

**DEVELOPMENT OF PLANT ACCOUNTING RESEARCH:
EVIDENCE FROM INDONESIA 2017-2021 WITH SUSTAINABILITY VALUE CREATION****Nicholas Renaldo¹, Luciana Fransisca², Achmad Tavip Junaedi³, Suhardjo⁴, Amries Rusli Tanjung⁵,
Teddy Chandra⁶, Andi⁷, and Anton⁸**^{1,2,3,4,5,6,7,8}Institut Bisnis dan Teknologi Pelita IndonesiaEmail: nicholasrenaldo@lecturer.pelitaindonesia.ac.id¹DOI: <https://doi.org/10.35145/bilancia.v9i1.4901>

Received: 16/03/2025, Revised: 30/03/2025, Accepted: 31/03/2025

ABSTRACT

The importance of the quality of financial information so that readers of financial statements can know exactly the fair value of a plant asset. The purpose of this study is to see the development of crop accounting research and to add methods to assess the fair price of plants. The research method uses content analysis from articles for 2017-2021 based on the Harzing's Publish or Perish application. There are three articles that can be used for this research. The results of the study indicate that the determination of the fair price of plants in the financial statements is very important in order to avoid asymmetric information. The results also show that assessing the fair price of plant assets can be done by looking at the future selling price of the asset. Meanwhile, the excess of the fair value assessment will be subject to a final income tax of ten percent. To create sustainable value in crop accounting, it is necessary to create regulations or develop PSAK 69. Recommendations to accountants to present plant assets at fair value to make it easier for shareholders to make decisions and update accounting insights, especially in PSAK which can change at any time in order to make adjustments to the accounts in the financial statements and make newer research for the development of insights scientific research for researchers.

Keywords: Plant Accounting, Fair Value Accounting, Content Analysis, PSAK, Sustainability Value Creation**PERKEMBANGAN PENELITIAN AKUNTANSI TANAMAN:
BUKTI DARI INDONESIA TAHUN 2017-2021 DENGAN PENCIPTAAN NILAI KEBERLANJUTAN****ABSTRAK**

Pentingnya kualitas informasi keuangan agar pembaca laporan keuangan dapat mengetahui dengan tepat nilai wajar dari suatu aset tanaman. Tujuan penelitian ini untuk melihat perkembangan penelitian akuntansi tanaman dan menambahkan metode untuk menilai harga wajar dari tanaman. Metode penelitian menggunakan analisis konten dari artikel tahun 2017-2021 berdasarkan aplikasi Harzing's Publish or Perish. Terdapat tiga buah artikel yang dapat digunakan untuk penelitian ini. Hasil penelitian menunjukkan bahwa penetapan harga wajar tanaman di laporan keuangan sangat penting agar tidak adanya informasi asimetris. Hasil penelitian juga menunjukkan bahwa menilai harga wajar dari aset tanaman dapat dilakukan dengan melihat harga jual masa depan dari aset tersebut. Sedangkan selisih lebih atas penilaian nilai wajar tersebut akan dikenakan pajak penghasilan final sebesar sepuluh persen. Untuk penciptaan nilai keberlanjutan pada akuntansi tanaman, diperlukan membuat regulasi atau mengembangkan PSAK 69. Rekomendasi kepada akuntan untuk menyajikan aset tanaman dengan nilai wajar untuk mempermudah pemegang saham dalam mengambil keputusannya dan memperbarui wawasan akuntansi terutama di PSAK yang bisa berubah sewaktu-waktu agar membuat penyesuaian kembali terhadap akun-akun di laporan keuangan dan membuat penelitian yang lebih baru untuk pengembangan wawasan ilmiah bagi peneliti.

Kata Kunci: Akuntansi Tanaman, Akuntansi Nilai Wajar, Analisis Konten, PSAK, Penciptaan Nilai Keberlanjutan

INTRODUCTION

Indonesia is a country rich in various natural or agricultural commodities. Some countries even call Indonesia the heaven of the world. This is because Indonesia is one of the best spice producers in the world. The role of agricultural products in improving the Indonesian economy today is very large. Many companies in Indonesia are engaged in agriculture. These companies must be able to provide financial information in the form of company financial reports. These financial reports are used as a basis for decision making by company managers.

Companies engaged in agriculture have assets in the form of living things (plants and animals). The process of recognizing, measuring, presenting, and disclosing assets is known as biological assets (PSAK 69). The importance of quality information (Chandra et al., 2018) of finance so that readers of financial statements can know exactly the fair value of an asset, especially plants. An accountant must be able to present the fair value of assets and other accounts in the financial statements. This aims to avoid asymmetric information (Renaldo et al., 2021).

This problem can arise because in general companies only accumulate costs to obtain plant assets until they are ready to harvest without considering their fair value. For plants that have a fairly long age, there will be an imbalance in financial information, if converted into rupiah, the value will be very large. This is proven in research (Rangkuti et al., 2020).

The increase in the price or value of fixed assets in the market causes the value of fixed assets recorded in a company's financial statements to be unreasonable. This is because the value of fixed assets obtained several years ago is no longer the same as the current value. In such circumstances, the company can re-evaluate fixed assets. Revaluation of fixed assets is important because it will affect the value of taxpayer assets, accounting reporting, and tax-related reports. Based on Article 57 paragraph 1, items in the financial statements must be adjusted to reflect the Market Value on the Valuation Date (K. D. K. O. J. K. R. Indonesia, 2020).

