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Analysis of Biological Assets Measurement and Treatment by Using Fair Value and Historical Cost Approaches on Plantatiton Entities Based on PSAK 69 (Study in PT Dewi Sri)

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ABSTRACT

Biological assets are assets in the form of animals and plants regulated in PSAK 69 which starts to be used effectively in 2018 which allows not many companies to apply this PSAK. The purpose of this research is to understand and analyze the biological assets measurement and treatment using fair value and historical cost approaches on plantation entities based on PSAK 69 in PT Dewi Sri. The research method was descriptive qualitative. The data collection techniques were documentation and interviews, which were used to obtain information data on biological assets of coffee plants and information on recording, recognition, and disclosure of biological assets on coffee plants in PT Dewi Sri. The result of this research showed that PT Dewi Sri did disclosures, recognition, and measurement in accordance with the concept of PSAK 69. However, there were differences from the measurement of biological assets on coffee plants with the concept of PSAK 69 which used market value in measuring fair value. PT Dewi Sri measured the biological assets of coffee plants based on historical cost with the recognition concept of biological assets based on PSAK 69. Therefore, PT Dewi Sri was considered effective in recognizing, measuring, and disclosing its biological assets.

INTRODUCTION

The agricultural industry has experienced rapid growth from 1960 to the present. This industry encompasses sectors such as rubber, palm oil, poultry farming, and fish farming. This progress has been driven by the increasing needs of humanity, both in food processing and in aspects related to the dynamics of human life. Given the development of the agricultural industry, it is essential for this sector to have guidelines in place for the preparation of regulations and financial reports.

In 2015, the exposure draft of PSAK 69-Agriculture was established as PSAK 69, providing guidelines and regulations for the agricultural sector, and became applicable for annual financial reports starting on January 1, 2018. This regulation is still relatively new, so in practice, not many companies have fully implemented PSAK 69. Among the companies that have not yet fully implemented PSAK 69 is PT Perkebunan Nusantara III Medan. (Batubara, 2019), PT Harta Mulia (Prasetyaning et al., 2023), Brawijaya Farm (Masnur et al., 2023), and PT Dharma Satya Nusantara Tbk (Kuncara, 2021).

The characteristics of PSAK 69 include the increase in assets as seen from the asset growth process, as well as income related to the increase in assets or when those assets are sold. However, due to these characteristics, the use of the Cost model (historical cost) is difficult to apply. The development and growth in the Cost model (historical cost) do not take

into account or recognize the development and growth, which is why PSAK 69 uses the fair value concept in the measurement of biological assets and agricultural products.

According to PSAK 69, biological assets or agricultural products can be recognized if they meet criteria similar to asset recognition criteria. This is calculated at the time of initial recognition and at the end of the reporting period, at fair value less costs to sell. Changes in the fair value of assets are recorded in the profit and loss statement for that period. If fair value cannot be measured accurately, there is an exception.

This study aims to understand and analyze the measurement and treatment of biological assets using the fair value and historical cost approaches based on PSAK 69 at PT Dewi Sri.

LITERATURE REVIEW

1. Definition Biological assets

Referring to PSAK 69, biological assets are assets consisting of plants and animals. This means that biological assets are those associated with companies operating in the livestock and plantation sectors, involving living organisms such as plants and animals. Below are examples of biological assets and the products they produce:

Table 1. EXAMPLES OF BIOLOGICAL ASSETS OF AGRICULTURAL PRODUCTS AND PRODUCTS RESULTS

Biological assets	Agricultural Products	Product Results after Harvest
Sheep	Wool	Yarn, Carpet
Trees in a hardwood forest	Felled Trees	Logs, pieces of wood
Dairy cows	Milk	Cheese
Pig	Cut Meat	Sausage, ham
Cotton Plants	Harvest Cotton	Yarn, Clothing
Sugarcane	Harvest Sugarcane	Sugar
Tobacco Plants	Tobacco Leaves	Tobacco
Tea Plants	The Leaf	Tea
Grape Plants	Grapes	Wine Drinks
Fruit plants	Fruit Quotes	Processed Fruit
Palm Oil Tree	Fresh Fruit Bunches	Palm oil
Rubber tree	Rubber Latex	Rubber processed products
Certain plants, such as tea plants, grapevines, oil palm trees, and rubber trees, meet the definition of bearer plants and fall within the scope of PSAK 16: Fixed Assets. However, agricultural products fall within the scope of PSAK 69: Agriculture.		

