

Analysis of the process of measuring the biological asset through ias 41, in the sugar cane of the "Ayapamba parish"

Análisis del proceso de medición del activo biológico a través del ias 41, en la caña de azúcar de la "parroquia Ayapamba"

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Abstract

The study carried out whose topic is Analysis of the measurement process of biological assets through international standards in sugarcane in the Ayapamba parish, has allowed us to know that today companies try to be updated according to what is stipulated in the new standards. international, which have generated great impacts on theories, accounting systems and the regulatory framework of financial statements, so that the global process can be carried out and have an efficient organizational process. Taking as a reference the aforementioned, this study focuses on the agricultural sector since in this the processes for obtaining and extracting natural resources are fulfilled. That is why the research objective is to analyze the process of measuring biological assets through international standards in sugarcane,

Biological assets, NIC, Accounting, Agriculture

Resumen

El estudio realizado cuyo tema es Análisis del proceso de medición de los activos biológicos a través de las normas internacionales en la caña de azúcar en la parroquia Ayapamba, nos ha permitido conocer que hoy en día las empresas tratan de actualizarse de acuerdo a lo estipulado en las nuevas normas internacionales, las cuales han generado grandes impactos en las teorías, sistemas contables y el marco normativo de los estados financieros, para que el proceso global se pueda llevar a cabo y tener un proceso organizacional eficiente. Tomando como referencia lo anterior, este estudio se centra en el sector agropecuario ya que en este se cumplen los procesos de obtención y extracción de los recursos naturales. Es por ello que el objetivo de la investigación es analizar el proceso de medición de los activos biológicos a través de normas internacionales en la caña de azúcar,

Activos biológicos, NIC, Contabilidad, Agricultura

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Introduction

Agriculture throughout the life of the human being has taken on greater importance in what corresponds to the world economy, because this activity presents different procedures that occur on earth, which is the place where the raw material is produced, Being able to mention vegetables as an example and thus meet the needs of the human being and contribute to the economy of a country.

That is why, taking into account the aforementioned, the way to measure accounting assets is sought, for which the measurement of biological assets is given, which according to International Standards in relation to IAS 41, where it is proceeded to explain the regulations, procedures and requirements for the asset to belong to this group.

For these reasons, the research work is carried out for an adequate analysis where the measurement of biological assets is deepened through accounting procedures and in this way the incidence that occurs in the presentation of financial statements can be determined. of companies.

It should be noted that agricultural activity is of importance in the Ecuadorian economy, since it has a participation in the GDP with a considerable contribution, for which the development and role that is presented in the country must be analyzed, therefore they must be taken into account to have a good development of said work, the regulations and the development of the work must be applied by globalization, as well as be subject to continuous changes in the different processes, which will allow a better functioning of this activity.

It should be taken into account that agriculture apart from participating in the economy of a country due to production processes, it has also influenced the issue of poverty reduction, guarantees food in the world since it has the capacity perform various functions for economic development.

For these reasons, agriculture is related to the transformation processes to obtain a final product or in other cases to complement them.

Due to these transformations that occur in this activity and due to the contributions that have been made in the world, standards have been implemented to improve accounting processes, in this case biological assets, in the international accounting standards IAS 41, where the analysis can be carried out on the measurement, processes, characteristics and requirements that have to be fulfilled. For all this we proceed to develop the following article, which is structured as follows

Explanation of the sections of the article, it begins with the development, where the main topics of this study are explained, an analysis of the accounting accounts for the measurement of biological assets continues, the applied methodology is continued, the results study and finally the conclusions.

Developing

The Agriculture

Agriculture is the fundamental pillar for the development and coexistence of the human being as it is essential and at the same time complex, it promotes the use of land for agricultural production and the implementation of natural fertilizers in productive development since it helps to supply the needs food of a certain population, being one of the most important tasks that farmers work hard to offer a quality product, to enter a circle of approval related to investors that these are reflected in the financial statements; with prior application of the legal and current accounting bases (Eras Agila & Lalangui Balcáza, 2022).

Agriculture in Latin America

"The pandemic crisis leads us to rethink the future of Latin America," said the World Bank's Vice President for Latin America and the Caribbean, Carlos Felipe Jaramillo. "We need an agricultural sector that can meet the growing food needs of the region and the world at large, while avoiding further damage to the environment. With better policies and new technologies, the region's agri-food systems can make a greater contribution to growth, poverty reduction, and food and nutrition security."