An accountant who leads (Putra & Renaldo, 2020) bookkeeping activities must be careful in carrying out the control function (Renaldo et al., 2020) on the fair value assessment of plant assets so that they can create sustainable value. Based on the explanation above, it will be an important study to discuss the development of good and correct plant accounting in Indonesia. This study can add to the literature related to plant accounting and how to measure the fair value of plant assets and add to the literature on creating sustainable value in plant accounting (Correia, 2019).

This research is important because by understanding the development of plant accounting in Indonesia, policy makers will be able to more easily implement plant accounting policies from several guidelines available both domestically and abroad. The results of this study also add a new way to assess the fair value of assets where its application is expected to help accountants in assessing a more accurate fair price. This research also helps create sustainable value in plant accounting.

LITERATURE REVIEW

Plant Assets

Assets are assets that can bring benefits in the present and in the future owned by a company, both tangible and intangible. Assets are economic benefits that will be obtained in the future that are controlled by the company as a result of the past (Rangkuti et al., 2020).

Assets are wealth in the form of money or other tangible objects. Assets are one of the economic resources that provide future business benefits. Assets are resources owned or controlled by individuals, companies, or governments with the expectation of generating future cash flows.

Assets consist of two types, namely current assets and non-current assets. Current assets are assets that can be realized into cash by being sold or used in the company's operating cycle that can be realized within a period of no more than one year or one accounting period. Current assets can be in the form of cash and cash equivalents, inventory, prepaid expenses, equipment, and others whose usage period is no more than one year. While non-current assets are assets that cannot be converted into cash for a period of one accounting period or one year. These assets can be in the form of long-term investments, fixed assets, intangible assets, and others. Productive plants can be categorized as non-current assets because their ownership period is more than one year. By definition, productive plants can be interpreted as living plants that are used to produce products as a result of the plant, and it is expected that the products produced are more than one year or one accounting period and are unlikely to be sold as agricultural products except in very incidental cases (Rangkuti et al., 2020).

Based on PSAK 16 effective as of January 1, 2017, productive plants can be recognized by the company if they meet the following criteria (I. A. Indonesia, 2017): (a) Based on past transactions; the company can control the assets. (b) Future economic benefits will flow to the company. (c) The fair value of an asset can be relied upon

The method of measuring productive plants has several approaches because it has different characteristics from other assets. Productive plants undergo biological transformation so that their value can vary according to changes in their biological transformation. Measuring productive plants based on fair value is a common and generally accepted measurement standard because it is also in accordance with the standards set out in PSAK (Rangkuti et al., 2020).

Based on PSAK 16, productive plants at the time of initial recognition must be measured at acquisition cost, and at the time of reporting must be valued at fair value after deducting estimated costs to sell. The fair value of productive plants is obtained from the price of the productive plants in the active market (I. A. Indonesia, 2017).

The fair value for productive plants determined by active market prices is a reliable price. Some methods used if fair value cannot be determined through active market prices are as follows (Rangkuti et al., 2020): (a) Transaction prices from the end of the previous period can be used as a basis for determining the fair value of productive plants, adjusted to the current condition of productive plant assets. (b) If there are other goods that are similar to the asset, the price can be the same, but adjustments need to be made if possible if there is a possibility of a price difference.

Market Value is an estimate of the amount of money that can be obtained from the exchange of an asset or liability on the Valuation Date, between an interested buyer and an interested seller, in a free transaction, whose marketing is carried out properly, where both Parties each act on the basis of their understanding, prudence, and without coercion (K. D. K. O. J. K. R. Indonesia, 2020).

Discounted net cash flow from the use of productive plantation assets for the future, at the prevailing market discount rate can be used as a means to replace the fair value of productive plants if their fair value cannot be determined. The presentation of productive plants in the notes to the financial statements is in accordance with the application of PSAK 16, as well as fixed assets. It can use the cost model and the revaluation model. If using the revaluation model, at the end of the year it must be adjusted to its fair value after deducting costs to sell, and can increase income in the income statement, and can also increase expenses in the income statement if the carrying value of productive plants is below its fair value. For the harvest is also assessed at its net realizable value, which is the estimated fair value minus the estimated costs to sell, and will increase income in the income statement. Presentation of productive plants in the financial position statement in the fixed assets group with the separation of oil palm plants divided into productive plants and immature plants (I. A. Indonesia, 2017).

Asymmetric Information

Asymmetric information is referred to as the uneven distribution of new information in the capital market in the absence of the necessary commodities in the market. Asymmetric information is a condition of unbalanced information due to the uneven distribution of information between principals and agents. Where managers (agents) have more information about the company's prospects than shareholders (Renaldo et al., 2021).

International Accounting Standard 41

IAS 41 was issued by the International Accounting Standards Committee (IASC) in December 2000, revised in 2009. Biological assets in IAS 41 are defined as "Biological asset is a living animal or plant". If the plant or animal is associated with the company's assets, then the biological asset is an asset in the form of a living thing (plant or animal) owned by the company with the aim of making a profit (Nurhayati et al., 2019).

Financial Accounting Standards Statement 16

This statement aims to regulate the accounting treatment of fixed assets, so that users of financial statements can understand information about an entity's investment in fixed assets, and changes in those investments. The main issues in fixed asset accounting are asset recognition, determination of carrying amount, depreciation charges, and impairment losses on fixed assets (Indonesian Institute of Accountants, 2011).

Paragraph 07: The acquisition cost of a fixed asset shall be recognized as an asset if and only if: (a) it is probable that the entity will obtain future economic benefits attributable to the asset; and (b) the cost of the asset can be measured reliably.

