# The Implementation of Green Accounting in Fish Canning Factories in Pengambengan Village, Jembrana Regency

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#### ABSTRACT

This study explains the implementation of green accounting in Pengambengan Village, Jembrana Regency. This research is included in the type of descriptive research with a qualitative approach. The data collection techniques used include observation, interviews, and documents. The research subjects were determined based on the purposive sampling method and data analysis using Miles and Huberman. The results of the study showed that the classification of environmental costs carried out by the fish canning factory in Pengambengan Village, Jembrana Regency consisted of prevention costs, detection costs and internal failure costs. There is no external failure cost because the waste generated from the factory production process is not disposed of into the surrounding environment such as the beach but is processed by the company itself. The stages of environmental cost allocation consist of identification, recognition, measurement, presentation and disclosure.

Keywords: Environmental costs; Green accounting; Implementation

#### INTRODUCTION

The legal basis related to limited liability companies is regulated based on Law of the Republic of Indonesia No. 40 of 2007, especially in Chapter 5 Article 74 which discusses social and environmental responsibility. This regulation stipulates that companies that carry out business activities in the field or related to natural resources are obliged to carry out social and environmental responsibilities. Therefore, limited liability companies (PT) must budget and pay attention to environmental costs as part of the company's costs, with its implementation must prioritize propriety and fairness. If the company does not meet this obligation, it will be sanctioned based on the applicable provisions. The purpose of this provision is to support sustainable economic development that improves living standards and is in accordance with the environment, which benefits companies, local communities, and society in general.

The costs budgeted by a company for social and environmental responsibility are included in the calculation of environmental accounting, which is also known as green accounting. According to Nurafika & Sari (2019), green accounting is the cost incurred by companies to take environmentally friendly actions in an effort to preserve the environment in their business activities. These environmental conservation activities will result in environmental costs that must be borne by the company.

One of the goals of green accounting is to be able to overcome waste opportunities that arise, namely by allocating funds related to cleanliness on a regular basis. In accordance with the statement of Lako (2018) which states that green accounting is an accounting that reports information related to finance, social and environmental to maintain environmental sustainability. Green accounting focuses on the concept of accounting science that pays attention to the impact of business unit activities on the surrounding environmental conditions. The implementation of green accounting can maintain business sustainability, the quality of the natural environment and also good judgment from the community.

One type of company that operates in the field of natural resources is a fish canning company. According to Marta et al (2021), liquid waste produced by the fishing industry, including canning, freezing (cold storage), seaweed processing, and making fishmeal, has such a large volume. This is due to the high consumption of water for the processing process, cleaning of raw materials, and equipment. This waste can cause pollution or environmental disturbances, such as a decrease in oxygen levels in water, which can lead to the death of organisms and cause an unpleasant odor.

Fish canning companies are generally located in coastal areas, such as in Pengambengan Village, Jembrana Regency, Bali Province. Based on Jembrana Regency Regional Regulation No. 7 of 2002 concerning the Jembrana Regency Regional Spatial Plan, Pengambengan Village is designated as a

fishery industrial area. There are several fish processing companies in Pengambengan Village, namely PT. Bali Maya Permai, PT. Indo Bali, PT. Indo Citra, PT. Indohamafish, PT. Sarana Tani Pratama, and PT. Bumi Bali Mina. Based on observations made with Mrs. Fitri as a community member in Pengambengan Village, he said that the problems that occur in Pengambengan Village, Jembrana Regency are factory waste dumped around the beach, the smell of the production of fish canning factories that is strong, diesel prices are quite high for fishermen but fish prices are relatively low.

One of the largest fish canning companies in Pengambengan Village is PT. Indohamafish which has been established since 1989. This PT is a large fish canning company in Pengambengan Village, so the waste produced from the production process is quite large. Based on initial observations made with Mrs. Nunung as the financial staff of PT. Indohamafish, he said PT Indohamafish had incurred environmental costs in the treatment of waste in the form of aval waste (tails and fish heads). However, the smell produced from the production process is still smelled. Therefore, research is needed at PT. Indohamafish in Pengambengan Village, Jembrana Regency.

