	<0,005
Kadmium (Cd)	mg/L	0,01	0,180
Mangan (Mn)	mg/L	-	0,77
Sulfida (S)	mg/L	0,30	0,09

Source: Environmental Agency of Tulungagung Regency, 2023

Cadmium in river water can originate from contamination by domestic and industrial waste. Industries that can produce cadmium waste include textile, battery, paint, and plastic industries. Around the Ngrowo River in Tulungagung Regency, there are several industrial centers, including batik and rambak cracker industries. In the village of Sembung, there are five rambak cracker businesses actively engaged in production. These rambak cracker industries are located near the Ngrowo River. They produce both solid and liquid waste. The solid waste consists of discarded animal skin that is thrown into the river, while the liquid waste includes used frying oil. Although some rambak cracker industries have taken steps to manage their waste, not all of them report their waste management efforts in their financial statements. Proper reporting of industrial waste management efforts in company financial reports can enhance the company's value or its positioning within the community.

Reporting industrial waste management efforts in company financial statements as a manifestation of Green Accounting serves two functions: internal and external (Ikhsan, 2008). The internal function is to measure environmental management costs and analyze the costs of effective and efficient environmental management activities. The external function involves financial reporting by disclosing information on environmental management activities in the form of accounting data, which influences decision-making by stakeholders such as customers, business partners, investors, and creditors.

An example of the internal function of Green Accounting is the management of production waste at the tuna canning company PT Samudera Mandiri Sentosa Bitung. Environmental costs arise from waste management, which are recorded in overhead accounts, material costs, direct labor, and other indirect costs, and are then allocated to products, as reported by the company in the income statement (Anis et al., 2020). Another example of the internal function of environmental management is environmental accounting at the Regional General Hospital (BRSUD) Tabanan. Costs incurred for managing solid and liquid waste are charged and reported in the income statement, while waste processing equipment such as incinerators and wastewater treatment facilities are depreciated with no residual value using the straight-line method, and the accumulated depreciation of these assets is reported in the balance sheet (Indrawati &

Intan Saputra Rini, 2018).

Given the importance of Green Accounting functions in a company's financial reports, this study focuses on the allocation of environmental costs as a form of industrial waste management and the understanding of rambak cracker industrial centers in Tulungagung Regency regarding the reporting of these environmental costs in their financial statements. This focus aims to address the efforts of rambak cracker industrial centers in Tulungagung Regency to prevent environmental pollution resulting from solid and liquid waste being discharged into the Ngrowo River. Therefore, this study is centered on Green Accounting in Determining Environmental Costs: Understanding and Reporting in the Financial Statements of Rambak Cracker Industrial Centers in Tulungagung Regency.

LITERATURE REVIEWS

A. Green Accounting

Culture is a key factor influencing the development of business structure and social environment, which ultimately affects accounting. This social and environmental accounting impact led to the emergence of the concept of Socio-Economic Environmental Accounting (SEEC), which is a brief description of the Triple Bottom Line concept, involving public accounting reporting that includes economic performance, environmental performance, and social performance. Bell and Lehman (1999) in (Lako, 2018) define environmental accounting as: “Green accounting is one of the contemporary concepts in accounting that supports the green movement in the company or organization by recognizing, quantifying, measuring, and disclosing the contribution of the environment to the business process.

Green accounting is an accounting system that includes accounts related to environmental costs (Aniela, 2012). Similarly, (Ningsih & Rachmawati, 2017) define green accounting as an accounting system that reveals accounts related to environmental costs. It can be concluded that green accounting is accounting that identifies environmental costs incurred because of mitigating the environmental impacts of a business process or production process.

B. Environment Cost

Environmental costs are expenses incurred due to a decline in environmental quality because of an organization's operational activities (Anis et al., 2020). Environmental costs occur because of poor environmental quality or because such quality may deteriorate (Maryanne M Mowen, Don R Hansen, 2017). Essentially, environmental costs are related to the costs of products, processes, systems, or facilities crucial for better management decision-making (Surotenojo et al., 2019). Based on the above theories, it can be concluded that environmental costs are expenses incurred for environmental prevention or improvement measures, which companies must bear because of the operational impacts they create.