Paragraph 11: Property, plant and equipment may be acquired for safety or environmental reasons. The acquisition of such a property, plant and equipment, although not directly increasing the future economic benefits from an existing property, plant and equipment, may be necessary for an entity to obtain future economic benefits from other related assets. In these circumstances, the acquisition of such a property, plant and equipment qualifies for recognition as an asset, because it enables the entity to obtain future economic benefits from the related assets in excess of the economic benefits that would have been generated had the asset not been acquired. For example, a chemical plant may implement a new chemical handling process in order to comply with environmental requirements for the production and storage of hazardous chemicals; the related plant improvements are recognized as an asset because without them the entity would not be able to produce and sell the chemicals.

Paragraph 12: In accordance with the recognition principle in paragraph 07, an entity should not recognize the costs of day-to-day servicing of an item of property, plant and equipment as part of the asset. These costs are recognized in profit or loss when incurred. Day-to-day servicing costs mainly consist of labor and consumables, including minor spare parts. Expenditures for these are often referred to as "maintenance and repairs" of the item of property, plant and equipment.

Paragraph 15: An item of property, plant and equipment that qualifies for recognition as an asset should initially be measured at cost.

Paragraph 16: The cost of acquiring an item of property, plant and equipment includes: (a) Its acquisition cost, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates; (b) Costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management; (c) The initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located. The obligation for these costs arises when the item is acquired or as the entity uses the item during the period for purposes other than to produce inventories.

Paragraph 23: The acquisition cost of fixed assets is equivalent to the cash value recognized when incurred. If payment for an asset is deferred beyond the normal credit period, the difference between the cash value and the total payment is recognized as interest expense over the credit period unless capitalized in accordance with PSAK 26 (revised 2008): Borrowing Costs.

Paragraph 30: After being recognized as an asset, fixed assets are recorded at acquisition cost less accumulated depreciation and accumulated impairment losses on the asset.

Paragraph 31: After being recognized as an asset, fixed assets whose fair value can be measured reliably must be recorded at the revalued amount, which is the fair value at the revaluation date less accumulated depreciation and accumulated impairment losses that occur after the revaluation date. Revaluations must be carried out with sufficient regularity to ensure that the carrying amount does not differ materially from the amount determined using fair value at the end of the reporting period.

Paragraph 36: If a fixed asset is revalued, then all fixed assets in the same group must be revalued.

Paragraph 44: Each part of an item of property, plant and equipment that has a cost that is significant to the total cost of the entire asset should be depreciated separately.

Paragraph 51: The depreciable amount of an asset is allocated systematically over its useful life.

Paragraph 61: The depreciation method used reflects the entity's expected pattern of consumption of the future economic benefits from the asset.

Paragraph 64: In determining whether an item of property, plant and equipment is impaired, an entity applies PSAK 48 (revised 2009): Impairment of Assets. The Statement explains how an entity reviews the carrying amount of its assets, how it determines the recoverable amount of the asset and when to recognise or reverse an impairment loss.

Paragraph 74: The financial statements disclose, for each class of property, plant and equipment: (a) the measurement basis used in determining the gross carrying amount; (b) the depreciation method used; (c) the useful life or depreciation rate used; (d) the gross carrying amount and accumulated depreciation (plus any accumulated impairment losses) at the beginning and end of the period; and (e) a reconciliation of the carrying amount at the beginning and end of the period

Financial Accounting Standards Statement 69

In general, ED PSAK 69 regulates that biological assets or agricultural products are recognized when they meet several criteria that are the same as the criteria for recognizing assets. These assets are measured at initial recognition and at the end of each financial reporting period at fair value less costs to sell. Gains or losses arising from changes in the fair value of assets are recognized in the profit or loss of the period in which they occur. Exceptions are given if the fair value clearly cannot be measured reliably (Indonesian Institute of Accountants, 2015).

Paragraph 1: This Statement applies to the recording of the following matters when relating to agricultural activities: (a) biological assets, except bearer plants; (b) agricultural products at the point of harvest; and (c) government grants included in paragraphs 34 and 35.

Agricultural activity is the management of biological transformation and harvesting of biological assets by an entity for sale or for conversion into agricultural produce or into additional biological assets.

Paragraph 10: An entity shall recognise a biological asset or agricultural produce when, and only when: (a) the entity controls the biological asset as a result of past events; (b) it is probable that the future economic benefits associated with the biological asset will flow to the entity; and (c) the fair value or cost of the biological asset can be measured reliably.

Paragraph 12: Biological assets are measured on initial recognition and at each reporting period at fair value less costs to sell, except for the cases described in paragraph 30 where fair value cannot be measured reliably.

Paragraph 13: Agricultural produce harvested from an entity's biological assets is measured at fair value less costs to sell at the point of harvest. Such a measurement is cost at that date when applying PSAK 14: Inventories or another applicable Standard.

Paragraph 15: The measurement of the fair value of biological assets or agricultural produce may be supported by grouping biological assets or agricultural produce according to significant attributes; for example, by age or quality. An entity selects attributes that are consistent with those used in the market as the basis for pricing.

Paragraph 26: Gains or losses arising on initial recognition of biological assets at fair value less costs to sell and from changes in fair value less costs to sell of biological assets are included in profit or loss in the period in which they arise.

Paragraph 30: The assumption is that the fair value of biological assets can be measured reliably. However, this presumption can be rebutted only on initial recognition of biological assets for which quoted market prices are not available and for which alternative fair value measurements are clearly unreliable. In such cases, the biological asset is measured at its acquisition cost less any accumulated depreciation and any accumulated impairment losses. When the fair value of the biological asset can be measured reliably, the entity measures the biological asset at its fair value less costs to sell. When a non-current biological asset meets the criteria to be classified as held for sale (or is included in a disposal group that is classified as held for sale) in accordance with PSAK 58: Non-Current Assets Held for Sale and Discontinued Operations, it is assumed that its fair value can be measured reliably.

