

# MEASURING THE FINANCIAL PERFORMANCE OF AGRICULTURAL ECONOMIC UNITS BASED ON THEIR REPORTING OF BIOLOGICAL (AGRICULTURAL) ASSETS, IN TERMS OF IPSAS 27

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## Abstract

This study underscores the significance of accounting for biological (agricultural) assets within the Horticulture Office of the Iraqi Ministry of Agriculture, in strict compliance with proposed International Public Sector Accounting Standards (IPSAS). Specifically, it emphasizes the importance of proving accounting operations and presenting critical financial statements, such as the statement of financial position, statement of financial performance, statement of changes in net assets/equity, and statement of cash flows, in a manner consistent with the fair value of current biological assets and the revaluation of non-current assets (perennial plants). The study also delves into the relevant accounting treatment for revaluation differences and their impact on financial statement preparation. These measures are urgently required to tackle the challenges facing the current government accounting system in Iraq, which have adversely impacted the comprehensiveness of government financial reports and compromised the evaluation of financial performance, planning, control, and strategic decision-making for the Horticulture Office of the Ministry of Agriculture. One of the research's salient findings is that preparing financial statements in accordance with IPSAS for the public sector can provide users with more insightful information for informed decision-making. Among the key recommendations is the need to represent financial information for events and transactions that transpire during the financial year in a transparent and accountable manner, through the adoption of IPSAS standards. This, in turn, ensures the preparation of high-quality financial reports that are rich in qualitative accounting information, thereby enhancing the evaluation of financial performance, planning, control, and strategic decision-making for the Horticulture Office of the Ministry of Agriculture.

**Keywords:** Biological (Agricultural) Assets, Standard 27, Performance Evaluation

## 1 INTRODUCTION

As government accounting is intricately linked to laws, regulations, and financial standards, it is essential to ensure that the government accounting system is harmonized with these legal and regulatory frameworks. This is critical to enable the accounting system to serve the needs of top-level management and to keep abreast of modern developments in International Public Sector Accounting Standards (IPSAS) for the public sector. This is particularly pertinent in the agricultural sector, where there is a pressing need to conduct a preliminary assessment of the adoption of IPSAS standards and to understand the outcomes by presenting financial statements that are fully compliant with IPSAS standards. Such an approach will aid in the development of accounting standards that are better suited to the local environment. This is the primary focus of this research.

## 2 LITERATURE REVIEW

1. Crujisen (2012) have compared the historical cost approach and the fair value approach for evaluating biological assets, highlighting the advantages and disadvantages of each approach and identifying the significant differences affecting the balance sheet and how to address



these differences resulting from the shift from the historical cost approach to the fair value approach.

2. Hamad (2013) emphasized the importance of complying with international accounting standards in agricultural activities, and spoke about the importance of comparing International Accounting Standard 41 with Iraqi Accounting Standard 11. He also stressed the importance of adopting international accounting standards and working to harmonize with them, as well as the need to implement International Accounting Standard 41 in agriculture, and to conduct a comparative analytical study between Iraqi Accounting Standard 11 and International Accounting Standard 41.

3. Gonçalves (2014) have focused on accounting for biological assets, disclosure, measurement, fair value suitability, and identifying determinants at the company and country levels that can explain mandatory and voluntary disclosure and measurement practices for biological assets under International Accounting Standard 41. This study aims to examine the importance of fair value for biological assets under International Accounting Standard 41 to investigate the effects of market valuation on this standard.

4. The study conducted by Huffman (2014) delves into the measurement of assets that hold value and their utilization under "International Accounting Standard 41." The primary objective of the study is to provide practical evidence to bolster the asset measurement framework by establishing a link between the measurement of assets and their utilization. By doing so, the study aims to contribute to the development of a more comprehensive and reliable framework for asset measurement, which is crucial for effective financial reporting and decision-making.

5. Safawi (2016) have emphasized the use of fair value in evaluating biological assets' impact on enhancing financial reporting quality for agricultural sector companies in Iraq. His study aims to determine the appropriate measurement approach for expressing biological assets' value in Iraqi agricultural companies throughout their productive life that meets financial reporting objectives. Furthermore, he analyzes the extent to which International Accounting Standard 41 "Agriculture" can be applied in the domestic environment and tests the effect of adopting fair value approach in evaluating biological assets in Iraqi agricultural companies to enhance financial reporting quality.

### **3 CONCEPTUAL FRAMEWORK**

#### **3.1 DEFINITION OF BIOLOGICAL (AGRICULTURAL) ASSETS**

The Iraqi Board of Accounting and Auditing Standards has adopted the term "living assets" (biological assets) to refer to animals and plants that are owned by agricultural economic units for the purposes of production or trade. The term is defined as "living aggregates of animal and plant species in the possession of agricultural economic units" (Safawi, 2016, p. 41). Similarly, International Public Sector Accounting Standard 27 (IPSAS 27) defines agriculture as "living animals or plants" (IPSAS 27, 2021, para. 5).

#### **3.2 TYPES OF BIOLOGICAL ASSETS**

Biological assets were classified in several ways based on the criteria adopted in the classification process, taking into account the orientation of the International Accounting Standards Board, as the specialized professional organization, as well as taking into account the bases adopted in the classification process. The classification came as follows (Mahmoud, 2009, p. 43): Plants exist in different forms and in order to evaluate them they must be classified into current assets and long-term assets. Where current assets are represented by plants and shrubs that produce field crops and are in the form of grains, seeds, legumes and fodder or in the form of vegetables such as tomatoes, potatoes, cucumbers and others. All these types have many active markets in which they are traded and there are fixed and known prices that can be relied upon for evaluation according to



the geographical location of the producing units, as prices vary from one region to another according to supply and demand variables.