Before environmental cost information can be provided to management, environmental costs must be classified. Environmental costs can be categorized into four types (Maryanne M Mowen, Don R Hansen, 2017):

1. Environmental Prevention Costs: Costs associated with activities undertaken to prevent the production of pollutants or waste that could harm the environment.

2. Environmental Detection Costs: Costs

related to activities performed to determine whether products, processes, and other activities within the company comply with environmental standards.

3. Environmental Internal Failure Costs: Costs incurred from activities related to pollutants and waste that are present but have not yet caused environmental damage.

4. Environmental External Failure Costs: Costs resulting from activities conducted after pollutants and waste have caused environmental contamination.

C. Treatment of Environmental Costs in Accounting

Companies need to plan the allocation of environmental costs, such as those arising from waste management, pollution prevention, air pollution control, and other social effects. This planning stage ensures that the allocated budget for an accounting period is applied effectively and efficiently (Mulyani, 2013). Once planned costs are incurred and the benefits of these expenditures are realized, they are reported in the company's income statement. The accounting treatment related to environmental costs includes:

1. Recognition

Recognition is the process of establishing an item in the financial statements—such as the balance sheet or income statement—that provides economic benefits, with the expectation that these benefits will flow into or out of the entity (IAI, 2016). These items can include assets, liabilities, equity, revenue, and expenses. If identified as an expense, it is subsequently recognized as an expense item in the income statement when the benefits from the incurred costs are realized. Environmental costs that are incurred and are expected to provide future economic benefits are recognized as social-environmental investments or green investments (Lako, 2018).

2. Measurement

Measurement is the process of determining the amount to recognize assets, liabilities, income, and expenses in the financial statements (IAI, 2016). The sacrifice value and both economic and non-economic value of future costs should be reasonably certain and measurable across periods (Lako, 2018).

3. Disclosure/Presentation

Disclosure is the method of presenting costs in the financial statements in a way that provides useful and informative details to the users of the financial reports (Indrawati & Intan Saputra Rini, 2018). The presentation of asset, liability, income, and expense values should fairly reflect the transactions that have occurred in the financial statements (IAI, 2016). Environmental costs are recorded as social-environmental investments or green investments, which do not reduce asset values and are not related to periodic expenses in the Income Statement (Lako, 2018). Environmental costs that do not meet the "Asset Definition" are expensed as periodic costs in the Income Statement (Lako, 2018).

Here is how the financial statements would present environmental costs in the income statement as part of the disclosure or presentation of environmental costs. Environmental costs are recognized as such in the income statement and are matched against the company's income or revenue according to the matching concept. The presentation of green financial statements is illustrated in Table 2 for the balance sheet and Table 3 for

the income statement.

Table 2. Green Balance Sheet

Assets	Amount	Liabilities	Amount
Current Assets	xxxx	Current Liabilities	xxxx
Financial Assets	xxxx	Non-Current Liabilities	xxxx
Fixed Assets	xxxx	**Total Liabilities**	**xxxx**
Natural Resource Assets, Social and Environmental Investments**)	xxxx		
Intangible Assets	xxxx	**Equity**	
Other Assets	xxxx	Share Capital	xxxx
		Retained Earnings	xxxx
		Green Investments (CSR)**)	xxxx
		Total Equity	**xxxx**
Total Assets	**xxxx**	**Total Liabilities & Equity**	**xxxx**

Source: Andreas Lako, 2018 (Lako, 2018)

Table 3. Green Income Statement

Revenue	**Amount**
Sales Revenue	xxxx
Other Income	xxxx
Total Revenue	**xxxx**[a)]
Expenses	
Cost of Goods Sold	xxxx
Operating Expenses	xxxx
Environmental Costs)**	xxxx
Total Expenses	**xxxx**[b)]
Net Income (a-b)	**xxxx**

Source: Andreas Lako, 2018 (Lako, 2018)

Description:

- **Green Balance Sheet (Table 2)**: Includes environmental investments as part of equity to reflect the value of green investments made by the company. These investments are considered as part of the total equity and do not directly affect asset values.

