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Accounting and Valuation of Bearer Plants in Cameroon

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Abstract: This research essay empirically assessed the accounting and valuation framework adopted for bearer plants, such as bananas in Cameroon. The study adopted a qualitative research approach to assess the accounting and valuation process for bananas as a type of bearer plant in Cameroon. The study utilized both a secondary analysis and a survey to evaluate and decipher how the Cameroon Development Corporation (CDC) accounts and values the bananas that it produces and exports to the world. From the secondary analysis, the study found the major global producers/exporters of bananas and ranks Cameroon at a global level. Furthermore, the findings of the field survey conducted among the relevant stakeholders made several novel and remarkable findings on how the CDC accounts for and values its bananas. This study contributes to the existing knowledge by seeking to appraise the accounting and valuation framework adopted for bearer plants such as bananas. Specifically, the study found, contrary to the earlier studies, that bananas are adequately accounted for and fairly valued. Nonetheless, the study recommends that CDC and GEL's own internal assessments should not become a benchmark for accounting interpretation. Furthermore, it recommends that operational cash flows should be compiled monthly to facilitate auditing consistency.

Keywords: Agriculture Accounting; Bearer plants; Biological Assets; Bananas; Cameroon

JEL Classification: M41

1. Introduction

Modifications to accounting legislation on bearer biological assets were introduced in 2014. Agricultural activities evolve over time, and under so many economic, environmental, scientific, and accounting circumstances. This evolution extends to the processes of accounting for consistent growth of an agricultural asset, ability to compare recognition, definition, and standardized measurement criteria over specific timelines. Although International Accounting Standard (IAS) 41 is simple and convenient, it might not measure the best value of a bearer plant to an agricultural company in both developing and developed countries, overstating asset values on notes to financial statements. Likewise, different countries in the European Union have been reluctant to accept the introduction of bearer plants under

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IAS 16 for various compatibility issues, relating to specificities in different standards used.

Though agriculture is one of the oldest economic activities in the world, yet the parameters that influence decision making by farm owners, managers and lenders are complex, and involve both comparison of financial and non-financial data. In the words of Giraudeau (2017), the farm, unlike the typical brick and mortar business environment, seems like a distant and almost exotic site for accounting. This perspective is borne out of a long standing and in-depth historiographical bias that exists in the study of agriculture. Regardless, the historical relationship between accounting and agriculture remains a fragmented one which evidences the extent to which principles and practices of accounting techniques can be applied in specific and unconventional business contexts such as agriculture (Giraudeau, 2017; Amali et al., 2020)

From the standpoint of biological assets valuation, it is important to understand agricultural assets; what it means, and the associated biases in estimating financial values to biological assets using an established framework as prescribed in the IAS 41 on Agriculture (Van Biljon, 2016). This is necessary to ensure that the assigned value correctly represents the true state of financial and economic transactions relating to biological assets in the financial statements. Biological assets are owned for their capacity to undergo transformation (growth, procreation, regeneration, reproduction) and create economic benefits to the company. For instance, the introduction and conceptual definition of a bearer plant, clearly distinguishes between a bearer biological asset and an annual tree. This conceptual definition has further resulted in the need to understand the accounting treatment and applicable techniques for several distinctive types of biological assets. Hence, the application accounting techniques in the context of biological assets remains complex and demands critical judgements from researchers and practitioners (Van Biljon, 2016).

Despite these complexities, German et al. (2020) asserts that Agricultural accounting offers accountants, researchers, and agriculture professionals the opportunity to understand agricultural activities within business context. This opportunistic platform allows stakeholders in the agricultural sector to understand and contribute to the transformation of agricultural activities into a more capitalized industry. Following this backdrop, this research essay seeks to assess the accounting and valuation framework adopted for bearer plants such as bananas in Cameroon. To effectively achieve this, the essay seeks to achieve the following objectives: one, to identify the top global bananas producers/exporters and their accounting framework; two, to compare the measurement criteria for input costs among developing economies; and three, to ascertain the accounting and valuation framework the Cameroon Development Corporation adopts to value bearer plants such as bananas.

The subsequent sections of this research essay comprise of the literature review, methodology, data analysis and findings, conclusion.

2. Literature Review

Baigrie and Coetsee (2016) conducted a research study that analyzed sixteen major South African agricultural companies with significant investments in biological assets. From the analysis of the companies' financial statements, it was found that the agricultural companies adopt fair value accounting approach to measure and value their biological assets. Furthermore, the study concludes that the valuation methods adopted by South African agricultural companies for valuing biological assets are

sector specific.