As for perennial plant assets, they are represented by perennial plantations, such as palm groves, citrus groves, vineyards and banana plantations, with a lifespan of more than one year. Active markets for agricultural crops such as dates in their main types, olives and all types of citrus fruits are available. In addition, there are prices for palm seedlings according to their types, citrus and stone fruit seedlings. These prices can be relied upon for evaluation. But the difficulty lies in evaluating perennial trees during growth stages, because those trees were planted primarily for production purposes and not for sale. Therefore, markets lack prices for those trees. The International Accounting Standards Board deemed it appropriate to amend the scope of International Accounting Standard 27 as of the beginning of 2016 to exclude carrier plants (perennials) and include them within the scope of International Accounting Standard 17 - Property, Plant and Equipment, and therefore they are treated as fixed non-biological assets, i.e. measured based on the historical cost approach instead of the fair value approach due to the difficulty of measurement and lack of reliability in most cases relying on personal judgments, as well as the high cost of evaluation versus benefit, while allowing economic units to revalue. Therefore, the researcher will focus on using the fair value approach in evaluating current assets and the revaluation approach in evaluating non-current assets (Ghuban, 2002, p. 203).

#### **4 ACCOUNTING FOR BIOLOGICAL (AGRICULTURAL) ASSETS IN TERMS OF ACCOUNTING STANDARD 27**

##### **4.1 IMPORTANCE AND ADVANTAGES OF ADOPTING IPSAS**

Adopting a single global accounting language would ensure its suitability, efficiency, understanding, reliability, timeliness, neutrality, comparability, transparency, and accountability, leading to a qualitative change in accounting information and reports that would enhance confidence and enable investors and other users of accounting information worldwide (Ahmad & Khan, 2010, 41). Furthermore, adopting international standards helps elevate the accounting profession by providing qualified accountants capable of working according to these standards in most countries around the world, as they unify accounting terms between different countries and establish recognition, measurement, and disclosure principles. This elevation is particularly evident in countries that do not have their own accounting standards, as international accounting standards are developed based on the circumstances and needs of most countries and are not directed towards specific countries. Therefore, they are characterized by being accepted and adopted by many countries worldwide (Abu Nasir, 2011, p. 22).

Based on this, adopting IPSAS standards plays an important role in unifying accounting practices for government units at the international level by achieving convergence in the preparation and presentation of financial data for public sector units and encouraging international accounting coordination to develop and update general accounting systems and improve the quality of government financial reporting. These standards derive their importance from gaining international recognition and encouraging international organizations to adopt their requirements for their role in providing comparable and credible government financial data, as they represent the best international practices in preparing government financial reports (Zuhair, 2014, p. 55).

Government financial reports are a translation of the actual use of public resources in light of approved allocations and are useful when based on unified principles. Then, they can be verified, understandable, comparable, and a measure of accountability. Thus, adopting IPSAS standards unifies principles, limits discretion, and defines disclosures that help demonstrate the efficiency and effectiveness of the public entity in managing funds and providing services, improving the allocation of resources by public institutions, and supporting a strong governance framework by achieving transparency and enhancing accountability (Wang & Miraj, 2018, p. 45). The steps for



implementing international accounting standards for the public sector can be determined as follows:

#### **4.2 PRINCIPLES OF RECOGNITION AND MEASUREMENT FOR BIOLOGICAL ASSETS**

Government economic units recognize biological origin and the resulting crops. For accounting purposes, their accounting registration will require three criteria (IPSAS, 2021, SFC NO.6, Para. 25):

- Control of the asset as a result of previous events.
- Potential flow of economic benefits.
- It can be measured reliably.

IPSAS also indicated that the fair value should be used to measure the value of biological assets at the budget date, that any change in the fair value of biological assets should reflect net profit or loss for the financial period and that the fair value depends on the measurement of biological assets for financial reporting purposes both at the time of ownership and later.

#### **4.3 DISCLOSURE**

Regarding disclosure, the institution must disclose (Mahmoud, 2009, p. 99):

- A. The total profits and losses arising during the current period resulting from the initial recognition of biological assets and agricultural produce, and the change in fair value less the estimated point-of-sale costs of biological assets and any other adjusting entries to book value.
- B. The important methods and assumptions applied when determining the fair value for each group of agricultural produce at harvest time.
- C. Agricultural activities may sometimes be subject to climate fluctuations, diseases, and other natural hazards. If this leads to an increase in revenue or expenditures, the nature and value of this item must be disclosed in accordance with local accounting principle No. 6, "Disclosure of Information related to Financial Statements and Accounting Policies". Examples of such events include the spread of malignant diseases, floods, severe drought, freezing, and epidemics.

In order to achieve consistent results regarding the fair value measurement of biological assets, the fair value standard classifies the fair value into three levels that are referred to as the fair value hierarchy. They are as follows:

**Level 1:** Represents the price in an active market.

**Level 2:** Includes assets and liabilities that do not fall under Level 1, but for which observable market data is available. For example, prices in inactive markets or similar assets and liabilities that fall under Level 1.

**Level 3:** Includes assets and liabilities for which no observable market data is available.

Based on Level 2 of the fair value hierarchy and the specifications of parallel markets, a biological assets (agricultural) market index will be presented in the local environment.

### **5 EVALUATING THE FINANCIAL PERFORMANCE OF THE HORTICULTURE OFFICE - MINISTRY OF AGRICULTURE ACCORDING TO THE GOVERNMENT ACCOUNTING SYSTEM.**

The financial statements prepared by the Horticulture Office can be presented in accordance with the government accounting system, and their performance can be evaluated for the purpose of identifying strengths and weaknesses. This can be achieved through utilizing the information provided by their financial statements at the end of each fiscal year, which can help enhance strengths and address weaknesses. Some of the most important financial statements prepared by the Horticulture Office include:

**5.1 Statement of Financial Position:** This document includes the division of assets and liabilities into current financial assets, accounts receivable, and corresponding total financial requirements, as well as corresponding creditor accounts.