- **Green Income Statement (Table 3):** Environmental costs are shown as a separate line item under expenses. This presentation aligns with the matching concept, where costs are matched with revenues to provide a clear picture of profitability after accounting for environmental expenditures.

Research Methods

This research employs a qualitative method. Qualitative research is based on a postpositivist philosophy and is used to study natural conditions of objects, where the researcher acts as the key instrument, data collection techniques are triangulated (combined), data analysis is inductive/qualitative, and the research results emphasize meaning over generalization (Sugiyono, 2019). The research approach is a case study. This study is conducted at the Rambak Cracker Industrial Centers in Tulungagung Regency, located in Sembung Village, Tulungagung Regency. There are 12 Rambak Cracker Industrial Centers in Tulungagung Regency. Among these 12 centers, only 6 are engaged in the production of rambak crackers, while the remaining centers are primarily involved in the sale or trade of rambak products. This research focuses on the 6 industrial centers that are involved exclusively in the production of rambak crackers.

Data collection was conducted at the Rambak Cracker Industrial Centers in Tulungagung Regency using the following methods:

1. Observation: Observations were made to monitor activities that could lead to the emergence of environmental costs at the

Rambak Cracker Industrial Centers in Tulungagung Regency.

2. Interviews: Structured interviews were conducted using written questions posed to the informants (Sugiyono, 2019). These interviews aimed to gather detailed information about environmental cost management and practices. In this research, the interviews are focused on 3 informants who are owners of rambak industries and who prepare financial statements on a monthly basis.

3. Documentation: Documentation involved collecting data on environmental costs. Relevant documents related to environmental costs were reviewed and analyzed to provide insights into the financial impact of environmental management practices at the centers.

The data analysis techniques involve data collection, data reduction, data display, and drawing conclusions (Huberman, 2014). Data validity testing is conducted using credibility tests. In qualitative research, credibility can be tested through several methods, including prolonged observation, increasing persistence, triangulation, peer discussion, negative case analysis, and member checking (Sugiyono, 2019). Credibility testing in this research uses triangulation, specifically source triangulation. Through source triangulation, the informants responses are formulated to understand and report environmental costs in the financial statements.

Result and Discussion

Descriptive Statistics

A. Allocation of Environmental Costs at Rambak Cracker Industrial Centers in Tulungagung Regency

After collecting data on activities that incur environmental costs through interviews, several such activities were identified. These activities include:

1. Registration for PIRT (Product Registration for Food Safety): Involves costs associated with ensuring compliance with food safety regulations.

2. Purchase of Sacks: Costs related to acquiring packaging materials for the products.

3. Payment for Raw Material Shipping: Costs incurred for transporting raw materials to the production site.

4. Halal Certification Audit: Costs associated with verifying that the products meet halal certification standards.

5. Construction of Lime Water Disposal Tanks: Costs for creating facilities to manage and dispose of waste water from lime processing.

These activities fall under the categories of environmental prevention costs and environmental detection costs. Environmental prevention costs are associated with measures taken to prevent pollution and manage waste effectively, while environmental detection costs involve monitoring and ensuring compliance with environmental standards. All of these based on this interview:

Informant 1:

“Ada sisa bahan baku yang tersisa mbak, seperti minyak jelantah sisa minyak penggorengan yang tidak bisa dipakai lagi dan sudah menghitam, kemudian ada air kapur yang digunakan untuk mencuci kulit ternak dibuang ke bak pembuangan”.

“Produk rambak kami tidak hanya lolos PIRT saja mbak, namun juga telah tersertifikasi halal. Sertifikasi halal meliputi bahan baku yang digunakan dan proses produksi yang dilaksanakan”.