Paragraph 40: An entity shall disclose the aggregate gain or loss arising during the period on initial recognition of biological assets and agricultural produce, and from changes in the fair value less costs to sell of biological assets.

Paragraph 54: If an entity measures a biological asset at cost less accumulated depreciation and accumulated impairment losses (see paragraph 30) at the end of the period, the entity shall disclose for that biological asset: (a) a description of the biological asset; (b) an explanation of why fair value cannot be measured reliably; (c) where possible, the range of estimates within which fair value is likely to lie; (d) the depreciation method used; (e) the useful life or depreciation rate used; and (f) the gross carrying amount and accumulated depreciation (together with any accumulated impairment losses) at the beginning and end of the period.

Regulation of the Minister of Finance of the Republic of Indonesia Number 79/PMK.03/2008

Regulation of the Minister of Finance (PMK) Number 79/PMK.03/2008 concerning the revaluation of company fixed assets for tax purposes discusses that companies can carry out a revaluation of company fixed assets for tax purposes, provided that they have fulfilled all their tax obligations up to the last tax period before the tax period in which the revaluation is carried out (M. K. R. Indonesia, 2008).

Article 3 paragraph 1: Revaluation of the company's fixed assets is carried out on: (a) all tangible fixed assets, including land with ownership rights or building use rights; or (b) all tangible fixed assets excluding land, located or situated in Indonesia, owned, and used to obtain, collect, and maintain income that is a Tax Object.

Article 4 paragraph 1: Revaluation of the company's fixed assets must be carried out based on the market value or fair value of the fixed assets in effect at the time of the revaluation of the fixed assets determined by an appraisal service company or appraisal expert who has obtained permission from the Government.

Article 5: The excess of the revaluation of the company's fixed assets above the original fiscal book value is subject to a final Income Tax of 10% (ten percent).

Article 7 paragraph 2: For the part of the tax year up to the month before the month in which the revaluation of the company's fixed assets is carried out, the following provisions apply: (a) The fiscal depreciation basis of fixed assets is the fiscal depreciation basis at the beginning of the relevant tax year. (b) The remaining fiscal useful life of fixed assets is the remaining fiscal benefit at the beginning of the relevant tax year. (c) The depreciation calculation is calculated pro rata according to the number of months in the part of the tax year.

Article 8 paragraph 3: The difference between the transfer value of the company's fixed assets and the fiscal book value at the time of transfer is a profit or loss based on the provisions of Law Number 7 of 1983 concerning Income Tax as amended several times, most recently by Law Number 17 of 2000.

Article 9 paragraph 1: The excess of the revaluation of the company's fixed assets above the original commercial book value after being reduced by Income Tax as referred to in Article 5 must be recorded in the commercial balance sheet in the capital estimate under the title "Difference in Revaluation of the Company's Fixed Assets Date".

Sustainable Value Creation Accounting for Crops

Sustainable value creation in crop accounting is a concept that links accounting principles with environmental, social and economic aspects in the management of biological assets. Crop accounting focuses on recording, measuring and reporting crop assets owned by agricultural companies or entities, in accordance with applicable accounting standards, such as IAS 41 - Agriculture or relevant local standards.

IAS 41 requires biological assets, including crops, to be measured at fair value less costs to sell. This approach provides transparency in financial reporting and makes it easier for stakeholders to assess the environmental impact and economic value of crops.

Sustainable crop accounting practices take into account environmental impacts, such as deforestation, water use, and carbon emissions in the production process. Companies can adopt green accounting by recording environmental liabilities arising from agricultural activities.

The Triple Bottom Line (TBL) includes aspects of Profit, People, and Planet (Elkington, 2004), so crop accounting must take into account economic benefits, worker welfare, and ecological impacts. Sustainability reports can include sustainability indicators such as carbon footprint, water efficiency, and biodiversity conservation.

Crop accounting can be used to develop sustainability-based business models, such as agroforestry, regenerative agriculture, and carbon farming (Choudhary et al., 2024). This approach not only increases profitability but also creates long-term environmental benefits.

Research Question

There are several researchers who show differences between research objects and the provisions that should be such as in the studies (Nugroho et al., 2020; Nurhayati et al., 2019; Rangkuti et al., 2020). Based on this, the first research question is how does previous research respond to accounting treatment for plants?

Based on research (Rangkuti et al., 2020), there are several ways to assess the fair value of plant assets. From PSAK 16 and 69 there are also ways to assess the fair value of fixed assets and plant assets (Indonesian Institute of Accountants, 2011, 2015). Based on this, the second research question is how to measure the fair value of plant assets?

The valuation of plant assets based on fair prices will generally be higher than the price of plant assets based on historical costs. The difference in value will create a surplus that will increase the company's profit. Income tax will be imposed on this profit. Based on this, the third research question is how is the tax treatment of the profit from the valuation of plant assets?

The creation of sustainable value in plant accounting requires appropriate regulations. Due to the absence of such regulations in Indonesia, a regulation is needed to discuss this further. Based on this, the fourth research question is how to develop regulations for the creation of sustainable value in plant accounting in Indonesia?