**Table 1: Horticulture Office - Ministry of Agriculture**  
**Statement of Financial Position as of December 31, 2022 (IQD)**

Accounting Guide No.	Statement	2019	2020	Vertical analysis	Vertical analysis	Horizontal analysis
	Financial assets			(%) 2019	2020 (%)	2020 (%)
3.1.2	Cash	2,226,659,805	1,635,528,260	5.49	4.10	-1.39
3.2	Advances	274,018,800	297,654,793	0.68	0.75	0.7
3.3	Other accounts receivable	121,548,865	68,558,303	0.30	0.17	-0.13
	<b>Total financial assets</b>	<b>2,622,227,470</b>	<b>2,001,741,356</b>	<b>6.46</b>	<b>5.02</b>	<b>-1.44</b>
3.9	<b>Contra accounts receivable</b>					
3.9.4	<b>Fixed assets</b>	<b>37,967,297,740</b>	<b>37,842,160,940</b>	<b>93.54</b>	<b>94.98</b>	<b>1.44</b>
	<b>Total assets</b>	<b>40,589,525,210</b>	<b>39,843,902,296</b>	<b>100</b>	<b>100</b>	<b>0</b>
	financial liabilities					
4.2	Trusts	193,660,732	33,878,387	0.48	0.09	-0.39
4.3	Other accounts payable	2234,747,493	2,125,638,486	5.51	5.33	-0.18
	<b>Total financial liabilities</b>	<b>2,428,408,225</b>	<b>2,159,516,873</b>	<b>5.99</b>	<b>5.42</b>	<b>-0.57</b>
	Current account of accounting department					
	Balance as of 1/1	261,166,400	193,819,245	0.64	0.49	-0.13
	Add: financing during the year	8,474,753,323	7,693,741,277	20.88	19.30	-1.58
	Add: Revenues	365,635,413	233,819,225	0.90	0.59	-0.39
	less: expenditures	(8,385,403,091)	(8,279,155,264)	20.66	20.78	0.12
	Balance on 12/31	193,819,245	(157,775,517)	0.48	0.40	-0.08
	<b>total liabilities</b>	<b>2,622,227,470</b>	<b>2,001,741,356</b>	<b>6.47</b>	<b>5.02</b>	<b>-1.4</b>
4.9	<b>Contra accounts payable</b>					
4.9.4	<b>Fixed assets</b>	<b>37,967,297,740</b>	<b>37,842,160,940</b>	<b>93.53</b>	<b>94.98</b>	<b>1.45</b>
	<b>Total of contra liabilities and assets</b>	<b>40,589,525,210</b>	<b>39,843,902,296</b>	<b>100</b>	<b>100</b>	<b>0</b>

Source: Horticulture Office - Ministry of Agriculture

Through analyzing Table 1, which presents the vertical analysis of the statement of financial position of the Horticulture Office for the years 2019-2020, the following observations can be made:

- Cash in hand decreased significantly from 5.49% in 2019 to 4.10% in 2020, indicating insufficient liquidity to meet the financial obligations, which reached 5.42% in 2020. Consequently, this indicates a problem in financial management which resulted in a deficit of 0.40% by the end of the year.
- The Horticulture Office focused on acquiring various assets during the years 2019-2020, with a greater emphasis on non-current assets (fixed assets). The percentage of non-current assets was 54.93% in 2019 and 98.94% in 2020. These ratios indicate that there was no significant change in the percentage of non-current assets during the years 2019-2020. However, this change is not accurate and can be attributed to the unjustified reduction of fixed assets through the sale of biological assets without proper justification, and the failure to disclose the value of perennial plant assets, which is the main activity of the office and should be reflected in the statement of financial position.
- The financing of the Horticulture Office decreased from 20.88% in 2019 to 19.30% in 2020 due to the budget not being approved for the year 2020 and relying on the expenditure authorization according to the Ministry of Finance circular, which limited the office's ability to carry out its activities and develop its projects.
- The Horticulture Office relies on its internal sources and central financing to fund its operations. The revenues were 0.90% in 2019 and 0.59% in 2020, indicating a decline in revenues. However, there is a lack of information explaining the reason for the low revenues, which is a deficiency in the accounting system of the Horticulture Office that does not provide sufficient disclosures in addition to a significant weakness in the revenues generated. This is not a good indicator that the office relies heavily on central financing.
- "The presentation of reciprocal debts at 53.93% in 2019 and 80.94% in 2020 does not provide adequate information about the sources of these ratios and their details."

## 5.2 Statement of cash flows

In the statement of cash flows, all cash collections received by the office and cash payments made during the fiscal year are presented. However, this cash flow statement in its current form does not provide sufficient information to effectively evaluate the system's performance according to financial ratios, such as the return on assets indicator, which relies on net operating cash flow, as well as other indicators such as return on equity and return on sales. Financial ratio analysis depends on dividing the cash flow statement into operating, financing, and investing activities. Therefore, this statement in its current form does not enable financial analysts to extract sufficient information for users, and reliance should be placed on horizontal analysis according to the current format of the statement.