Source: PSAK 69 (2018)

Based on the definition provided, it can be concluded that biological assets are assets associated with companies operating in the livestock and plantation sectors, consisting of animals and plants. These assets have specific characteristics, such as growth, degeneration, and procreation.

2. Characteristics of Biological Assets

Biological assets have unique characteristics, including activities such as growth, degeneration, and procreation, which are not found in other types of assets. According to PSAK 69, the characteristics of biological assets in agricultural activities include:

A. **Ability to Change**. Biological assets have the capacity to undergo transformation through processes such as growth, degeneration, and procreation.
B. **Management of Change**. This involves supporting biological transformation by maintaining conditions to ensure the process operates optimally.
C. **Measurement of Change.** Changes in quality and quantity can be measured and monitored regularly as part of management functions.

According to PSAK 69, biological assets are classified into two categories: **productive biological assets** and **non-productive biological assets**. Productive biological assets are those that are ready to be harvested or consumed, while non-productive biological assets are those that have not yet reached the stage where they can be harvested or consumed.

3. Definition of Statement of Financial Accounting Standards (PSAK) 69:

According to PSAK 69, it regulates the recognition, measurement, and disclosure of agricultural activities. According Kuncara (2021), PSAK 69 broadly governs the recognition of biological assets once they meet criteria similar to those for other asset recognition. These assets are valued at the time of initial recognition and at each reporting period, based on fair value less costs to sell. PSAK 69 establishes rules for how agricultural activities are recognized, measured, and disclosed.

A. Recognition of Biological Assets

According to PSAK 69, an entity recognizes agricultural products or biological assets when:

1) The entity manages biological assets as a result of past events;
2) Future economic benefits associated with the biological assets are expected to flow to the entity; and
3) The acquisition cost or fair value of the biological assets can be measured reliably.

In financial statement preparation, biological assets can be classified as either current or non-current assets. Biological assets with a harvesting period of less than one year are classified as current assets. Those with a harvesting period exceeding one year are classified as non-current assets. Therefore, the classification into current and non-current assets must take these aspects into account.

B. Biological Asset Measurement

According to PSAK 69, biological assets are measured at the time of initial recognition and at each reporting period, at fair value less costs to sell. According to Kuncara (2021), the value of biological assets can be calculated by considering the acquisition cost, especially when fair value can be estimated reliably, particularly if the biological transformation process has already begun and has minimal impact. The measurement of biological assets according to PSAK 69, as follows:

1) Measurement if the fair value can be measured reliably, as follows:

Fair value – Cost of Sales

2) Measurement: If the fair value cannot be measured reliably, then PSAK 69 makes exceptions to this, as follows:

Acquisition Cost – Accumulated depreciation – Impairment in Value

To measure fair value reliably, an entity must also explain the method used to determine that fair value. According to PSAK 69, during the initial recognition period of biological assets and agricultural products, the entity must disclose the combined profit that arises. The entity should describe each category of biological assets, providing both qualitative and quantitative descriptions. It should also differentiate between bearer biological assets, mature assets, and immature assets.

1. Measurement Method
   A. Definition of Fair Value Measurement Method
      According to the Board (2022), fair value is defined as "a fair value measurement is for a particular asset or liability." Fair value reflects the actual value of an asset or liability, providing a true representation of its worth.
   B. Definition of Historical Cost Measurement Method
      Historical cost is an accounting concept based on valuing assets at the purchase price at the time they were acquired by the company. This concept is considered a reliable indicator because it is based on external documentation (Tkachuk, 2019).