#### LITERATUR REVIEW

# **Grand Theory**

Dowling and Pfeffer (1975) put forward a theory of legitimacy that explains the relationship between companies and society. This theory emphasizes the importance of a corporate governance system that is oriented towards relationships with individuals, communities, social groups, and the government (Dewi & Wardani, 2022). This reflects the existence of a social contract, which is realized through the disclosure of social and environmental information by the company to the public, in order to gain legitimacy from the surrounding environment.

Legitimacy Theory can also be interpreted as a mutually dependent relationship between a company and society. Therefore, maintaining harmonious relationships is important so that the company can continue its activities in a sustainable manner. The mismatch of values between the company and the community can affect the company's operational continuity. This situation generally occurs due to the company's lack of awareness of the potential impact of its bus

# **Green Accounting**

Green Accounting is a process that includes the recognition, measurement of value, recording, summarizing, reporting, and disclosure of information related to events, transactions, objects, or impacts of economic, environmental, and social activities. This process is carried out in a complete, integrated, and relevant manner, and aims to provide benefits for stakeholders in the decision-making process and management of economic and non-economic aspects (Lako, 2018). Basically, environmental accounting asks companies and organizations to recognize the benefits they derive from the environment. It is imperative for such companies and organizations to increase their efforts to pay attention to sustainable environmental management.

The concept of Green Accounting emerged in Europe in the 1970s as a response to pressure exerted by non-governmental agencies and increasing public concern about the environment Citrayantie et al (2020). The community asks the company not only to focus on industrial activities solely for business purposes, but also to manage the environment. Green Accounting is an accounting that calculates and records prevention costs and costs incurred as a result of the company's operational activities that affect society and the environment. *Green Accounting* is the first step in addressing environmental issues, and its implementation can improve a company's ability to reduce the environmental impact it faces.

According to Lako (2018), the purpose of environmental accounting is to provide accounting information that includes financial (economic), social, and environmental aspects in an integrated report. This information is intended to be used by stakeholders in assessing and making decisions related to investment, economy, managerial, and various other interests.

The presentation of complete financial information has advantages for shareholders, management, creditors, customers, consumers, employees, the government and the wider community to provide a complete assessment and evaluation regarding the financial position. This is in accordance with Lako

(2018) that interested parties can find out comprehensive accounting information related to the quality of management in managing businesses that have social and environmental responsibility as the main requirement in determining the sustainability of business unit growth and the movement of business unit profits in the long term.

Environmental accounting plays a role in supporting financial accounting, revenue accounting, and managerial accounting in the company's internal operations. The main focus is to make environmental accounting a means of communication in managerial decision-making at the internal level. According to the United States Environmental Protection Agency (EPA) in Nurafika & Sari (2019) the role of environmental accounting is: "one of the main functions of environmental accounting is to describe environmental costs so that they can be noticed by the company's stakeholders. This can encourage efforts to identify ways to reduce or avoid these costs, while improving the quality of the environment."

Environmental accounting is an important aspect that must be seriously considered because it is required by laws and regulations number 40 of 2007. In addition, the triple bottom line theory introduced by John Elkington in 1994 reinforces this by stating that operating profit is not the only factor that determines the sustainability and growth of the company, but also in the company's actions towards the environment and social justice to achieve sustainable development Maricar & Priyawan (2024). This theory does not only consider the profit aspect, but also involves the people (society) and the planet (environment).iness activities and an indifference to the expectations of the surrounding community, where the company often focuses more on maximizing profits.(Dewi & Wardani, 2022)

#### **Environmental Costs**

Environmental costs are costs that arise due to a decrease in environmental standards caused by the company's operating activities Anis et al (2020). Environmental costs must be presented in a separate form from the financial statements, in the sense that companies need to make a special report on environmental costs. This report conveys important information for internal and external parties as a guide when making decisions related to environmental impacts Franciska et al (2019). The correlation between environmental costs and green accounting is that green accounting groups the costs that must be borne by a company for environmental conservation in its business practices. These environmental conservation activities will result in environmental costs that must be paid by the company. The definitions of environmental costs based on the Environmental Protection Agency (EPA) include:

- a. Environmental costs include costs related to actions that need to be taken or that have been taken to address the environmental impact of the company's activities, in accordance with the company's environmental goals and ideals related to environmental responsibility.
- b. Environmental costs include internal and external costs related to the overall costs arising from the impact of environmental pollution and its control efforts.
- c. Environmental costs are the use of resources caused by activities to: 1) Prevention or reduction of waste and pollution; 2) Compliance with environmental regulations and company rules; 3) Handling failures in complying with environmental regulations and policies.