**Table 2: Horticulture Office, Ministry of Agriculture**

**Analysis of cash flow statement for the percentage change in items as of December 31, 2020 (IQD).**

			Vertical analysis	Vertical analysis	
Account	2019	2020	%2019	%2020	Percentage change
Cash balance as of 1/1/	196,7760,164	2,226,659,805	100	113.157	13.15707

Add: Sources	8,840,388,736	7,927,560,502	100	89.6743	-10.3257
Funding from the Accounting Department	8,474,753,323	7,693,741,277	100	90.7843	-9.21575
Actual revenues	365,635,413	233,819,225	100	63.9487	-36.0513
less: uses					
Actual expenditures	(8,385,403,091)	(8,279,155,264)	100	98.7329	-1.26706
Change in accounts receivable and accounts payable	(196,086,004)	239,536,783	100	122.159	22.15904
Sources					
Decrease in advances	(189,859,610)	(23,635,993)	100	12.4492	-87.5508
Increase in creditors	86,148,529	0	100	0	-100
Increase in trusts	(55,892,647)	(159,782,345)	100	285.874	185.8736
Total	(159,603,728)	(183,418,338)	100	114.921	14.92109
Uses					
Increase in debtors	(36,482,276)	52,990,562	100	-145.25	-245.25
Decrease in creditors		(109,109,007)			0
Total	(36,482,276)	(56,118,445)	100	153.824	53.82386
Cash balance as of 31/12/	2,226,659,805	1,635,528,260	100	73.4521	-26.5479

Source: This analysis was conducted by the researcher based on financial data obtained from the Horticulture Office's financial statements for 2020.

The financial statements, including the balance sheet and cash flow statement, were obtained by visiting the finance department of the Horticulture Office on 1/12/2023, and this was the only way to access them. The table above reveals several key findings:

- There has been a notable decrease in cash inflows, with all sources of inflows, whether from financing or actual revenues, having decreased significantly despite an increase in the beginning balance.
- Although actual expenditures have decreased, they have not decreased at the same level as revenues. As a result, the net income has been affected.
- The net cash has declined significantly at the end of the period due to a larger decrease in revenues than expenditures, which has had a significant impact on the cash balance.



## 6 EVALUATION OF THE FINANCIAL PERFORMANCE OF THE HORTICULTURE OFFICE - MINISTRY OF AGRICULTURE, BASED ON INTERNATIONAL PUBLIC SECTOR ACCOUNTING STANDARDS (IPSAS) 27

The financial statements prepared according to IPSAS 27 rely on accrual and fair value accounting for current biological assets, as well as revaluation of non-current assets (perennial plants) compared to the government-approved cash basis and historical cost. Compliance with IPSAS 27 requires the adoption of fair value accounting and revaluation, as follows:

### 6.1 EVALUATION OF CURRENT BIOLOGICAL ASSETS AT FAIR VALUE.

Current biological assets are evaluated at fair value based on the most actively current market prices, and the total amounts for these assets are presented in Table 1 according to IPSAS 27. It should be noted that these amounts are not included in the accounting records of the Horticulture Office according to the government accounting system. Instead, they are only recorded in the annual inventory, and the costs incurred by the office for producing palm fronds, fruit and citrus seedlings, and olives are not recorded. Only cash sales are recorded in the records at the selling price. This negatively affects the financial statements prepared by the Horticulture Office, as much of the information needed by users is hidden. The use of fair value accounting for recording and presenting these current assets in the financial statements provides realistic information to users, and a summary of these values according to the types found in the Horticulture Office - Ministry of Agriculture can be displayed in Table 3.

**Table 3: Horticulture Office, Ministry of Agriculture**  
**Details of fair value of current biological assets (IQD)**

	Category	2019			2020		
		Historical Cost	Fair Value	Unrealized gains of change in fair value	Historical Cost	Fair Value	Unrealized gains of change in fair value
				2019			2020
1	Local Date Palm	34,391,000	145,539,000	112,248,000	29,690,000	141,938,000	112,248,000
	Palm micropropagation	24,465,000	46,090,000	21,625,000	25,860,000	48,300,000	22,440,000
	Palm fruit	0	58,323,700	58,323,700	0	69,095,450	69,095,450
2	Fruit tress	32,813,250	92,811,125	59,997,875	34,537,500	97,365,750	62,828,250
	Fruits	0	19,380,475	19,380,475	0	20,677,000	20,677,000
3	Citrus Trees	7,481,750	23,455,500	159,737,350	8422250	25,411,250	16,989,000



	Citrus fruits	0	20,842,00 0	20,842,00 0	0	20,794,50 0	20,794,50 0
4	Olive trees	53,414,75 0	137,573,5 00	84,158,75 0	58,118,25 0	149,384,0 00	91,265,75 0
	Olive fruit	0	33,131,25 0	33,131,25 0	0	28,154,75 0	28,154,75 0
	Total	152,565,7 50	578,246,5 50	425,680,8 00	156,628,0 00	601,120,7 00	444,492,7 00

Source: Prepared by the researcher

After obtaining the fair value of current biological assets as a first step towards their presentation in the proposed financial statements, it is necessary to address the non-current plant assets in accordance with International Public Sector Accounting Standard (IPSAS) 27 and IPSAS 17, which deals with property, plant, and equipment. Since non-current plant assets are not available for sale and are only used for agricultural production purposes, it is difficult to measure their fair value. Therefore, they must be evaluated using the historical cost or revaluation model, instead of fair value measurement. To obtain financial values that are compatible with fair values based on current prices, the revaluation model must be used. This will be explained in more detail in the following paragraph of the proposed financial statements.

## 6.2 REVALUATION OF NON-CURRENT ASSETS RELATED TO PERENNIAL PLANT

A revaluation of non-current assets, specifically perennial plant, will be conducted using the assessment of experts in the field to obtain the most representative values of their current worth, which will then be compared with the assets' historical cost. A summary of the resulting differences from the revaluation of perennial plant assets will be presented in Table 2 to highlight any changes in the overall value of those assets.