Informant 2

"Sisa bahan seperti minyak jelantah, air kapur dan bulu sapi serta kerbau tidak diproses lebih lanjut. Minyak jelantah dijual karena ada pembeli yang datang mengambilnya. Bulu sapi dibuang dengan cara ditempatkan di dalam karung dan dibuang ke TPA. Air kapur juga dibuang ke selokan yang mengalir ke sungai".

"Ada mbak, PIRT harus ada karena syarat ijin utama. PIRT mencakup ijin produksi dan ijin edar produk".

Informant 3

"Limbahnya berupa limbah padat kapur yang terbuang dan bulu ternak. Sebagian kecil bulu ternak terbuang ke sungai, Sebagian dibuang ke pembuangan dan juga dibakar. Sebenarnya, banjir sudah tidak terjadi lagi di sembung dan limbahnya bukan limbah P3 atau berbahaya, namun jika tidak dikelola limbahnya juga mengganggu estetika karena berwarna putih dan bersifat basa".

"Ada, PIRT harus ada karena syarat ijin utama. PIRT mencakup ijin produksi dan ijin edar produk".

This indicates that environmental pollution caused by solid waste in the form of animal feathers and liquid waste such as lime water and leftover frying oil (used cooking oil) is still at a stage that does not pose a significant threat to the surrounding environment. This is because there has not yet been any waste that has leaked out and polluted or endangered the environment or the community living around the rambak (crunchy beef skin) production center in Tulungagung Regency.

The classification of environmental costs from environmental activities into environmental costs is based on the theory by (Maryanne M Mowen, Don R Hansen, 2017). The activities of registering PIRT (food safety certification), purchasing sacks, paying for raw material shipping, and creating lime water disposal bins are considered environmental prevention costs. Environmental prevention costs are expenses related to activities carried out to prevent the production of pollutants or waste that can cause environmental damage (Maryanne M Mowen, Don R Hansen, 2017). Furthermore, the halal audit activity is classified as an environmental detection cost. Environmental detection costs are expenses related to activities conducted to determine whether products, processes, and other activities within the company comply with existing environmental standards (Maryanne M Mowen, Don R Hansen, 2017).

The results of the environmental cost identification in this study align with the research conducted by (Yuliana & Sulistyawati, 2021), which found that the industrial centers studied have all managed the industrial waste they produce. However, there is a difference: in the study by (Yuliana & Sulistyawati, 2021), there was no record of activities related to the management of soy sauce waste. Their environmental activity involved creating a soy sauce waste filtration facility, whereas this study has included the recording of environmental activities as periodic expenses in the income statement.

Furthermore, the results of the environmental cost identification in this study are also consistent with the research conducted by (Indrawati & Intan Saputra Rini, 2018) and (Sukirman & Suciati, 2019). Both studies are in agreement regarding the execution of environmental activities and the reporting of environmental costs as expenses in the income statement. The difference lies in the types of environmental costs identified: the studies by (Indrawati & Intan Saputra Rini, 2018) and (Sukirman & Suciati, 2019) include environmental prevention costs,

environmental detection costs, and internal failure costs. In contrast, this study only includes environmental prevention costs and environmental detection costs.

B. Accounting Treatment of Environmental Costs at the Rambak Industry Center in Tulungagung Regency

The accounting treatment of environmental costs includes Recognition, Measurement, and Disclosure/Presentation. Recognition is the process of establishing an item in the balance sheet or income statement that provides economic benefits and ensures that these benefits will flow into or out of the entity (IAI, 2016). The item can be an asset, liability, or equity on the balance sheet, and income and expenses on the income statement.