Bozzolan et al. (2016) whilst pointing out the overgeneralization of accounting treatment in tropical countries whose fair values are determined by market forces of demand and supply, noted inconsistencies between recorded figures and factual values of the commodities. This was observed when using stakeholders' assessments as a reference point of assessment. A plausible explanation for this observation was that economic activities extend over jurisdictions. Hence, the study further suggests that financial reports should not be based on accounting practices that are limited by jurisdiction.

Goncalvesa and Lopesa (2016) considered how 324 listed agricultural companies that have adopted IFRS accounts for their biological assets. Whilst empirical findings suggest that majority of the companies adopt fair value accounting measurement, some others utilize the historical cost accounting. Furthermore, the study noted that the adoption of fair value measurement is based on several factors such as intensity of biological assets, listing status, firm size, and regulation expertise.

Scott et al. (2016) whilst using a content analysis research methodology, outlined several challenges relating to financial reporting of biological assets by government entities in South Africa. Amongst the highlighted challenges outlined include: the absence of an active market, a lack of available valuation techniques, poor understanding of the reporting requirements, high costs of adopting fair value accounting, restricted budgets regarding fair value accounting etc.

Ndala (2018) assessed the extent of compliance of agricultural entities in Southern Malawi to the reporting standards earmarked in the IAS 41 on agriculture. The study which was conducted via a survey among thirty-two relevant participants, concludes that the agricultural entities are compliant to IAS 41 principles in accounting for their biological assets. It was further noted that most of the entities account for their biological assets at fair value less estimated cost of sale at the point of harvest.

Van Biljon and scott (2019) stressed the cruciality of ensuring adequate biological asset disclosures to the relevant stakeholders. The authors assert that when reporting on biological assets, all necessary underlying accounting policies and related notes on the assets must be presented in a manner that enables user groups and stakeholders to fully grasp transactions and valuation methods adopted. This key to ensure transparency and faithful representation of biological assets transactions and valuations as contained in the financial statement.

Ibrahim (2019) studied the extent of compliance of listed agricultural companies on the Nigerian Stock Exchange to the disclosure requirements of IAS 41 on agriculture. The study found that about 75% of the sampled companies exhibited a strong compliance of over 70% adherence to the disclosure requirements of IAS 41 on agriculture.

3. Data and Research Methodology

The study is descriptive in content as available annual data on samples of banana trees cultivated are homogeneous. The cluster statistical sampling techniques used constitutes an integral component of the research. The study also considered methodical triangulation (mostly scientific) with decision usefulness approach, as opposed to naturalistic methods. The method is found most reliable for the research on the application of IFRS 13 and IAS 16 under OHADA and Economic Community for West African States (ECOWAS) accounting legislations. The focus area of this research essay is on the banana industry of

the Cameroon agricultural sector. More specifically, the study considered the Cameroon Development Corporation (CDC) as the case study for this research essay over the period of 2013-2016. The choice of this period is based on data availability. The CDC is the largest agricultural company in Cameroon, and the 3rd largest exporter of banana from the Africa, Caribbean, and Pacific (ACP) region to the European Union (EU). Due to the large geographical areas covered by vast plantations, the study sourced data from clusters representing a maximum of 500 trees.

Furthermore, the study utilized a qualitative approach, by conducting both a secondary analysis of literature as well as survey among relevant stakeholders to achieve the aim of the study.

Objective 1: To identify top global bananas producers/exporters and their accounting framework

To effectively achieve the first objective of the essay, the researcher identified the top 10 bananas producing countries, ranked per export volumes. In addition to this, the essay also identified their respective accounting legislations as well as the notable changes in the last 10 years in relation to accounting for the agricultural activity on bearer plants. This analysis was done via a secondary analysis of relevant materials, publications, and statistics.

Objective 2: To compare the measurement criterions for input costs among developing economies

To effectively achieve the second objective of this research essay, the researcher assessed the valuation techniques for the observable input variables. Once the valuation techniques have been established, the criteria for measuring observable input variables for 5 significant observable inputs used directly in the plantation to grow banana trees were duly considered. These criteria were further compared to the benchmark accounting standards in the banana sector of countries like the India/China and Ghana/Tanzania in Asia and Africa, respectively.

Objective 3: To ascertain the accounting and valuation framework the CDC adopts to value bearer plants such as bananas

To effectively achieve the third objective of this essay, the researcher utilized a structured questionnaire. The structured questionnaire was handed out to the group accountant, his two assistants, field manager, CDC head office accountant, 2 accounting clerks and 3 finance department staff between the 22/08/17 to the 15/09/2017. A condition of interest to the researcher was to assess the level of understanding of the accountants and senior managers, based on the application of IFRS 13 and IAS 16. Other relevant additional information was obtained from OHADA's official website and the Cameroon Chamber of Agriculture to support the primary data. The researcher adopted a methodical triangulation to analyze the collated data to accomplish the research objective.