Table 4: Revaluation of non-current assets related to perennial plant (IQD)

	Category	Historical cost of perennial plant assets	Revaluation values for perennial plant assets 2019	Revaluation differences 2019
1	Normal palm	670,454,000	3,018,735,500	2,348,281,500
2	Palm micropropagation	634,640,450	976,420,000	341,779,550
3	Fruit trees	25,320,850	75,187,000	49,866,150
4	Citrus	24,239,300	206,898,000	182,658,700
5	Olive trees	6,808,400	170,183,000	163,374,600
	Total	1,361,463,000	4,447,423,500	3,085,960,500

Source: Prepared by the researcher

The table above shows a significant difference in the valuation of non-current plant assets for the year 2020. However, since there were no changes in the current value or quantity of these assets, the values assessed for 2019 will be adopted. This difference between the historical cost and

revaluation, resulting from the adoption of International Public Sector Accounting Standards, will affect the contents and financial details of the statements and disclosures issued by government units.

According to the requirements of IPSAS 1, which deals with financial statement presentation, the statement of financial position, statement of financial performance, statement of changes in net assets/equity, and statement of cash flows must be prepared on an accrual basis. After that, the financial performance of government units can be evaluated by presenting the historical cost of non-current plant assets extracted from the unit's records and comparing it with the revaluation of those assets. The difference is clearly evident through the adoption of revaluation of those plants, which affects the disclosure of the actual value of those assets owned by the unit.

Government units must disclose these assets in accordance with the revaluation and deal with non-current asset transactions within the property, plant, and equipment account adopted under IPSAS 17 for the purpose of disclosing this information. This is based on the requirements of IPSAS 1 for presenting financial statements that provide information to users of these statements. These statements will be presented in the subsequent sections.

### 6.3 FINANCIAL REPORTING


Adopting IPSAS standards requires us to report the most important information through financial statements, including the statement of financial position, statement of financial performance, and statement of changes in net assets/equity, in accordance with IPSAS 1 requirements. Additionally, we must also comply with IPSAS 2 requirements regarding the statement of cash flows.

#### A. Statement of financial position

The statement of financial position includes a detailed presentation of all its components, including current and non-current assets and liabilities, as well as equity, arranged in order of liquidity. This presentation aims to provide more detailed and reliable information to users of the financial statements.

**Table 5: Horticulture Office / Ministry of Agriculture**  
**Proposed statement of financial position as of December 31, 2020 (IQD).**

	2019	2020	Vertical analysis	Vertical analysis	Horizontal analysis
<b><u>Assets</u></b>			%2019	%2020	%2020
<b><u>Current Assets</u></b>					
Cash	2,226,659,805	1635,528,260	4.807	3.577	-1,23
Advances	2,74,018,800	297,654,793	0.591	0.651	0.06
Other accounts receivable	121548865	68,558,303	0.262	0.149	-0.113
Biological assets (current)	578,246,550	601,120,700	1.248	1.314	0.066
Total current assets	3,200,474,020	2,602,862,056	6.909	5.693	-1.216
Non-current assets					
Property, plant and equipment	43,117,168,293	43,117,168,293	93.09	94.306	1.216
Total non-current assets	43,117,168,293	43,117,168,293	93.09	94.306	1.216



Total assets	<u>46,317,642,313</u>	<u>45,720,030,349</u>	<u>100</u>	<u>100</u>	<u>0</u>
Liabilities					
Current liabilities					
Trusts	193,660,732	33,878,387	0.418	0.074	-0.344
Other accounts payable	2,234,747,493	2,125,638,486	4.824	4.649	-0.175
Total trusts and accounts payable	2428408,225	2,159,516,873	5.242	4.723	-0.519
Net assets/equity					
Contributed capital	40377592788	40,030,060,276	87.175	87.554	0.379
Surplus (deficit)	3,511,641,300	3,530,453,200	7.581	7.721	0.14
Total net assets/equity	43,889,234,088	43,560,513,476	94.757	95.276	0.519
Total net assets/equity and Liabilities	<u>46,317,642,313</u>	<u>45,720,030,349</u>	<u>100</u>	<u>100</u>	<u>0</u>

Source: Prepared by the researcher based on IPSAS 1 and financial records of the Finance Department in the Horticulture Office.

Through comparing the aforementioned table with the financial statement table prepared in accordance with Governmental Accounting System No.1, it is evident that there are significant differences in the amounts presented for the same accounts. The first difference pertains to the total amount of current biological assets for the year 2019, which amounted to IQD 3,200,474,020 after the adoption of Standard No.27, compared to IQD 2,622,227,470 before its adoption, implying a fair value difference of IQD 578,246,550. As for the year 2020, the total amount of current biological assets was IQD 2,602,862,056, compared to 2,001,741,356 prior to the adoption of the standard, indicating a fair value difference of IQD 601,120,700. It should be noted that the Horticulture Office does not include these assets in its financial statements, and only conducts a numerical inventory at the end of the year, which significantly impacts the presentation of the statement.

It was found that the second difference pertains to the total amount of fixed assets for the year 2019, where the value before the adoption of the standards was IQD 37,967,297,740, and after the adoption of the standards it amounted to IQD 43,117,168,293. The first difference between the two values is attributed to the revaluation of perennial plant assets, which were not previously included in the fixed assets reported by the Horticulture Office and were only subject to annual inventory, resulting in a fair value difference of IQD 4,447,423,500, as shown in Table 3. As for the second difference, the Horticulture Office gradually reduced its fixed assets at the end of each year by selling perennial plant assets. The cumulative value of the sales of perennial plant assets, which still remain outstanding and affect the users of the financial statements prepared by the Horticulture Office for the year 2019, amounted to IQD 702,447,053.