Costs arising from the management of industrial waste at the rambak industry center in Tulungagung Regency have been recognized as production costs and operating expenses on their income statements. This is in accordance with conventional accounting concepts, specifically the financial accounting standards for SMEs or SAK-EMKM issued by (IAI, 2016). However, this recognition differs from the concept of green accounting. In green accounting, environmental costs that are expended and are expected to bring future economic benefits are recognized as social-environmental investments or green investments (Lako, 2018). The recognition of environmental costs at the rambak industry center in Tulungagung Regency is similar to the findings of research conducted by (Indrawati & Intan Saputra Rini, 2018) and (Sukirman & Suciati, 2019), where environmental costs arising from environmental activities are recognized as expenses on the income statement. These finding based on interview below:

Informant 1

"Tidak diolah, namun langsung dibuang untuk sisa bulu dan sisa minyak goreng dijual, sisa air kapur dibuang ke selokan atau penampungan yang sudah disediakan. Minyak jelantah dijual dengan harga 4000-5000/kg, untuk air kapur dibuang ke selokan. Bulu ternak Sebagian besar dibuang ke TPA dan Sebagian lagi dibakar".

Informant 2

"Limbahnya tidak diolah, langsung dibuang untuk sisa bulu dan sisa minyak goreng dijual, sisa air kapur dibuang ke sapiteng mbak kayak bak pembuangan. Minyak jelantahnya dijual Rp 9000/kg dan pembuatan sapiteng untuk penampungan air kapur dan gamping sekitar Rp 5.000.000".

Informant 3

"Sisa bahan seperti minyak jelantah, air kapur dan bulu sapi serta kerbau tidak diproses lebih lanjut. Minyak jelantah dijual karena ada pembeli yang datang mengambilnya. Bulu sapi dibuang dengan cara ditempatkan di dalam karung dan dibuang ke TPA. Air kapur juga dibuang ke selokan yang mengalir ke sungai. Karung yang digunakan untuk membuang bulu sapi dibeli dengan harga Rp 1000/karung".

The next accounting treatment aspect is measurement. Measurement is the process of determining the amount to recognize assets, liabilities, income, and expenses in financial statements (IAI, 2016). The measurement of costs arising from the management of industrial waste at the rambak industry center in Tulungagung Regency has been in accordance with the nominal value incurred and recognized as operational expenses and production costs. This is somewhat different from the concept of green accounting. In green accounting, measurement is defined as

the value of sacrifice and economic and non-economic values in the future that are fairly certain and can be measured across periods (Lako, 2018). This study still recognizes the costs of industrial waste management as sacrifices incurred at the time of the transaction (historical cost), without considering future economic or non-economic benefits, unlike the measurement concept in green accounting. The measurement of environmental costs at the rambak industry center in Tulungagung Regency is similar to the findings of research conducted by (Indrawati & Intan Saputra Rini, 2018) and (Sukirman & Suciati, 2019), where environmental costs arising from environmental activities are measured in monetary units at the time of the transaction (historical cost). These finding based on interview below:

Informant 1

"Biaya karung dicatat Rp 50.000 mbak soalnya biasanya butuh 50 karung seminggu, biaya audit pemeriksaan halal juga dicatat Rp 350.000 waktu itu di laporan laba rugi, PIRT juga dicatat sebagai penambah biaya produksi mba sebesar Rp 65.000".

Informant 2

"Biaya pendaftaran PIRT dicatat Rp 65.000, terus dicatat di kas keluar saat itu juga dan dimasukkan biaya produksi pada saat itu biar ndak rugi mbak". "Pengeluaran biaya untuk karung dan jerigen sebesar Rp 60.000/minggu mbak kemudian dicatat sebagai kas keluar, dan dimasukkan sebagai harga pokok rambak". "Ongkos kirim bahan baku kulit yang dari NTT juga dimasukkan kas keluar mbak sebagai biaya ongkos kirim dan biaya pembuatan sepiteng juga dicatat sebagai biaya sepiteng di laporan rugi laba, ongkos kirim e sekitar 8juta dan pembuatan sapiteng e kurang lebih habis 5juta".