METHODS

1. Research Object

According to Sugiyono (2019, p. 4), the research object is the target of scientific study aimed at obtaining valid and reliable data about a specific topic or variable, with particular goals and uses. The research object in this study is Biological Assets of Coffee Plants and the recording of Biological Assets of Coffee Plants at PT Dewi Sri for the period 2019 - 2023.

2. Type of Research

The type of research used is applied research. According to Sugiyono (2019, p. 13), applied research aims to implement, test, and evaluate the effectiveness of a theory in solving practical problems. This study employs a descriptive qualitative method with applied research objectives, which will result in an analysis of the measurement and treatment of biological assets using fair value and historical cost approaches based on PSAK 69 at PT Dewi Sri. The findings are intended to serve as evaluation material for the company's future planning regarding the implementation of biological asset accounting.

RESULTS

Table 2. Discussion

Recognition of Biological Assets	Based on the accounting policies applied by PT Dewi Sri, coffee plants are classified into non-productive and productive plants. According to supporting data, the number of non-productive plants is indicated for the year 2019, marking the initial year of planting, and these plants become productive by 2023. Non-productive plants are defined as those still in the nursery phase until they grow but have not yet started producing agricultural products. In contrast, productive plants are defined as those that have begun producing agricultural products and are ready for harvest.
Biological Asset Measurement	The biological assets of coffee plants owned by PT Dewi Sri are measured using their acquisition cost. However, there is a difference in measurement compared to other assets. The coffee plants at PT Dewi Sri are measured based on their acquisition cost, with classification into non-productive and productive plants. Each classification is measured based on the costs incurred during the growth period of the plants.
Biological Asset Disclosure	1. The biological assets of coffee plants are valued based on acquisition cost, or cost of acquisition, determined by the costs incurred during the plant growth period. 2. Coffee plants are classified into non-productive and productive plants. Research data from 2019-2022 pertains to non-productive coffee plants, while data from 2023 pertains to productive coffee plants. The biological assets of coffee plants are disclosed in the statement of financial position under non-current assets, with separate classifications for non-productive and productive plants. The value of the assets varies depending on their growth period.

Source: Author's compilation

DISCUSSION

1. Recognition

At PT Dewi Sri, the recognition of biological assets for coffee plants aligns with PSAK 69, categorizing them into non-productive and productive plants based on the growth process and age of the coffee plants. According to the historical cost method of recognition, assets are recorded based on their acquisition cost without requiring classification into specific categories.

2. Measurement

The measurement of biological assets at PT Dewi Sri differs from PSAK 69. Under PSAK 69, biological assets are measured at fair value, reflecting market value based on specific categories. PT Dewi Sri measures the biological assets of coffee plants based on their acquisition cost by accounting for the costs incurred during the plant's growth period. PT

Dewi Sri classifies plants based on type and age, which is considered effective for measuring its coffee plants' biological assets. The difference between PSAK 69 and PT Dewi Sri's measurement lies in the method of measurement.

Below is a table comparing the measurement of biological assets based on the two methods:

Table 3. Measurement of immature biological assets is based on fair value and historical cost

Year	TBM costs/Tree			Fair Value	Historical Cost
	Making Mature Seedlings	Preparation of planting land	TBM costs		
2019	Rp2.165	Rp4.277	Rp3.776	Rp10.218	Rp6.442
2020	Rp0	Rp0	Rp3.896	Rp14.114	Rp6.442
2021	Rp0	Rp0	Rp3.896	Rp18.010	Rp6.442
2022	Rp0	Rp0	Rp3.896	Rp21.906	Rp6.442

Source: Processed by researchers

Table 4. Measurement of biological assets is based on fair value and historical cost

TBM costs 2023	
Snap the garden	Rp1.400.000
Snap	Rp480.000
PLP	Rp487.500
Subtle Regional Office	Rp562.500
Ponggol Settings	Rp201.000
Cube Rempes	Rp150.000
Fertilization (Liquid Fertilizer)	Rp1.003.500
Total Cost Per Tree	Rp2.856
Fair Value	Rp24.762
Historical Costs	Rp6.442

Source: Processed by researchers

The details in the table have been calculated based on the two methods used in this study. The fair value measurement method is calculated based on the acquisition costs used by PT Dewi Sri to measure coffee plant biological assets, accounting for each period in each growth process category. The historical cost method is calculated based on the initial acquisition cost of coffee plant biological assets, which includes only seedling production costs and land preparation costs.