Regarding the year 2020, the value of fixed assets before the adoption of the standards was IQD 37,842,160,940, while it reached IQD 43,117,168,293 after the adoption of the standards. The first difference between them is attributed to the revaluation of perennial plant assets, which were not previously included in the fixed assets reported by the Horticulture Office and were only subject to annual inventory, resulting in a fair value difference of IQD 4,447,423,500 as shown in Table 3. As for the second difference, the Horticulture Office gradually reduced its fixed assets at the end of each year by selling perennial plant assets. The cumulative value of the sales of perennial plant assets, which still remain outstanding and affect the users of the financial statements prepared by the Horticulture Office for the year 2020, amounted to IQD 827,583,853.



The third difference in the accounts after the application of the standards relates to the capital account, which represents the sum of assets after deducting liabilities. This account replaces the corresponding liabilities in the government accounting system followed prior to the adoption of the standards. Additionally, there is a surplus revaluation account for perennial plant assets and fair value differences for current assets. It is possible that this information may have an impact on users of financial information.

After studying the table above and comparing it with Table 1 for analyzing the financial position of the Horticulture Office for the years 2019-2020, it is clear that there are differences in the financial analysis ratios. This is due to the addition of new items to the financial position statement after applying International Accounting Standard 27, which had a clear impact on the rest of the items. These items and their effects will be presented as follows:

- The percentages of all current assets were affected by the implementation of the standard. The percentage of total current assets out of total assets was 6.46% in 2019 before the implementation of the standard, and it increased to 6.609% after the implementation. As for current biological assets, their percentage was 1.248% according to the total asset analysis in the same year. In 2020, the percentage of total current assets out of total assets was 5.02% before the implementation of the standard, and it increased to 5.693% after the implementation. As for current biological assets, their percentage was 1.314% according to the total asset analysis in the same year.
- The percentage of fixed assets was also affected. The percentage of total fixed assets out of total assets was 93.54% in 2019 before the implementation of the standard, and it decreased to 93.09% after the implementation. In 2020, the percentage of fixed assets before the implementation of the standard was 94.98%, and it increased to 96.94% after the implementation, despite the increase in the value of fixed assets due to the addition of perennial plant assets. The reason for the decrease in the percentage is due to the increase in the percentage of current assets compared to total assets.
- Displaying the percentages of the corresponding liabilities by 53.93% in 2019 and 94.98% in 2020 does not provide sufficient information about the sources of those percentages. However, after adopting the standards and introducing new items in the financial statements, users can now access more comprehensive and accurate information. These items include contributed capital, which represents 175.87% in 2019 and 87.554% in 2020, in addition to the revaluation surplus ratio, which was 581.7% in 2019 and 7.721% in 2020. The sum of these ratios represents ownership rights, which are an alternative to corresponding liabilities and are part of the requirements of the International Public Sector Accounting Standards.

The previous sections illustrate the impact of implementing the International Public Sector Accounting Standards on the financial statements, providing clearer and more transparent information for users. This is achieved through the new ratio method of displaying current biological assets and perennial plant and how they affect ownership rights, in accordance with the requirements of International Accounting Standard 1.

#### **B. Statement of financial performance**

The statement of financial performance includes a presentation of all recognized revenues and expenditures during a specific period of time, and it includes a detailed breakdown of important revenues and expenditures, providing necessary explanations based on accrual basis. This aims to provide more reliable and appropriate information for use in financial decision-making processes.

Table 6: Horticulture Office / Ministry of Agriculture

Statement of financial performance for the period from 1/1/2020 to December 31, 2020 (IQD).

	2019	2020	Vertical analysis	Vertical analysis	Horizontal analysis
Revenues			%2019	2020%	%2020
Money transfers from the central government	8,474,753,323	7,693,741,277	95.86	97.05	1.18
Revenues from agricultural and animal production	102,802,400	139,034,250	1.16	1.75	0.59
Miscellaneous income	195,982,952	46,383,784	2.21	0.58	-1.63
Fining employees	1,953,510	187,000	0.022	0.002	-0.02
Late payment fees	0	13,050	0	0.00016	0.00016
Tax	64,896,551	48,201,141	0.73	0.60	-0.13
<b>Total revenues</b>	<b>8,840,388,736</b>	<b>7,927,560,502</b>	<b>100</b>	<b>100</b>	<b>0</b>
<b>Expenditures</b>					
Staff compensation	8,232,161,726	8,150,121,594	98.17	98.44	0.27
Services	34,970,150	26,483,955	0.41	0.31	-0.09
Commodity supplies	67,876,215	62,125,715	0.8	0.7	-0.1
Asset maintenance	40,506,000	30,535,000	0.48	0.36	-0.12
Grants, subsidies, debt service and other expenditures	9,889,000	9,889,000	0.118	0.119	0.001
<b>Total expenditures</b>	<b>8,385,403,091</b>	<b>8,279,155,264</b>	<b>100</b>	<b>100</b>	<b>0</b>
Period surplus	454985645	(454,144,477)	11.47	-14.76	-3.29
Revaluation surplus from (fixed assets, perennial plant)	3,085,960,500	3,085,960,500	77.8	100.31	22.51
Valuation differences in fair value (current biological assets)	425,680,800	444,492,700	10.73	14.45	3.71
<b>Overall performance excess</b>	<b>3,966,626,945</b>	<b>3,076,308,723</b>	<b>100</b>	<b>100</b>	<b>0</b>

Source: Prepared by the researcher based on (1) IPSAS and financial records of the Finance Department in the Horticulture Office.

The statement of comprehensive financial performance shows the surplus size after adopting the standards and reveals the differences in revaluation between the historical cost and fair value of current biological assets and fixed assets of perennial plant. This is in line with the accrual basis and recognition of unrealized revenues during the period, providing financial statement users with

a clear picture. Displaying revenues at their actual market prices allows for a clear picture of the revenue size that the Horticulture Office can achieve if revaluation amounts are adopted in accordance with international accounting standards for the public sector.