METHODOLOGY

Population and Sample

Of the 22 search results through Harzing's Publish or Perish with the keyword "Plant Accounting" for the years 2016-2021 (last search on July 24, 2017), there were only three articles that could be used further in this study. The method of sampling this journal used purposive sampling. This is because some articles in the form of thesis or dissertation results that are not published in journal form, or other articles cannot be downloaded. The three articles that were successfully obtained by the researcher were sufficient to meet the needs of this study. The three articles include:

Table 1. Journals that are Research Samples

No	Author	Year	Title	Publisher
1	Nurhayati, Yulinartati, et. al.	2019	<i>Perlakuan Akuntansi Aset Biologis Tanaman Karet Berdasarkan International Accounting Standard 41 Pada PT. Perkebunan Nusantara (Persero) XII Banjarsari</i>	<i>Jurnal Ilmu Sosial Dan Humaniora</i>
2	Rangkuti, Meilani, et. al.	2020	<i>Analisis Perlakuan Akuntansi Tanaman Produktif berdasarkan PSAK 16 Pada CV. Budi Bakti Agro</i>	<i>Jurnal Akuntansi Berkelanjutan Indonesia</i>
3	Nugroho, Lapenia, et. al.	2020	<i>Perlakuan Akuntansi Aset Biologis Tanaman Tebu Pada PTPN XI PG. Poerwodadie Magetan</i>	<i>JAMER: Jurnal Akuntansi Merdeka</i>

Source: Researcher's analysis results (2021)

Data Types and Sources

The data used in this study are secondary data. All secondary data were obtained from journals that were successfully downloaded through the Harzing's Publish or Perish (POP) application.

Data Analysis Techniques

This study uses a qualitative approach, the data analysis method is a complex process and involves inductive and deductive reasoning, as well as description and interpretation so that it cannot be tested statistically. The data analysis technique used is the qualitative content analysis technique. Content analysis can be interpreted as a research technique to make replicable and valid conclusions from text (or other meaningful material) to the context of its use. Qualitative content analysis is systematic, analytical but not rigid. Categorization is used only as a guide, other concepts or categorizations are allowed to emerge during the research process (Hutagalung & Utomo, 2017).

Then it will be continued with descriptive statistical analysis to see the mapping of research by plant accounting researchers in Indonesia. The presentation of data in this study will be made in the form of graphs. Researchers conduct searches from journal articles that have been successfully obtained. Researchers will analyze and understand the text. Researchers investigate and try to describe objectively, systematically, and quantitatively.

ANALYSIS RESULTS AND DISCUSSION

Accounting Treatment of Plants

In this section, we will analyze and discuss the first research question, namely how does previous research respond to plant accounting?

Table 2. Summary of Research Results from Journal Samples

No	Authors	Year	Guidance	Result
1	Nurhayati, Yulinartati, et. al.	2019	IAS 41, PSAK 14, PSAK 16	PTPN XII Banjarsari in carrying out the accounting treatment of its biological assets has used the accounting standards applicable in Indonesia, namely accounting principles based on Financial Accounting Standards (SAK) which include PSAK 14 on inventory and PSAK 16 on fixed assets as well as other government regulations applicable in the presentation of the company's financial statements.
2	Rangkuti, Meilani, et. al.	2020	PSAK 16	The company presents the financial position report for its palm oil plantations as fixed assets of the factory and there is no separation between the plants that have produced and the plants that have not produced. This causes the financial statements presented to be irrelevant according to the qualitative characteristics of the financial statements.
3	Nugroho, Lapenia, et. al.	2020	PSAK 69	PTPN XI PG. Poerwodadie which is engaged in plantations recognizes biological assets in the form of estate crops classified into immature and mature plants. Biological assets are measured at cost and are presented on the balance sheet in the heading of Non-current Assets. PT. Perkebunan Nusantara XI PG. Poerwodadie still has not applied PSAK 69 Agriculture, it can be seen in the company's financial statements that measure its biological assets at fair value rather than acquisition costs.

Source: Journal summary results (2021)

Research (Nurhayati et al., 2019) uses the International Accounting Standard 41 guidelines at PT. Perkebunan Nusantara (Persero) XII (PTPN XII) Banjarsari. The phenomenon in this study is that there are differences in measurement aspects. This study applies IAS 41, PSAK 14, and PSAK 16. The results of the study show that PTPN XII classifies Mature Plants and Immature Plants as non-current assets and classifies inventory as current assets, while based on IAS 41, mature biological assets are classified as non-current assets, immature biological assets are classified as current assets and inventory is classified as current assets. Recognition of rubber plants according to PTPN XII Banjarsari and IAS 41 is generally the same, the difference lies only in the term biological assets, but both classify these assets following the transformation or growth of assets. Immature biological assets according to IAS 41 are the same as Immature Plants (TBM) at PTPN XII Banjarsari, while mature biological assets are Mature Plants (TM) at PTPN XII Banjarsari, where immature biological assets that have met the requirements to be recognized as mature biological assets are reclassified into mature biological assets. Furthermore, agricultural products at the harvest point are recognized as inventory, where PTPN XII Banjarsari recognizes inventory from the harvest point to finished goods, while IAS 41 only regulates biological asset standards up to inventory at the harvest point. IAS 41 is applied to agricultural products in the form of agricultural products at the harvest point, but the processing of agricultural products into finished goods inventory is not regulated in IAS 41 but is regulated separately in IAS 2 concerning inventory (IAS 41 paragraph 3) or if in Indonesia using PSAK 14 concerning inventory (Nurhayati et al., 2019). In terms of depreciation, PTPN XII Banjarsari discloses that biological assets in the form of TM and TBM are measured at acquisition cost less accumulated depreciation while biological assets in the form of inventory are measured at the lower of acquisition cost and net realization, while IAS 41 discloses that biological assets in the form of mature biological assets and immature biological assets are measured at fair value less estimated costs to sell. So PTPN XII Banjarsari measures or calculates depreciation when biological assets have been categorized as TM, while according to IAS 41, it does not measure or calculate depreciation.