Below is the presentation of journal entries from the recognition of plants to the disclosure of coffee plants, based on the historical cost method and fair value according to PSAK 69.

Table 5. Journal recording based on historical cost and fair value

(In IDR)

Indicator	Based Journal Historical Cost	Based Recommendation Journal PSAK 69

Recognition of Biological Assets	TBM 147,521,800 Cash/Debt 147,521,800	BM Biological Assets 147,521,800 Cash/Debt 147,521,800 **(based on acquisition cost)** BM Biological Assets 147,000,000 Loss on Biological Assets 521,800 Cash/Debt 147,521,800 **(based on fair value, if the acquisition cost is greater than the fair value)** BM Biological Assets 148,500,000 Cash/Debt 147,521,800 Profit from biological assets 978,200 **(based on fair value, if the acquisition cost is less than the fair value)**
Biological Asset Measurement:		
1. Annual TBM costs	TBM 86,470,400 Cash/Debt 86,470,400 **(2019, Rp. 3,776 x 22,900 trees**) TBM 36,988,624 Cash/Debt 36,988,624 **(2020, Rp. 3,896 x 9,494 trees)** TBM 74,136,984 Cash/Debt 74,136,984 **(2021, Rp. 3,896 x 19,029 trees**) TBM 76,610,944 Cash/Debt 76,610,944 **(In 2022, IDR 3,896 x 19,664 trees)**	Maintenance costs 86,470,400 Cash/Debt 86,470,400 **(2019)** Maintenance costs 36,988,624 Cash/Debt 36,988,624 **(2020)** Maintenance costs 74,136,984 Cash/Debt 74,136,984 **(Year 2021)** Maintenance costs 76,610,944 Cash/Debt 76,610,944 **(Year 2022)**
2. TM fees	TM 835,397,136 Cash/Debt 835,397,136 **(In 2023, IDR 2,856 x 292,506 trees)**	Maintenance costs 835,397,136 Cash/Debt 835,397,136 **(Year 2023)**
Biological Asset Disclosure	TM 421,728,752 TBM 421,728,752 **(The values presented are calculations of TBM 1 costs, TBM 2 costs, TBM 3 costs, and TBM 4 costs and the initial recognition value of biological assets)**	Biological assets M 421,728,752 BM biological assets 421,728,752

Source: Processed by researchers

3. Disclosure

A. Recognition of coffee Plant Biological Asset

PT Dewi Sri has classified biological assets of coffee plants based on the growth process into non-productive and productive plants. This is consistent with PSAK 69, which recommends that entities quantitatively describe each biological asset, differentiating between consumable biological assets and those that are productive or non-productive according to the state of the biological asset.

B. Recognition Method for Depreciation of Biological Assets

According to the analysis, PT Dewi Sri does not record or recognize depreciation of coffee plant biological assets. This aligns with PSAK 69, which does not require depreciation in its measurement. However, if the historical cost method were used, depreciation would be needed for measuring the asset.

C. Reporting in the Financial Position Statement

In the financial position statement, biological assets are categorized as non-current assets. This is consistent with PSAK 69 for asset reporting. Biological assets can be classified as current assets if their life is less than one year and as non-current assets if their life exceeds one year.

CONCLUSION

The research conducted at PT Dewi Sri concludes that, in its implementation, PT Dewi Sri has performed disclosure, recognition, and measurement in accordance with the concepts of PSAK 69. Based on PT Dewi Sri's measurements, there is a difference in implementation compared to PSAK 69, which uses market value to measure fair value. In this case, PT Dewi Sri uses acquisition cost to measure its coffee plant biological assets.

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