4. The Data Analysis and Findings

Objective 1: To identify top global bananas producers/exporters and their accounting framework

The researcher has identified the top bananas producing and exporting countries in the world and their respective accounting legislations related to their agricultural activity on bearer plants (observable input costs). These countries have been summarized in Table 1.

Table 1. Top Global Bananas Producers/Exporters and their Accounting Frameworks

Country	Accounting Legislations	Year of Adoption	% Contribution to Global Agricultural Output
India	Indian Accounting Standards	2016	17.5
China	Chinese Accounting Standards	2006	8.8
Ecuador	IFRS	2010	10.1
Brazil	IFRS	2010	5.0
Indonesia	IFRS	2012	13.5
Angola	Angolan Accounting Law and the General Accounting Plan	2001	8.2
Guatemala	IFRS	2008	11.1
Tanzania	IFRS	2004	31.1
Mexico	IFRS	2009	3.6
Maple Academy	3	11	-8
Pine College	9	4	+5
Oak Institute	53	52	+1
Total	**998**	**908**	**90**

Source: Authors' Compilation (2021).

All accounting legislations related to property, plant and equipment in China converge with IFRS at initial measurement stages only. Consistency and comparability in measuring valuations under a revised IAS 16 has been hampered as Chinese Accounting Standards (CAS) 5 fails to prescribe a measurement criterion at subsequent reporting dates for "*observable*" input variables. Peng and Bewley (2010) describes the convergence effort made by emerging economies like China in adopting Fair Value under IFRS as "*progressive*" under new Chinese GAAP (also referred to as "2007 GAAP"). Evidence from Tweedie (2006) shows concern over uniformity (*de jure* convergence) attainment even among the EU member states who partially rejected some components of IFRS 13 (Jeffery, 2004; Peng and Bewley, 2010). A divergence between 2007 GAAP and IFRS in China, when compared to developing African economies, is noticeable with non-financial instruments like bearer plants. Thus, forbidding the usage of estimation techniques in valuation measurements with FV of biological assets (both IAS 41 and IAS 16).

Initiatives in Ghana and Tanzania on post-colonial reforms to financial accountability have prevented the conventional abuse of disclosure legislation to overstate financial statements by most public listed countries (Goddard et al., 2016). Convergence is a preference to the FASB, encouraging section 108(d) of the Sarbanes-Oxley Act to guide a principal-based and converging accounting legislation in the US, on valuation (using observable input costs) of Property, Plant and Equipment. Qualitative characteristics on comparability and consistency are important convergence benchmarks between US GAAP, Organization for the Harmonization of Business Laws in Africa (OHADA) and IFRS favouring adaptive stochastic financial modelling techniques on costs observed and collected from agricultural companies.

Objective 2: To compare the measurement criterions for input costs among developing economies

Cameroon is ranked 14th largest exporter of banana (5th largest commodity in the world) to the European Markets and abides by the West African Accounting System, moderated by the OHADA chart of accounts (Mayegle, 2014). From 1990 to 2007, the number of countries that have adopted IAS, has increased by 50 (68.5%), with national cultures hindering the ability to establish distinguishing criterion for observable input variables between the different economies (Perumpral et al., 2009). Comparability

of standards cannot be effective even among developing countries like Cameroon and Ghana. This claim aligns with Bozzolan, Laghi, and Mattei (2016). OHADA accounting allows for revaluation costs to be expensed when a change in accounting policy takes place, whereas the ECOWAS standard allows capitalization of all costs annually irrespective of changes in policy (from IAS 41 to IAS 16). The most advantageous value is derived from the use of banana trees to bear banana fruits (gross profits through sales). OHADA chart of accounts fails to recognize the immediate transferring of retained earnings to revaluation reserves for bearer plants during a revaluation upwards (Elad*, 2004). This ignores potential transfer of current portions of revaluation surplus reserves to distributable reserves or other comprehensive income (If company policy allows for such transfer). As presented in Table 2, OHADA hereby stipulates that all carrying amounts should be measured at cost of production to the agricultural company (CDC in French Africa). No carrying amount for biological assets should exist upon incidental scrap of the banana trees before intended date of write off (from disease outbreak or disaster).