Informant 3

"Pendaftaran PIRT dicatat Rp 65.000 mbak, terus karunge dicatat Rp 75.000 per minggunya langsung dicatat di kas keluar saat itu juga, dikasih keterangan untuk bahan baku-pendaftaran PIRT".

The final aspect of accounting treatment is disclosure/presentation. The presentation of asset, liability, income, and expense values is done fairly in the financial statements in accordance with the transactions that occur (IAI, 2016). According to this concept, the presentation of costs arising from environmental activities is done fairly in the financial statements in line with the transactions that occur, specifically as operational expenses and production costs in the income statement.

The disclosure/presentation of environmental costs is not recorded as social-environmental investments or green investments, as per the green accounting theory (Lako, 2018). In green accounting, environmental costs are recognized as green investments that do not reduce asset value and are not related to periodic expenses in the income statement (Lako, 2018). Environmental costs that do not meet the "Asset Definition" are charged as periodic expenses in the income statement (Lako, 2018). The findings of this study indicate that there are environmental costs that meet the asset definition but are recognized as periodic expenses. Some of these costs include: the cost of making sapiteng, the cost of PIRT registration, and halal audit costs. The disclosure/presentation of environmental costs at the rambak industry center in Tulungagung Regency is similar to the findings of research conducted by (Indrawati & Intan Saputra Rini, 2018) and (Sukirman & Suciati, 2019), where environmental costs are presented as operational expenses in the

income statement and are not reported separately with a specific account for environmental costs. These finding based on interview below:

Informant 1

"Biaya karung dicatat Rp 50.000 mbak soalnya biasanya butuh 50 karung seminggu, biaya audit pemeriksaan halal juga dicatat Rp 350.000 waktu itu di laporan laba rugi, PIRT juga dicatat sebagai penambah biaya produksi mba sebesar Rp 65.000".

Informant 2

"Pendaftaran PIRT dicatat Rp 65.000 mbak, terus karunge dicatat Rp 75.000 per minggunya langsung dicatat di kas keluar saat itu juga, dikasih keterangan untuk bahan baku-pendaftaran PIRT".

Informant 3

"Daftar PIRT hanya sekitar Rp 65.000an, kemudian langsung dicatat sebagai kas keluar mbak, karung e butuh 50 seminggunya jadi seminggu kena biaya Rp 50.000 untuk beli karung terus ada biaya ongkos kirim bahan baku juga untuk kulit kerbau yang dari NTT sekitar Rp 5 juta mbak…".

Based on the data from previous interviews, the rambak industry center in Tulungagung Regency, which engages in production activities, has indirectly incurred environmental costs such as the cost of purchasing sacks, PIRT registration fees, halal inspection audit fees, the cost of making sapiteng/lime water disposal bins, and shipping costs. However, their financial statements report these costs as the cost of goods sold and operational expenses, a concept that is highly incompatible with the principles of green accounting. This can be illustrated by Table 4 below:

Table 4. Income Statement December 2022

Revenue	**Amount**
Sales Revenue	xxxx
Other Income (cooking oil residue)	xxxx
Total Revenue	**xxxx[a)]**
Expenses	
Cost of Goods Sold (purchasing sacks, PIRT registration fees, shipping costs)	xxxx
Operating Expenses (halal inspection audit fees, the cost of making sapiteng/lime water disposal bins)	xxxx
Total Expenses	**xxxx[b)]**
Net Income (a-b)	**xxxx**

Source: Proceed Data, 2023

Based on this, it can be concluded that the rambak industry centers in Tulungagung Regency do not yet understand green accounting. However, they do understand financial or conventional accounting. According to the concept of green accounting, environmental costs such as the cost of purchasing sacks and the cost of shipping supplier selection should be recognized as social and environmental costs. Meanwhile, costs such as registration fees for PIRT, halal audit fees, and the cost of creating sapiteng (lime water disposal bins) should be recognized as environmental investments. These differences are shown in the following Table 5.