Development of Plant Accounting Research: Evidence from Indonesia 2017-2021 with Sustainability Value Creation (Nicholas Renaldo, Luciana Fransisca, Achmad Tavip Junaedi, Suhardjo, Amries Rusli Tanjung, Teddy Chandra, Andi, and Anton)

Biological assets according to the scope of IAS 41 must be measured at initial recognition and at subsequent reporting dates at fair value based on active market prices less estimated costs to sell, unless fair value cannot be measured reliably. Active market prices according to IAS 41 are difficult to determine. When fair value cannot be determined, the company is advised to use acquisition cost less accumulated depreciation and accumulated impairment losses, but if the fair value can be determined later, the plantation crops that have been valued using acquisition cost less accumulated depreciation and accumulated impairment losses must be revalued using fair value less estimated costs to sell (IAS 41 paragraph 30).

PTPN XII Banjarsari not only discloses biological assets in agricultural activities but also discloses the management of agricultural products at the point of harvest into finished products, while IAS 41 only regulates accounting treatment and only discloses biological assets related to agricultural activities. The processing of crops into finished products is not disclosed.

In disclosing the measurement basis used in determining the recorded amount of biological assets, PTPN XII Banjarsari discloses the depreciation that has an impact on profit and loss in the current year, and discloses the depreciation method used, age, economic benefits, and depreciation rates, while IAS 41 discloses the accounting policies used in measuring biological assets, namely not disclosing the depreciation of biological assets, so in the profit/loss report there is no depreciation expense that results in changes in the profit/loss report.

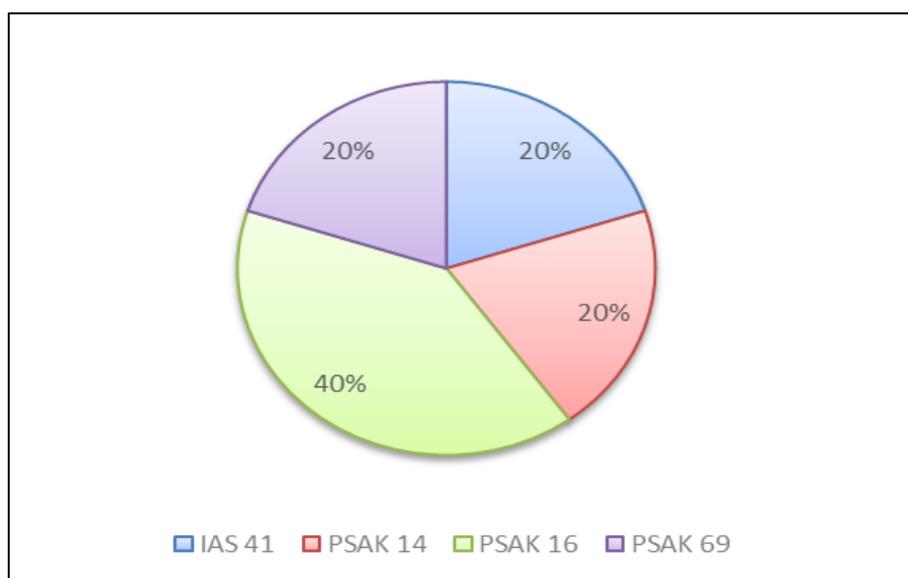
Research (Rangkuti et al., 2020) discusses the fair value of plants using PSAK 16 guidelines. The phenomenon in this study is that the object of the study presents its productive plants in the financial position report at historical cost and not based on the fair value of the asset. The company presents it in the financial position report as a fixed asset of plants and there is no separation between immature plants and plants that have produced. This results in the financial statements presented being irrelevant in accordance with the main qualitative characteristics of the financial statements.

The results of the study show that with the adjustment to PSAK 16, there is a fairly large difference where the fair value reaches 15.8 billion rupiah and the acquisition value is 8.3 billion rupiah. This will certainly make financial information very material because in any case the company must present the fair value for the plant assets. The study (Nugroho et al., 2020) discusses the accounting treatment of biological assets in terms of recognition, measurement and presentation with the guidelines of PSAK 69. The phenomenon in this study is that fair value has not been used in the assessment of Immature Plants (TBM) and Producing Plants (TM). The results of the study show that TBM assets are measured based on their acquisition cost (capitalizing all costs incurred such as input costs, process costs and indirect costs). While TM measurement only reclassifies from the acquisition cost of TBM. Capitalization of costs from nurseries to TBM as done in TBM is no longer carried out by TM because these costs are considered no longer to contribute to development. Biological assets in the form of TM and TBM in the Financial Report of PTPN XI PG Poerwodadie are presented in the Balance Sheet in the Non-Current Assets column.

The company describes the biological assets of sugarcane plantations as immature plants (TBM) and productive plants (TM) while PSAK 69 states that entities are encouraged to provide a description calculated based on their biological asset groups to differentiate biological assets based on the age of the plants. So that the company's description is in accordance with PSAK 69.

The company recognizes the depreciation of its plantation plants in TM. The biological assets recorded in the company are TBM and TM assets. The results of biological assets are recorded as inventory. While PSAK 69 states that biological assets are classified into mature biological assets and immature biological assets. The company recognizes its biological assets in accordance with PSAK 69, the difference lies only in the terminology.