Agriculture is important to many of the regional economies, accounting for between 5 and 18 percent of GDP in 20 Latin American and Caribbean countries, and an even higher share when considering the broader contribution of all food systems. However, despite a history of success, agriculture in the region is underperforming. Its remarkable achievements, reflected in growing production and higher net exports, came at the cost of significant environmental and health damage. It is particularly important to protect the region's environmental wealth and pay attention to food quality and safety, as well as nutritional security. "Latin America and the Caribbean is the breadbasket and lungs of the world," said Michael Morris, Senior Agriculture Economist at the World Bank and head of the team that wrote the report. "But the challenge is ensuring that he continues to play these roles. Policymakers need to focus on reducing market inefficiencies, building human and institutional capacities, being prepared for catastrophic risks, and taking advantage of emerging opportunities, while contemplating transformative reforms, such as making agrifood systems carbon neutral."

The report outlines twenty proposals that could help unlock the vast potential of agriculture and food systems in the region. Some of these proposals deserve priority attention since their success is assured. Examples of "no regrets" proposals include measures that aim to modernize agrologistics infrastructure (including information and communication technology), improve the training of workers in agricultural and food systems, make agricultural and food systems climate-friendly smart and deepen rural financial markets. Other key proposals are also mentioned to mitigate risks and build resilience in the face of multiple threats ranging from climate change, population pressures, the future of these systems is too important to be left to chance. (Washington, 2020).

In order to have an appreciation of the importance that should be given to the agricultural sector, some Latin American countries that use the land for their agricultural activities are indicated below.

Country	Hectares	Use	Activity
Colombia	50,102,269	39,017,179	livestock
		5,175,846	Agroindustrial
		4,617,116	agricultural
		1,292,128	Other uses
Mexico	24.6 million hectares	21.6 million	They are cultivated
		10.9 million	Cattle raising
		125 thousand ha.	aquaculture
Peru	38.7 million hectares	7'125.007	planted area
		1'983.593	transitory crops
		1,191,000	permanent crops
		778,007	cultivated pastures
Brazil	264 million	62 million	for planting
		30 million	pasture pasture
Ecuador	5.2 million	1.4 million	permanent crops
		822.5 thousand	transitory crops
		2.1 million	cultivated pastures

Table 1 Land use of countries

Source: (Eras Agila & Lalangui Balcáza, 2022)

Agriculture in Ecuador

According to Boza et al., (2021) 26.8% is where there is the highest concentration of employment by the economically active population of Ecuador. There are three aspects that make agriculture a fundamental pillar in the Ecuadorian economy. First, it represents an average of 9% of the country's total GDP.

1. Source of greatest income in the country, followed by trade and oil and mines.
2. the basis of the food sovereignty policy where the State guarantees people self-sufficiency in food permanently.
3. It contributes with a trade surplus to the country's trade balance, and a main source of income for dollars and foreign currency from exports.

The quarterly GDP of this sector registered a variable behavior during the analyzed series and better than the economy as a whole; however, for June 2021 it presented a decrease of 0.7% while the total GDP grew by 2.1% Boza et al., (2021).

Main crops of Ecuador

In 2018, the country's agricultural work surface reached 5.3 million hectares (ha), with a production of sugarcane (for sugar), bananas, African palm, rice, potatoes and dry hard corn, which exceeds crops of other products (Escalante and others, 2021)

Sugar cane (for sugar), bananas and African palm, along with other permanent crops, recorded a planted area of 1,464,589 ha. Total sugarcane production in metric tons TM was 7,502,251; Guayas concentrated 87.1% of that production. Los Ríos stood out with 38% of banana crops (a total of 6,505,635 mt); and, in Esmeraldas, the African palm prevailed with 42.7% (2,785,756 mt).

Meanwhile, rice, potatoes and hard corn, transitory crops with a harvest cycle of less than one year, along with others of this type, accounted for 941,280 ha planted.

Rice, one of the products that accompany various dishes of the Ecuadorian diet, had the largest harvest in this category: 1,350,093 mt. While the planted area throughout the country was 301,853 ha, concentrating 72.7% of the production in Guayas.

This information is derived from the latest Surface and Continuous Agricultural Production Survey (ESPAC), in which flower production is reported; roses had the highest production: 3,199 million stems cut in the country.