Based on the explanation above, it can be concluded that environmental costs include internal and external costs incurred to address the environmental impact resulting from the company's activities. So it is hoped that it will not cause environmental damage.

# **Classification of Environmental Costs**

In the managerial accounting book Hansen & Mowen (2009) environmental costs are classified into four categories, namely:

- a. Prevention costs are costs incurred for activities that aim to prevent the occurrence of waste or waste that has the potential to pollute the environment. Examples of prevention activities include evaluation and selection of suppliers, assessment and selection of pollution control tools, employee training, environmental risk audits, environmental impact studies, environmental research, development of environmental management systems, and product recycling.
- b. Detection cost is a cost used for activities that aim to ensure that products, processes, and other activities in the company comply with applicable environmental standards. Examples of

- detection activities include: conducting pollution testing, product inspections and processes to ensure compliance with environmental standards, developing environmental performance measures, measuring pollution levels, auditing environmental activities, and verifying the environmental performance of suppliers.
- c. Internal failure cost is an expense incurred for activities that are required due to the production of waste or waste that is not disposed of into the surrounding environment. This means that the cost of internal failure arises to manage and process the waste and waste generated during the production process. Examples of internal failure activities include: operation of equipment to reduce or eliminate pollution, licensing of facilities to treat waste, maintenance of pollution prevention equipment, treatment and disposal of toxic waste, retreatment of residual materials, and operation of equipment to reduce or eliminate pollution.
- d. External failure cost is the cost used for activities after waste or garbage is disposed of into the environment. External failure costs are divided into two categories: realized external failure costs, which are costs borne and paid by the company. External failure costs that are not realized or social costs, which are costs incurred by the company but borne and paid by external parties. Examples of external failure costs include: cleanup of polluted lakes, cleanup of polluted soils, loss of jobs due to pollution, and cleanup of spilled oil.

# **Stages of Cost Allocation Treatment**

In Sukirman & Suciati (2019) The grouping at the stage of environmental analysis is:

a. Identification

The first step taken by the company is to determine the cost in managing external countermeasures by identifying the negative impact of economic events that may occur in its operational activities. Once these impacts are identified, those economic events are recorded as part of the company's financial activities.

- b. Confession
  - Once the negative impact of an economic event is identified, this element is recorded as an account or expense account at the time benefits are received and the amount has been spent.
- c. Measurement
  - Companies usually use a predetermined monetary unit to measure the cost of environmental management or refer to the realization of costs from the previous period. The goal is to get the amount as well as the value that is relevant to the actual needs of the company at all times. This measurement aims to determine the allocation of financing that is appropriate to the circumstances of each company, which may have different measurement standards.
- d. Serving
  - In the administrative and general costs section, environmental management costs are presented together with other similar unit costs. There is no clear standard on how a company's environmental financing is allocated, such environmental costs can be recorded on financial statements with various account names. Environmental cost reporting has an important role for organizations that want to manage and control environmental costs. A good environmental cost report presents a breakdown of environmental costs according to the cost classification.
- e. Disclosure
  - Environmental accounting reports aim to convey environmental accounting data based on the perspective of the internal functions of environmental accounting. These disclosures fall under the category of voluntary disclosure. Environmental accounting disclosures are intended to keep records of environmental conservation actions taken by companies or other organizations, as well as of the interests of public companies as well as local public organizations. The purpose of the disclosure of corporate social and environmental responsibility is to show the company's activities and the impact they have on society, the environment, employees, consumers, and other parties.