The company in measuring biological assets for TBM is measured based on acquisition cost. For TBM, it is obtained from all costs related to plantation development such as input costs, process costs, and indirect costs. Meanwhile, TM is obtained from the acquisition cost of immature plants which are then reclassified to TM. Meanwhile, according to PSAK 69, at the time of initial recognition and at the next reporting date at fair value less estimated selling costs, unless the fair value cannot be measured reliably. The company records its plantation crops in TBM and TM, but basically has not used fair value. Because the company measures its biological assets based on the acquisition costs related to plantation development and is capitalized until commercial products have been achieved. In the presentation of biological assets, in the form of sugar cane plants presented on the balance sheet in the non-current asset item in the form of TM and TBM. While for agricultural products, they are presented in current assets with the account name Inventory. According to PSAK 69, all profits or losses experienced by the company's fair value from the assessment of biological assets produced at harvest are presented in the period in which they occur. The presentation of biological assets in the balance sheet is in accordance with PSAK 69, namely by separating biological assets that have not yet produced with biological assets that have produced agricultural products.



Source: Data processing results (2021)

Figure 1. Guidelines for Plant Accounting Research in Indonesia

PSAK 16 dominates the random sample of journals in the POP application. PSAK 16 discusses fixed assets. PSAK 14 discusses inventory including products from plant assets. IAS 41 and PSAK 69 discuss biological assets but IAS 41 is a guideline outside Indonesia. There are differences between PSAK 16 and 69. PSAK 16 focuses on fixed assets while PSAK 69 focuses on agricultural assets. These two PSAKs cannot be equated in the discussion especially related to plants. Some plants, for example, tea plants, grape plants, oil palm trees, and rubber trees, usually meet the definition of bearer plants and are included in the scope of PSAK 16: Fixed Assets. However, products that grow (produce growing) on bearer plants, for example, tea leaves, grapes, fresh oil palm fruit bunches, and rubber latex, are included in the scope of PSAK 69: Agriculture (Indonesian Institute of Accountants, 2015).

Fair Value Calculation Method for Plant Assets

To answer the second research question, namely how to measure the fair value of plant assets, the first reference can be seen from the research (Rangkuti et al., 2020). The fair value for productive plants determined by market prices can be seen from the transaction price from the end of the previous period and there are other goods similar to the asset. The researcher added one way to assess the fair value of productive plants, namely by looking at the future value of the asset with the exception that it can only be seen with a maximum time span of four days. This is assumed if the company is actively trading and the balance sheet of a financial report as of December 31, then the fair value of the asset must be close to its market value but must remain relevant. If December 31 is on Thursday, then four days later it is Monday when trading generally starts to be active again. The value presented on the December 31 balance sheet should not be too far from the market value at the time it is transacted.

Tax Treatment of Gains on Valuation of Plant Assets

To answer the third research question, namely the tax treatment of plant asset valuation gains, it is necessary to pay attention to PMK Number 79/PMK.03/2008. Based on article 5, the tax rate on the excess difference in the revaluation of the company's fixed assets is ten percent. This tax is final so it cannot be compensated in tax credits.

Development of Sustainable Value Creation Regulations in Plant Accounting in Indonesia

To answer the fourth research question, namely the development of sustainable value creation regulations on crop accounting in Indonesia, will refer to PSAK 69 which regulates accounting for agricultural activities, including recognition, measurement, presentation, and disclosure of biological assets and agricultural products. PSAK 69 covers agricultural activities, namely the management of biological transformation and harvesting of biological assets by an entity for sale or conversion into agricultural products or additional biological assets. Biological assets are living animals or plants that are the subject of agricultural activities. Biological assets are recognized when they meet the asset recognition criteria and are measured at initial recognition and at the end of each financial reporting period at fair value less costs to sell. Agricultural products are recognized when harvested and are measured at fair value less costs to sell at harvest. PSAK 69 regulates how information related to agricultural

activities should be presented in the financial statements and relevant disclosures. PSAK 69 is effective since January 1, 2018. PSAK 69 aims to improve the transparency and relevance of financial information related to agricultural activities, so that stakeholders can make better decisions.

PSAK 69 requires entities to disclose the fair value of biological assets and agricultural products, providing stakeholders with clearer information about the condition of the natural resources they manage. With this transparency, companies can more easily identify the environmental impacts of agricultural activities and find solutions to reduce carbon footprints and improve resource efficiency. PSAK 69 allows companies to measure and report the economic value of sustainable agricultural practices, such as agroforestry or regenerative agriculture. The adoption of this standard can facilitate investment in green agriculture and carbon trading projects, which support long-term value creation for companies and the environment.

CONCLUSION

Based on the analysis results, the accounting treatment for plants is divided into mature plants and immature plants. Measurement must be based on the fair value of each asset group. Referring to the Statement of Financial Accounting Standards (PSAK), based on the type of plant and the products produced, PSAK 16 and/or PSAK 69 can be used. The fair value assessment of an asset is important to reduce asymmetric information. The results of the study also show that assessing the fair value of plant assets can be done by looking at the future selling price of the asset. While the excess difference over the fair value assessment will be subject to a final income tax of ten percent. To create sustainable value in plant accounting, it is necessary to create regulations or develop PSAK 69.

Implication

By referring to PSAK 16 and PSAK 69, agricultural companies can present more transparent financial information, especially in measuring the fair value of mature and immature crops. This transparency helps investors and stakeholders in making more accurate and sustainable business decisions.

With better regulations in PSAK 69, agricultural companies can be encouraged to implement sustainable practices in crop cultivation, such as soil conservation and carbon emission reduction. This can increase the long-term economic value and competitiveness of companies in facing global market demands for sustainability-based products.

Limitation

Fair value assessment of biological assets often faces challenges in predicting future selling prices, especially due to commodity price fluctuations, changes in government policies, and external factors such as climate change. The lack of accurate historical data can lead to subjectivity in measuring fair value, thus affecting the reliability of financial statements.