Regarding the livestock sector, bovine cattle predominated with a total of 4.1 million head, followed by pigs with 1.3 million; sheep, 356 thousand; horse, 193 thousand; mule, 74 thousand; donkey, 47 thousand; and, finally, the goat with 22 thousand.

48.4% of the cattle were registered in the Sierra, while 42.4%, in the Coast. By race, the mestizo prevailed with 1.5 million heads, which represented 37.7%; followed by Creole, with 23.8%.

Regarding the weekly production of chicken eggs, Tungurahua led with 20.7 million units. By region, the Sierra concentrated 85% of the production, the Coast 19% and the Amazon 0.9%. 0.001% corresponds to undefined areas.

Other important data in this survey relate to milk production; a total of 5 million liters are produced daily in the country. Pichincha registered 15.7% of the national total, equivalent to 790,666 liters (Ecuador in figures, 2018).

Short cycles	Long cycles	Foriculture
Rice	Banana	Pink
Corn	Banana	Hypericum
Dad	Sugar cane	Gypsophila
Bean	Cocoa	Carnations
Soy	African palm	Lilies
Gooseberry	Pineapple	Chrysanthemums
Chili pepper	Mango	Chrysanthemums
Rocoto	Blackberry	Aster
Mortiño	Passion fruit	Orchids
Mellocos	Lemon	Alstroemeria
Aromatic plants	Tangerine	Gerberas
Corn	Tangerine	Summer flowers
Parsley	Apple	
Asparagus	Turmeric	
Onion	Avocado	
Ginger	Coffee	

Table 2 Crops from Ecuador
Source: (Ecuador in figures, 2021)

Sugar cane and its process

Sugarcane is characterized by its good capacity to adapt to diversity of soils, climates, topography, fertility and production systems, as well as its great production capacity of green matter (more than 100 t ha year⁻¹) and dry per unit area (Lagos Burbano & Castro Rincón, 2019)

The process to obtain sugar consists of nine steps:

1. Cane cutting.
2. Grinding.
3. Steam generation.
4. Heating.
5. Clarification.
6. Filtration.
7. Evaporation.
8. Drying.
9. Molded.

Figure 1 Sugarcane process, see annex.

In the maturity stage, it is made up of approximately 71.82% moltable stems, 12.58% buds, 8.7% leaves and 6.9% chulquines, which may vary depending on the variety, age and environmental conditions. All this vegetative material is used by cattle, without the risk of losing its nutritional characteristics when it matures, therefore, it constitutes a highly available forage.

According to (International Accounting Standards 41, 2016) has as:

Aim

The objective of this Standard is to prescribe the accounting treatment, financial statement presentation and disclosures in relation to agricultural activity.

Scope

This Standard must be applied for the accounting of the following, whenever it is related to agricultural activity:

- Biological assets, except bearer plants.
- Agricultural products at the point of harvest or collection.
- Government grants covered by paragraphs 34 and 35.

This Standard is not applicable to:

- Land related to agricultural activity.
- Bearer plants related to agricultural activity (see ias 16). However, this standard will apply to the products of those producing plants.
- Government grants related to bearer plants (see ias 20 accounting for government grants and disclosure of government aid).
- Intangible assets related to agricultural activity (see ias 38 intangible assets).
- Right-of-use assets that arise from a lease of land related to agricultural activities (see ifrs 16 leases).

This Standard applies to agricultural products, which are the products obtained from the entity's biological assets, but only to the point of harvest or collection. From then on, IAS 2 Inventories or the other Standards related to products are used.

Biological active IAS 41	Agricultural product IAS 41	Result IAS 2
Sheep	Wool	Wool yarn
Trees of a forest plantation	Trees felled	Logs, wood
Dairy cattle	Milk	Cheese
Pigs	Slaughtered beef sausages	Cured hams
Cotton plants, dresses	Harvested cotton	Cotton thread
Sugar cane	Cane cut	Sugar
Tobacco plants	Collected leaves	Cured tobacco
Tea bushes	Collected leaves	Tea
Vineyards	Harvested grapes	Wine
Fruit trees	Harvested fruit	Processed fruit
Oil palms	Harvested fruit	Palm oil
Rubber trees	Collected latex	Rubber products

Table 3 Biological assets according to IAS 41
Source: International Accounting Standard IAS-41

Recognition and measurement

The entity shall recognize a biological asset or an agricultural product when, and only when:

- The entity controls the asset as a result of past events.
- It is probable that future economic benefits associated with the asset will flow to the entity.
- The fair value or cost of the asset can be measured reliably.