# RESEARCH METHOD

This research is a type of descriptive research with a qualitative approach. This research was carried out in Pengambengan Village, Jembrana Regency. The types of data used are primary data and secondary data. The data collection method uses interview, observation, and document methods.

The research was carried out in Pengambengan Village, Jembrana Regency. The company used as a reference in this study is PT. Indohamafish. This company was chosen with the consideration of one of the fish canning factories that is quite large and has been operating for a long time since 1989 in Pengambengan Village, Jembrana Regency, in the initial observation of the main informant, namely the financial staff, also said that they had used environmental costs, but still felt an unpleasant smell.

The purposive sampling technique is used to select research subjects, namely based on predetermined criteria. The purposive sampling technique is used to non-randomly select informants who meet certain criteria or characteristics. These criteria are people who are in contact with production waste processing activities and who are likely to feel the impact of production waste. The subject of this study involves two types of informants, namely:

# a. Principal Informant

The main informant of this research is the financial staff of PT. Indohamafish in Pengambengan Village, Jembrana Regency.

# b. Supporting Informants

The supporting informants for this research are waste processing staff and the community around the factory who have the potential to feel the impact of the activities of PT. Indohamafish in Pengambengan Village, Jembrana Regency.

The operational definition of the concept explains the understanding of the concept to be studied. The concepts studied are as follows:

# a. Green Accounting

In this study, green accounting refers to accounting that calculates and records prevention costs and costs that arise as a result of the company's operational activities that affect the environment and society. The calculation of environmental costs is made based on problems that occur and will occur related to the processing of production products at PT. Indohamafish.

#### a. Primary Data

Observations and interviews with predetermined informants were used to obtain primary data in this study, namely financial staff, waste treatment staff, and the community around the PT Indohamafish factory.

# b. Secondary Data

Secondary data functions as a support for research obtained from the main data source in the form of documents related to the research being carried out.

The data collection method is a method used by researchers to obtain information that is in accordance with the purpose of the research. The data collection methods used are as follows:

# a. Observation

This research method uses observation to see, describe and analyze how the implementation of green accounting in PT. Indohamafish.

#### b. Interview

The researcher conducted an interview with the staff of PT. Indohamafish in Pengambengan Village, Jembrana District. The interview was conducted directly with the main informant using interview guidelines made and prepared by the researcher regarding the implementation of green accounting at PT Indohamafish. The researcher also conducted interviews with supporting informants, namely waste treatment staff and the surrounding community to ensure the correctness of the information obtained from the main informant.

#### c. Document

The documents used are documents related to the research carried out such as financial records regarding environmental costs, environmental permit documents and documentation that will be needed later in the research. The document is used as the main data support for analysis.

The data analysis method used in this study aims to analyze data obtained from observations, interviews, and documents. This study uses the theory of Miles & Huberman (2014) in its data analysis method, which includes the following steps:

# a. Data Reduction

The process of analyzing data begins with reviewing all data that has been collected from various sources such as observations, interviews, and documents which will then be reduced to data, which is to simplify all data used by researchers in the field. Then the data is categorized to the stage of cost allocation.

# b. Data Presentation

The presentation of data is arranged by sub-chapter of the elements of the implementation of green accounting at PT Indohamafish. The data identified included the classification of environmental costs and the stage of environmental cost allocation.

#### c. Conclusion

The final stage in this study is the drawing of conclusions, after going through the reduction stage and presentation of data. The conclusion of this study was carried out to verify the object of research in the field, related to the application of green accounting.

The triangulation technique was used to test the validity of the data in this study. The researcher applies source triangulation, which aims to examine data obtained from a variety of different sources. Answers from supporting informants such as waste treatment staff and the community around PT. Indohamafish, compared to the answer from the main informant, namely the staff of PT. Indohamafish and supporting documents

# RESULTS AND DISCUSSION

Based on the results of research conducted on one of the fish canning companies in Pengambengan Village, Jembrana Regency, it was found that the company has implemented green accounting practices, especially in the classification and stages of environmental cost allocation. The data used in this study was obtained from PT. Indohamafish, as an example of a representative company that has been operating in the region for a long time.