The table above shows that the vertical analysis highlights the importance of all items in the statement of financial performance, as the percentage of total expenditures represents what is consumed from the year's revenues, and the percentage of revenues from the finance obtained by the Horticulture Office from the Ministry of Finance tops the list. Meanwhile, the cost of compensation, including salaries and wages, is the largest expense in the expenditure side. The horizontal analysis shows a slight increase in compensation costs for employees in 2020 by 0.27%. As for the period's surplus, it decreased by 14.76% in 2020 due to the conversion of finance from 2019 and the reduction of finance for 2020, and a clear increase in revaluation of perennial plant and a change in the fair value of current biological assets.

### C. Statement of Changes in Net Assets/Equity

This statement includes changes in the net assets of the unit and its ownership rights during a specific period, where revenues, expenditures, surplus and deficit are included. The statement also discloses any impact of changes in accounting policies and corrections of errors between different periods.

**Table 7: Horticulture Office / Ministry of Agriculture**

#### **Statement of Changes in Net Assets/Equity for the year ended December 31, 2020 (IQD)**

	Contributed Capital	Accumulated surplus	Total
Balance as on 1/1/2019	0	0	0
surplus for the period	40,377,592,788	3,511,641,300	43,889,234,088
Balance as at 12/31/2019	40,377,592,788	3,511,641,300	43,889,234,088
Balance on 1/1/2020	40,377,592,788	3,511,641,300	40,377,592,788
surplus for the period	(347,532,512)	18,811,900	(328,720,612)
Balance as at 12/31/2020	40,030,060,276	3,530,453,200	43,560,513,476

Source: Prepared by the researcher based on (1) IPSAS and financial records of the Finance Department in the Horticulture Office.

**Table 8: Explanations for the figures presented in the Statement of Changes in Net Assets/Equity (IQD)**

	The fair value of the total assets after the adoption of the standard	Liabilities are deducted after the adoption of the standard	The annual Surplus from Revaluation is reduced	Net Capital
Balance as at 12/31/2019	46,317,642,313	2,428,408,225	3,511,641,300	403,77592,788
Balance as at 12/31/2020	45,720,030,349	2,159,516,873	3,530,453,200	40,030,060,276

Source: Prepared by the researcher

This statement of changes in net assets/equity, according to international standards, explains that the assets owned by an economic unit can be considered as capital for the economic unit. This applies whether the assets were created internally or acquired through purchase, including the accumulated surplus resulting from the revaluation of perennial plant assets and fair value differences for current biological assets. However, these differences should not be recognized as unrealized revenue in the accumulated surplus account in the statement of financial performance

of the economic unit. This information enhances the ability of information users to make important decisions.

Vertical and horizontal analyses can be used to illustrate the change in net assets/equity of the Horticulture Office for 2019 and 2020, based on percentages, as net assets change figures are comparatively compared through the percentage distribution of net assets vertical analysis, and this is used to access horizontal analysis of percentage change of each item when compared.

Vertical and horizontal analysis are used to analyze the change in net assets/equity in the Horticulture Office during the years 2019 and 2020 in percentage ratios. This is done by comparing the numbers of the net asset change statement using the percentage distribution of the vertical analysis to arrive at the horizontal analysis, which shows the percentage change of each item when compared.

**Table 9: Vertical and horizontal analysis of the statement of changes in net assets/equity for the Horticulture Office for the years 2019 and 2020.**

Statements	<u>Contributed Capital</u>	<u>Accumulated surplus</u>	Total
Balance on 1/1/2019 (base year)	<u>0</u>	<u>0</u>	<u>0</u>
Balance on 1/1/2020	91.99	8.01	100
<b>Percentage change</b>	<b>91.99</b>	<b>8.01</b>	<b>100</b>
Surplus for the period 2019 (base year)	91.99	8.01	100
Surplus for the period 2020	(105.72)	5.72	(100)
<b>Percentage change</b>	<b><u>13.72</u></b>	<b><u>-13.72</u></b>	<b><u>0</u></b>
Balance as at 12/31/2019 (base year)	91.9988	8.0012	100
Balance as at 31/12/2020	91.8952	8.1048	100
<b>Percentage change</b>	<b><u>-0.1036</u></b>	<b><u>0.1036</u></b>	<b><u>0</u></b>

Source: Prepared by the researcher based on IPSAS 1 and financial records of the Finance Department in the Horticulture Office.

The table above shows both vertical and horizontal analyses of the changes in net assets/equity for the Horticulture Office for the years 2019 and 2020 as follows:

The financial ratios of the vertical and horizontal analysis of the statement of changes in net assets/equity demonstrate that on January 1, 2019, the fair value and revaluation were adopted, and the presentation method was in accordance with international standards during the year 2019, which had an impact on December 23, 2019. It is also evident that there is a decrease in the period surplus for the year 2020, related to the contributed capital, due to a decrease in current asset items, which affected the contributed capital and the balance as of December 31, 2020.

#### **D. Cash Flow Statement**

This statement includes disclosures of cash receipts and payments during the period, classified according to their operating, investing, and financing activities in a manner that provides information to users for evaluating the effects of these activities on the financial statements.