Earnings and losses

Gains or losses arising on the initial recognition of a biological asset at fair value less costs to sell and from a change in fair value less costs to sell of a biological asset should be included in net profit or loss for the period in that appear.

Impossibility of measuring fair value reliably

Presumes that the fair value of a biological asset can be measured reliably. However, that presumption can be rebutted, only at initial recognition, in the case of biological assets for which quoted market prices are not available, and for which alternative measurements have clearly been determined to be unreliable. of fair value.

Government grants

An unconditional government grant, related to a biological asset that is measured at its fair value less costs to sell, will be recognized in profit or loss when, and only when, such a grant becomes receivable.

Information to disclose

The entity shall disclose the total gain or loss arising during the current period from the initial recognition of biological assets and agricultural products, as well as from changes in fair value less costs to sell of biological assets.

IAS 41. Amendment 2016

Previously, it was specified as the accounting regulations that manage the agricultural, livestock, and shrimp sectors from planting to marketing. Therefore, until December 31, 2015, the companies that apply IAS 41 were subjected to the new adjustments as of January 1, 2016, where it is reflected in a general way for all the activities mentioned in IAS 41, therefore, it is You must take into account that there is a diversity of agricultural crops, as well as their cycle that can be short or less than one year and permanent cycle or more than one year, with the aforementioned reflecting the uncertainty and discernment when making the records of the operations , that is, the carrier plants will be considered as property, plant and equipment under IAS 16, due to the fact that their operation is similar to that of manufacturing. However,(Eras Agila and others, 2018).

Plants that produce fruits more than one period	Productive life	Estimated first harvest
Banana	20 years	7 months
Cocoa	40 years	4 years
Coffee	60 years	3 to 4 years
Oil palm	25 years	3 years

Table 4 Examples of producing plants that will be given the treatment of IAS 16

Source: Eras Agila et al., 2018

Biological assets	Farm products	Products resulting from the process after harvest
tobacco plants	collected leaves	cured tobacco
trees of a forest plantation	Trees felled	logs, wood
Fruit trees	harvested fruit	processed fruit
Sugar cane	cane cut	Sugar

Table 5 Examples of biological assets, agricultural products and harvest products

Source: IAS 41 (2019)

Differences (IAS 41 2015 and 2016)

Consequently, the differences by the amendment to IAS 41 in agricultural activity are clearly observed, such as the following:

Scope IAS 41 until December 31, 2015	Amendment to the scope of IAS 41 applicable as of January 1, 2016
Biological assets	Biological assets, but producing plants are no longer considered.
It does not apply to intangible assets related to agricultural activity.	Producer plants related to agricultural activity will be considered under IAS 16; however, IAS 41 will be applied to the products of the producing plants.
It applies to agricultural products, which are products obtained from the company's biological assets, but only up to the point of harvesting or harvesting. When the fruit is separated from the plant, then IAS 2, Stocks, will apply.	Official subsidies related to production plants. Accounting for official subsidies and information to be disclosed about public aid.

Table 6 Differences from IAS 41 between 2015 and 2016

Source: IAS 41, 2004; Amendment to IAS 41, 2014; Eras Agila et al., 2018

Measurement and fair value of the biological asset

A biological asset will be measured, both at the time of its initial recognition and at the end of the period on which it is reported, at its fair value less costs to sell, as well as, the harvested products will be measured at their fair value less costs of sale at the collection point (Jaramillo and others, 2020).

According to Chávez Cruz et al., (2022) The measurement of biological assets at fair value excludes qualitative and quantitative conditions of an active market, therefore, when an active market is absent, an expert's opinion is taken to estimate its measurement and this can become subjective.

Due to the aforementioned, organizations in some cases do not apply the fair value method, for the reason that it is difficult for them to obtain a referential value in the market and opt for a measurement at cost. (Carrión Rodríguez and others, 2021).