# **Environmental Cost Classification of PT. Indohamafish**

#### a. Prevention costs

Prevention costs are costs incurred to prevent waste from the production activities of PT. Indohamafish. Prevention costs and prevention activities carried out by PT. Indohamafish includes:

**Table 1.** Prevention Costs of PT. Indohamafish

No.	Prevention Costs of PT. Indohamafish
1.	Cost of WWTP machine construction
2.	Cost of making monitoring wells
3.	WWTP Equipment
4.	Evaluation and selection of fish suppliers
5.	Tools to control pollution (WWTP machines and boilers)
6.	Train employees
7.	Recycling sardine products

Source: Processed by researchers based on observations, interviews and documents

Based on the results of interviews with the financial staff of PT. Indohamafish, Mr. Budi Sastrawan, said the prevention costs incurred by the company every month are as follows:

"Usually we only use it for wastewater tests which are carried out every month in the range of Rp. 1,000,000. For air pollution, it is carried out every six months in the range of Rp. 20,000,000." (I Made Budi Sastrawan)

#### b. Detection costs

Detection costs are costs incurred by PT. Indohamafish to ensure that the activities carried out meet the applicable environmental standards. The cost of detection and detection activities carried out by PT. Indohamafish includes:

Table 2. Detection Costs of PT. Indohamafish

No.	Detection Costs of PT. Indohamafish
1.	Inlet and outlet laboratory test fee
2.	Bacterial enzyme costs
3.	Monitoring well test fee once every 6 months
4.	Wastewater test
5.	Test once every 6 months
6.	Environmental activity inspection from the environmental agency
7.	Ensuring the environmental performance of suppliers

Source: Processed by researchers based on observations, interviews and documents

#### c. Internal failure costs

The cost of internal failure is the cost incurred to overcome the occurrence of factory production activities so that they are not disposed of in the surrounding environment. The cost of internal failure and internal failure activities carried out by PT. Indohamafish includes:

**Table 3**. The Cost of Internal Failure of PT. Indohamafish

No.	The Cost of Internal Failure of PT. Indohamafish
1.	WWTP machine maintenance costs
2.	Cost of making canteen/domestic waste sapitenk
3.	Cost of toilet suction
4.	Operator fees
5.	Transportation costs
6.	Operation of WWTP machines and boiler engines
7.	B3 waste collection

Source: Processed by researchers based on observations, interviews and documents

#### d. External failure costs

External failure costs are costs incurred by waste or waste that results in losses to other parties in the environment around the factory. Waste or factory waste is not disposed of into the environment around the factory such as the beach, because the waste is directly on the WWTP machine. As said by Mr. Budi Sastrawan as follows:

"No, the community does not participate in spending related costs from the company's waste." (I Made Budi Sastrawan)

This statement was also corroborated by a statement from Mrs. Fitri as the community around the factory who said that waste from the company was not disposed of into the surrounding environment but was directly taken care of by the company. In addition, the community also does not incur costs related to the company's production waste.

# **Stages of Environmental Cost Allocation**

# a. Identification

Cost identification is based on the costs incurred or paid in the waste treatment process. PT. Indohamafish in carrying out production activities. Before carrying out production activities, PT. Indohamafish first identifies waste and pollution that will later be generated and have an impact on the surrounding environment. Based on the documents obtained, there are management plan costs, which are as follows:

Table 4. Management Plan Cost

Fees	Price
WWTP Construction Costs	IDR 2,000,000,000
Inlet and outlet Laboratory Test Fee	IDR 1,332,000
Bacteria Enzyme Cost	IDR 6,660,000
Cost of Making a Monitoring Well 2x1,000,000	IDR 2,000,000
WWTP equipment (wheels, flowmeters)	IDR 10,000,000
WWTP machine maintenance costs	IDR 2,500,000
Monitoring well test fee once every 6 months	IDR 2,200,000
Cost of making canteen/domestic waste sapitenk	IDR 5,000,000
Toilet suction cost @350,000 5x suction	IDR 1,750,000
Operator fees	IDR 5,000,000

Based on the table above, it can be seen that before carrying out production activities, PT. Indohamafish first identifies what negative impacts will be generated from factory waste. After being identified and then included in the management plan cost recording in the internal environmental cost report of PT. Indohamafish.