Table 5. Differences in Cost Recognition

Type of Costs	**Conventional Accounting**	**Green Accounting**	**Reasons for Recognition**
Environmental Prevention Costs			

Type of Costs	Conventional Accounting	Green Accounting	Reasons for Recognition
Purchasing Sacks	Cost of Goods Sold (Income statement)	Environmental Costs (Income Statement)	Because these costs are incurred for the purpose of environmental control
Shipping Costs	Cost of Goods Sold (Income statement)	Environmental Costs (Income Statement)	Because these costs are incurred for the purpose of environmental control
Registration Fees for PIRT	Cost of Goods Sold (Income statement)	Green Investment (Balance Sheet)	Because it is expected to provide benefits in the future
Cost of Making Sapiteng/Lime Water Disposal Bins	Operating Expenses (Income statement)	Green Investment (Balance Sheet)	Because it is expected to provide benefits in the future
Environmental Detection Costs			
Halal Inspection Audit Fees	Cost of Goods Sold (Income statement)	Green Investment (Balance Sheet)	Because it is expected to provide benefits in the future

The five identified environmental costs, when reported in the financial statements using the green accounting format, will be consistent with Table 6 (Green Financial Position Report) and Table 7 (Green Income Statement) as shown below.

Table 6. Green Balance Sheet

Assets	Amount	Liabilities	Amount
Current Assets	Xxxx	Current Liabilities	Xxxx
Financial Assets	Xxxx	Non-Current Liabilities	xxxx
Fixed Assets	Xxxx	**Total Liabilities**	**xxxx**
Natural Resource Assets, Social and Environmental Investments: **(registration fees for PIRT, halal audit fees, cost of creating sapiteng)**	Xxxx		
Intangible Assets	Xxxx	**Equity**	
Other Assets	Xxxx	Share Capital	xxxx
		Retained Earnings	xxxx
		Green Investments (CSR)	xxxx
Assets	**Amount**	**Liabilities**	**Amount**
		Total Equity	**xxxx**
Total Assets	**Xxxx**	**Total Liabilities & Equity**	**xxxx**

Source: Proceed Data, 2023

Table 7. Green Income Statement

Revenue	Amount
Sales Revenue	xxxx
Other Income	xxxx
Total Revenue	**xxxx**[a)]
Expenses	
Cost of Goods Sold	xxxx
Operating Expenses	xxxx
Environmental Costs **(purchasing sacks, shipping costs)**	xxxx
Total Expenses	**xxxx**[b)]
Net Income (a-b)	**xxxx**

Source: Proceed Data, 2023

C. Understanding of Environmental Cost Reporting in Financial Statements by Rambak Industry Centers in Tulungagung Regency

Owners of rambak industry centers in Tulungagung Regency do not yet have an understanding or knowledge regarding environmental costs that arise from environmental activities. The owners also lack comprehension of green accounting practices in terms of recognition, measurement, and disclosure/presentation. The understanding of the owners regarding the recognition, measurement, and reporting of environmental costs will be aligned with Table 8 below.

Table 8 Understanding of Green Accounting in Rambak Industry Centers in Tulungagung Regency

Aspects of Understanding Green Accounting Treatment	Conventional Accounting	Green Accounting
Recognition	V	X
Measurement	V	X
Disclosure/Presentation	V	X

Source: Proceed Data, 2023

Conclusion

The conclusion of this study is that the rambak industry centers in Tulungagung Regency have managed their industrial waste and reported it as costs in the income statement. The environmental costs recorded include the cost of purchasing sacks, shipping costs, PIRT registration fees, the cost of creating sapiteng (lime water disposal tanks), and halal audit fees. These five environmental costs fall into the categories of environmental prevention costs and environmental detection costs. The rambak industry centers have not yet understood financial reporting based on the concept of green accounting. The limitation of this study is that it only examines one type of industry around the Ngrowo River. Future research could investigate the treatment of environmental costs for the textile industry in the Ngrowo River area.

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