Table 2. Analysis of the Measurement Criteria for Input Costs across Several Accounting Frameworks

	OHADA (for CDC in Cameroon)	**Chinese Accounting Standards 5**	**IAS 16**	**IFRS**	**ECOWAS (for GEL in Ghana)**
Format of presentation	Based on nature	Based on nature	Not specified	Based on nature	Based on nature
Valuation Premise	Based on amortized Historical cost	Based on Historical cost	Fair Value +/- Accumulated Impairment	Historical cost +/- Revaluation Surplus /deficit	Based on amortized Historical cost
Value-in-use as best value banana trees	Yes	Yes	Yes	Not specified	Yes
Revaluation upward being permissible	Yes	Yes	Yes	Yes	Yes
Capitalization of Observable input costs	Not Specified	Yes	Yes	Yes	Not specified
Impairment of biological assets if recoverable amount is less than carrying amount	Not Specified	Not Specified	Yes	Yes	Not specified
Independent Appraiser for revaluations	Not Specified	No	No	Yes	Not Specified
Treatment revaluations surplus Deficit	Equity Expense	Equity Expense	Equity Expense	Equity Expense	Equity Expense

Independent external valuation	Not Specified	Not specified	No	No	Not Specified
Maple Academy	3	11	-8		
Pine College	9	4	+5		
Oak Institute	53	52	+1		
Total	**998**	**908**	**90**		

Source: Authors' compilation

Objective 3: To ascertain the accounting framework the CDC adopts to value bearer plants such as bananas

All respondents agree the CDC uses the cost approach to record the value of banana trees upon recognition, with 70% being able to comment on valuation changes that have taken place since 2013. All except the 9th respondent agreed no changes in valuation parameters have taken place after a revaluation upwards performed by the CDC in 2013. 80% of respondents recognize the reliability in measuring fair value relating to agricultural activity, with all observable inputs distinguishable. Initial data capture is done on ledger accounts with computerized accounting secondary and final form of storing batches of captured data. 90% of respondents agree with the use of computerized systems. The recording of input data is consistent though one respondent was negative on the level of consistency, with going concern being the main factor influencing the valuation premise. Accounting methods for banana cultivation in the CDC have never been changed, with a useful life of 10 years that has not been modified since 2010. The valuation premise is explicit and dominated by observable variable costs. CDC uses the historical cost method and would recommend further research to be undertaken to improve the standards.

The identification of deviations between IAS 16 and OHADA was met with mixed reactions though half of respondents agree the deviations are immaterial to level of consistency and comparability. Only 40% of respondents have less than 10 years of experience in accounting and finance in CDC, which gives more credibility to the application of relevant accounting legislations. This finding is in line with Van Biljon and Scott (2019) and Ndala (2018).

Table 3. Survey Assessment of CDC Accounting and Valuation Framework for Bearer Plants Such as Bananas

	valuation premise	changes in valuation	fair value measurement	distinguishing observable/unobservable variables	accounting system used	consistency in recording input	circumstances influencing valuation method	implementation of IAS 16	accounting vs economic useful life	useful life of banana trees	categorizing the valuation premise	method achieving highest comparability	deviations of OHADA from IAS 16	years of experience	commending future research
1	3	1	1	1	2	4	2	1	1	2.9	1	2	3	2	1
2	3	1	1	1	2	2	1	1	2	5	1	2	3	1	1
3	3		1	1	2	2	1	2	1			1	2	1	1
4	3	1	1	1	2	2	4	1	1	10	1	2	2	2	1
5	3	1	2	1	2	1	1	1	1	10	1	2	1	3	1
6	3	1	1	1	2	2	2	1	1	10	1	1	2	1	1
7	3		1	1	2		1		1	10	2				1
8	3	2	1	1	1	2	1	1	2	6	1	2	2	2	1
9	3	1	2		2	2	1	1	1	10	1	2	1	5	1
10	3		1	1	2	1	1	1	1	10	1	2	2	1	1

Source: Author's computation from data obtained from the Survey assessment of CDC

5. Conclusions

The findings from this study suggest that China, India, Indonesia, Ecuador, Brazil, Angola, Guatemala, Tanzania, and Mexico are among the top-ranking producers and exporters of bananas globally. The study further identified their respective accounting legislations as well as their contributions to the global agricultural output. Furthermore, the measurement criteria for input costs were compared between OHADA and ECOWAS accounting frameworks using Cameroon (CDC) and Ghana (GEL) as representatives vis-à-vis a major global producer/exporter like China. The evaluation between the accounting frameworks provided insights on the distinctive approaches that both frameworks (OHADA and ECOWAS) adopted in the treatment of input costs for bearer plants such as banana trees. Lastly, the study provided in-depth insights on how the CDC accounts and values bearer plants, specifically bananas in Cameroon based on empirical findings. These findings suggest that bananas are adequately accounted for and valued. Nonetheless, the study recommends that CDC and GEL's own internal assessments should not become a benchmark for accounting interpretation. It further adds that operational cash flows should be compiled on monthly basis to facilitate auditing of consistency in class of accounts for each new portion of banana farm in the CDC and GEL.

The novel insights offered in this research essay are pivotal to the understanding of the accounting and valuation framework that are utilized by the Cameroon Development Corporation (CDC) for bearer plants such as bananas in Cameroon.

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