# b. Confession

Once the negative impact of the factory production process is identified, then the next stage is recognition. PT. Indohamafish will immediately record and acknowledge it as a cost if the cost has been incurred due to cash outflow. The following are the details of the environmental costs that have been incurred by PT. Indohamafish in 2024:

Table 5. Environmental Cost 2024

Wastewater test (once 1 month)						
Sterile bottles	4	IDR 50,000	IDR 200,000			
Jerry	2	IDR 15,000	IDR 30,000			
Inlet and outlet test fee	2	IDR 410,000	IDR 820,000			
Transportation costs	1	IDR 20,000	IDR 20,000			
TOTAL			IDR 1,070,000			
Test once every 6 months						
Boiler emission test		IDR 3,000,000	IDR 6,000,000			
Smell test	1	IDR 5,000,000	IDR 5,000,000			
Noise test (indoor)	1	IDR 500,000	IDR 500,000			
Noise test (outdoor)	2	IDR 1,000,000	IDR 2,000,000			
Transportation costs		IDR 400,000	IDR 400,000			
Ambient air test	1	IDR 6,500,000	IDR 6,500.00			
TOTAL			IDR 20,400,000			

Source: details of the 2024 environmental costs of PT. Indohamafish

Based on the table above, it can be seen that the environmental costs incurred by PT. Indohamafish in 2024 is divided into two categories, namely wastewater test (once every 1 month) and test once every 6 months. These expenses that have been incurred are acknowledged by the company and recorded in the general financial statements as miscellaneous expense accounts.

# c. Measurement

The measurement basis used to measure the environmental costs of PT. Indohamafish uses rupiah monetary units with a reference to cost realization in the previous period. PT. Indohamafish also does not have a standard in measurement, only following regulations from the government. If there is a new regulation then the standard will follow as well. This is in accordance with what was conveyed by Mr. Budi as the financial staff of PT. Indohamafish is: "Looking at how much the cost will be calculated from one month. For the calculation in the report, every year it will only be accumulated how much costs are incurred. And that will later be a reference for the next year". (I Made Budi Sastrawan)

"There is no standard, we just follow the regulations. If there is a new regulation then the standard follows as well. Like just yesterday there was a new regulation from the Ministry of Environment and Forestry, they asked for more parameters to be measured, so the cost is also higher". (I Made Budi Sastrawan)

#### d. Serving

The presentation of environmental costs at PT. Indohamafish was revealed by Mr. Budi as the financial staff in the general financial statements that are included in the miscellaneous expense account. The presentation of financial statements can be carried out using a different account name because there are no standard provisions yet. PT. Indohamafish in presenting environmental cost reports by recording and acknowledging environmental costs which are used as one scope with other cognate accounts.

#### e. Disclosure

Disclosure concerns whether or not the company's financial information or accounting policies are disclosed. In addition, disclosure aims to show the company's activities and the impact they have on society, the environment, employees, consumers, and other parties. Disclosure is a form of transparency that the company does to the public. One way to disclose environmental costs is through records on financial statements.

Based on an interview with Mr. Budi as the financial staff of PT. Indohamafish, he said that regarding how the disclosure of environmental costs was carried out at PT. Indohamafish is as follows:

"It is disclosed in the financial statements combined with other expense accounts, if more specifically, who knows from the tax side, because they report there" (I Made Budi Sastrawan)

#### CONCLUSION

The fish canning company in Pengambengan Village refers to the data of PT. Indohamafish has implemented waste management well through the identification of environmental impacts and management of environmental costs, such as prevention, detection, and internal failure costs. Although companies already incur costs to handle waste, the environmental cost report in the general financial statements is not presented separately and is more combined with other miscellaneous expense accounts. In addition, although the smell of fish is still smelled, the impact of air pollution and wastewater has been handled with various treatment efforts, such as the use of boiler machines and wastewater treatment systems that are in accordance with environmental quality standards.

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