Although PSAK 69 contributes to transparency, this standard has not been fully integrated with Environmental, Social, and Governance (ESG) reporting which is a global trend in sustainability-based investment. This can hinder Indonesian agricultural companies in attracting international investors who prefer companies with accounting practices that have adopted ESG.

Recommendation

Based on the research results, recommendations that can be given to accountants to present financial reports especially on plant assets with fair value to facilitate shareholders in making decisions so that no material information is missed. Both for accountants and subsequent researchers to always update accounting insights especially in PSAK which can change at any time in order to make readjustments to the accounts in the financial statements for accountants and to conduct newer research for the development of scientific insights for researchers.

Future Research

Currently, PSAK 69 still focuses on measuring and reporting biological assets without explicitly accommodating sustainability aspects. Future research can explore the development of specific accounting standards that integrate sustainability principles, such as carbon accounting, environmental impact, and resource efficiency in agriculture. This study can help in the preparation of new regulations that are more environmentally friendly and oriented towards green agricultural practices.

The current global trend encourages companies to implement Environmental, Social, and Governance (ESG) Reporting, but PSAK 69 is not yet fully aligned with this standard. Research can examine how crop accounting can be adjusted to ESG standards to increase the attractiveness of agricultural companies in the eyes of international investors. Studies can also explore the application of green accounting in agricultural accounting, which includes measuring environmental impact, water use efficiency, and carbon emissions from agricultural activities.

REFERENCES

- Chandra, T., Renaldo, N., & Putra, L. C. (2018). Stock Market Reaction towards SPECT Events using CAPM Adjusted Return. *Opción, Año 34*(Especial No.15), 338–374.
- Choudhary, B., Dhar, V., & Pawase, A. S. (2024). Blue carbon and the role of mangroves in carbon sequestration: Its mechanisms, estimation, human impacts and conservation strategies for economic incentives. *Journal of Sea Research, 199*(102504), 1–22. <https://doi.org/10.1016/j.seares.2024.102504>
- Correia, M. S. (2019). Sustainability: An Overview of the Triple Bottom Line and Sustainability Implementation. *International Journal of Strategic Engineering, 2*(1), 29–38. <https://doi.org/10.4018/ijose.2019010103>
- Elkington, J. (2004). Enter the triple bottom line. In *The Triple Bottom Line: Does it All Add Up* (Vol. 1, Issue 1986, pp. 1–16). <https://doi.org/10.4324/9781849773348>
- Hutagalung, T. B., & Utomo, D. C. (2017). Meta-Analisis Variasi Penelitian dari Peneliti Akuntansi di Indonesia. *Diponegoro Journal of Accounting, 6*(4), 1–11.
- Ikatan Akuntan Indonesia. (2011). Pernyataan Standar Akuntansi Keuangan No. 16 Tentang Aset Tetap. In *Ikatan Akuntan Indonesia*.
- Ikatan Akuntan Indonesia. (2015). Exposure Draft Pernyataan Standar Akuntansi Keuangan 69 Agrrikultur. In *Standar Akuntansi Keuangan*.
- Indonesia, I. A. (2017). Standar Akuntansi Keuangan. In *Standar Akuntansi Keuangan*. Ikatan Akuntan Indonesia.
- Indonesia, K. D. K. O. J. K. R. (2020). Peraturan Otoritas Jasa Keuangan Republik Indonesia Nomor 35/POJK.04/2020 tentang Penilaian dan Penyajian Laporan Penilaian Bisnis di Pasar Modal. In *Peraturan Otoritas Jasa Keuangan* (p. 72).
- Indonesia, M. K. R. (2008). Peraturan Menteri Keuangan Republik Indonesia Nomor 79/PMK.03/2008. In *Peraturan Menteri Keuangan*.
- Nugroho, S. W., Lapenia, M. N., & Anggraeny, S. N. (2020). Perlakuan Akuntansi Aset Biologis Tanaman Tebu Pada PTPN XI PG. Poerwodadie Magetan. *JAMER: Jurnal Akuntansi Merdeka, 1*(2), 51–58. <https://doi.org/10.33319/jamer.v1i2.28>
- Nurhayati, Yulinartati, & Murwanti. (2019). Perlakuan Akuntansi Aset Biologis Tanaman Karet berdasarkan International Accounting Standard 41 Pada PT. Perkebunan Nusantara (Persero) XII Banjarsari. *Jurnal Ilmu Sosial Dan Humaniora, 8*(1), 84. <https://doi.org/10.23887/jish-undiksha.v8i1.21357>
- Putra, R., & Renaldo, N. (2020). Improvement of Teacher Satisfaction and Teacher Performace through Commitment, Culture Organization, Motivation, and Leadership Style of Teachers in Senior High School Teachers in Rokan Hilir District. *Procuratio: Jurnal Ilmiah Manajemen, 8*(1), 125–139.
- Rangkuti, H. A., Meilani, F., & Nurulita, S. (2020). Analisis Perlakuan Akuntansi Tanaman Produktif berdasarkan PSAK 16 CV. Budi Bakti Agro. *Jurnal Akuntansi Berkelanjutan Indonesia, 3*(2), 193–203.
- Renaldo, N., Sudarno, S., & Hutahuruk, M. Br. (2020). Internal Control System Analysis on Accounts Receivable in SP Corporation. *The Accounting Journal of Binaniaga, 5*(2), 73. <https://doi.org/10.33062/ajb.v5i2.382>
- Renaldo, N., Suhardjo, Putri, I. Y., Sevendy, T., & Juventia, J. (2021). Penilaian Harga Saham Berbasis Web pada Perusahaan Sektor Aneka Industri Tahun 2020. *Kurs: Jurnal Akuntansi, Kewirausahaan Dan Bisnis, 6*(1), 91–102.