**Table 10: Cash Flow Statement for the fiscal year ended December 31, 2020 (IQD) for the Horticulture Office of the Ministry of Agriculture (IQD)**

			Vertical Analysis	Vertical Analysis	Horizontal Analysis
Statements	2019	2020	%2019	%2020	%2020
<b>Cash flow from operating activities</b>					
Receipts					
Sale of agricultural and animal production	102,802,400	139,034,250	31.23	48.47	17.24
Miscellaneous income	195,982,952	46,383,784	59.54	16.17	-43.37
Fines on employees	1,953,510	187,000	0.59	0.07	-0.52
Late payment fees	0	13,050	0	0.0045	0.0045
Tax revenues	64896551	48,201,141	19.71	16.8	-2.91
Decrease in debtors	0	52,990,562	0	18.47	18.47
Increase in debtors	(36,482,276)	0	-11.08	0	-11.08
Total receipts	329,153,137	286,809,787	100	100	0
Payments					
Staff compensation	(8232161726)	(8,150,121,594)	-96.32	-95.08	1.24
Services	(34970150)	(26,483,955)	-0.41	-0.31	0.1
Commodities	(67,876,215)	(62,125,715)	-0.79	-0.72	0.07
Asset Maintenance	(40,506,000)	(30,535,000)	-0.47	-0.35	0.12
Grants, subsidies, debt service and other expenditures	(9,889,000)	(9,889,000)	-0.11	-0.11	0
Decrease in creditors	0	(109,109,007)	0	-1.27	1.27
Increase in creditors	86,148,529	0	1.008	0	1.008
Decrease in advances	(189,859,610)	(23,635,993)	-2.22	-0.27	1.95
Increase in trusts	(55,892,647)	(159,782,345)	-0.65	-1.86	1.21
Total cash payments	8,545,906,819	8,571,682,609	100	100	0
<b>Net cash flow from operating activities.</b>	8,216,753,682	(8,284,872,822)	100	100	0

Cash flow from investing activities.	(0)	(0)	0	0	0
Net cash flow from operating activities.					
Financing from the accounting department	8,474,753,323	7,693,741,277	100	100	0
Net cash flow from financing activities.	8,474,753,323	7,693,741,277	100	100	0
Net decrease in cash and cash equivalents	257,999,641	(591,131,545)	11.58	-36.14	-24.56
Cash and cash equivalents at the beginning of the period.	1,967,760,164	2,226,659,805	88.37	136.14	47.77
Cash and cash equivalents at the end of the period".	2,226,659,805	1,635,528,260	100	100	0

**Source: Prepared by the researcher based on IPSAS 1 and financial records of the Finance Department in the Horticulture Office.**

Upon studying the financial statements, including the statement of financial position, statement of financial performance, and statement of changes in equity, a clear correlation between them is evident, in addition to a change in presentation method. The preparation of these financial statements under the International Public Sector Accounting Standards (IPSAS) reflects a significant difference between them and the financial statements prepared under the Iraqi government accounting system. The financial statements prepared under IPSAS enable a greater ability to evaluate non-profit government entities based on market values, providing users with more reliable information for their decision-making through financial analysis and presenting a clear picture of government performance and the extent to which it achieves its activity goals. This point will be further emphasized in the next section.

The table above displays a breakdown of the cash flow statement for the Horticulture Office for the years 2019 and 2020, using both vertical and horizontal analysis as follows:

There was an increase in the percentage of revenue earned in 2020 from agricultural and plant production revenues, while all other revenue items decreased in the same year. Cash was also collected from debtors. At the same time, all payment items witnessed an increase in 2020, which directly led to a decrease in net cash and cash equivalents during the period. This decrease was compensated by cash and cash equivalents at the beginning of the period. Therefore, the results and the end-of-period balance for the cash flow statement analysis match the presentation according to the system adopted by the Horticulture Office. This is because the presentation of the cash flow statement is based on the cash basis in both cases, but the presentation method for the items differs.

## 7 FINDINGS

1. By comparing the outputs of applying Standard 27 with the financial information of the Horticulture Office, it became clear that this information is not sufficiently clear regarding the office's financial position and does not provide adequate disclosure for users. Furthermore, it does



not provide the necessary tools to evaluate financial performance clearly in the government accounting system.

2. By implementing Standard 27 and its accompanying standards, financial information is ensured to be reliable in terms of recognition, measurement, and disclosure. The accounting treatments provided reflect the reality of the financial events and transactions, achieving a fair presentation of financial information through the statement of financial position, statement of financial performance, statement of changes in equity, and statement of cash flows. This adds a qualitative dimension to accounting information by providing data that affects decision-making and is comparable, making it useful for a wide range of users and decision-makers, and making financial information more international.

3. The accompanying standards for implementing Standard 27 ensure the reliability of recognition, measurement, and disclosure, as well as providing the necessary accounting treatments that reflect the reality of financial events and transactions in order to achieve a fair presentation of financial information. These treatments include the statement of financial position, statement of financial performance, statement of changes in equity, and statement of cash flows. By providing this information, a qualitative dimension is added to accounting information, where it affects decision-making and is comparable, making it useful for a wide range of users and decision-makers, and making financial information more international.

## 8 RECOMMENDATIONS

1. It is necessary to give due attention to the process of adopting international accounting standards for the public sector and adapting them to the Iraqi environment, and to determine an appropriate timeline for this process. Additionally, increasing public awareness of the importance of implementing these standards and educating the public about them is crucial, based on the legislative provisions of the Federal Financial Management Law, which allows Iraq to transition to international standards. These objectives can be achieved by forming a central committee that includes academics and professionals in the field of accounting and auditing, establishing sub-committees to implement and apply these standards, and identifying problems, obstacles, and inquiries that require external consultations.

2. Financial information regarding the events and transactions that occur during the fiscal year must be represented and disclosed in a way that ensures transparency and increases accountability. This can be achieved by adopting IPSAS standards, which ensure the preparation of high-quality financial reports containing accounting information with qualitative characteristics.

3. It is necessary to increase research and studies in the field of adopting international accounting standards for the public sector to uncover the importance of adopting these standards and to determine the impact of their application.

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