IAS 41 until December 31, 2015	IAS 41 modified by the amendment and applicable from January 1, 2016
The biological asset will be measured at fair value less cost to sell, from the initial recognition as on the date of each balance sheet. The development of the plantation and the development of its fruits are considered in a single account.	Producer plants through their development to when they are ready for their first production are measured at accumulated cost.
Plantations that produce agricultural products are considered biological assets of an entity, which will be measured at their fair value less costs to sell at the point of harvest or collection. In this case, for the measurement, the development of the plantation and the development of the fruit are considered in a single account.	There are two models: 1) Cost model: consists of considering the cost minus accumulated depreciation, minus the value of the impairment and the changes recognized in results. 2) Revaluation model: It consists of the fair value of each evaluation date, less accumulated depreciation, less the value of impairment, recognized in results, in other comprehensive income, and in the equity account.

At the end of the year or before each harvest, the producing plant and the agricultural producing plant are measured together, considering them in a single account.	At the end of the fiscal year or balance sheet date, agricultural products that are biological assets are measured at sales costs, but separately from the producing plants, that is, in different accounts.
Harvest or gathering of the fruit.	The producing plant is separated and agricultural products are measured at fair value less costs to sell, after harvest IAS 2 is applied.

Table 7 Comparison of recognition and measurement of bearer plants and biological assets of IAS 41 between 2015 and 2016

Source: IASB, 2004; AISB, 2017; Eras Agila et al., 2018

Agricultural accounting

According to Espinoza et al., (2016) It is a branch of specialized accounting and its accounting record is based within economic units of agricultural companies, therefore, knowing its structure contributes to establishing tax payments and infrastructure planning for the activity it manages.

According to Lopez (2014) The agricultural accounting adopts two accounting methods that are:

- Simple entry method: It is based on the registration of simple income and expenses, with instructions for its development.
- Double entry method: It is recorded by debits and credits with the structure of a chart of accounts according to the activity carried out.

Therefore, through the results of the agricultural accounting information, it contributes to obtain the costs of agricultural products, that is, with agricultural costs, the accountant is able to account for the production processes and biological transformations in the activity that he performs. the company (Boy and others, 2020).

In addition, the acceptance in the market depends on the adaptability of the crop in a production and correct measurement of the cost of sales in its harvested products. (Caicedo Aldaz and others, 2020).

Analysis of accounting accounts for measurement of biological assets

According to Elizalde(2019),the accounting record consists of maintaining the chronological order of transactions in a systematic way, therefore, its information processing is extensive, for example, for its inventories there can be three classes: warehouse, existence and exploitation accounts.

Also, at the time of accounting, disbursements must be taken into account when the biological asset is under development and its fair value less estimated costs for its sale must be recognized.(Marrufo Garcia & Cano Morales, 2021).

Date	Accounts	Reference	Should	To have
02-02-20	Biological asset under development		X	
	Banks			X
	P/R Purchase of the biological asset.			

Table 8 Example of an initial recognition
Source: Own elaboration

Class	Assets
Group	Non-Current Assets
Control account	Biological active
Account detail	Growing crops
Description	Record and control all accumulated costs from the account of short-cycle crops from planting to the point of flowering.
Debits	Credits
Record planting costs Application of agricultural inputs, among other materials, before flowering. Labor used in these crops. Other costs that are necessary for the growth of crops.	Transfer to the account crops in production. Sale of the crop at that stage.

Table 9 Growing crops ledger account
Source: (Eras Agila & Lalangui Balcáza, 2022)

Date	Bill	Should	To have
	Growing crops	xx	
	Inv. Agricultural supplies		xx
	Production payroll		xx
	Banks		xx
	P/R Allocation of inputs, labor and other costs used in growing crops.		

Table 10 Accounting record growing crops
Source: (Eras Agila & Lalangui Balcáza, 2022)

Class	Assets
Group	Non-Current Assets
Control account	Biological active
Account detail	Crops in production
Description	Record and control all accrued costs from the growing crop account of these short cycle crops from their flowering point to harvest, remembering that it is less than a year. In turn, this accumulation is the cost, therefore, before selling, the final recognition and measurement must be made as stated in IAS 41.
Debits	Credits
Records the costs of the growing crops account. Application of agricultural inputs, among other materials, after flowering until harvest in these crops. Labor used in these crops. Other costs that are necessary for the production of crops, usually services.	Final recognition of this crop, application of IAS 41.

Table 11 Accounting account crops in production
Source: (Eras Agila & Lalangui Balcáza, 2022)

Date	Bill	Should	To have
	Crops in Production	xx	
	Growing crops		xx
	P/R Transfer of costs from the growing crop account to the growing crop.		

Table 12 Accounting record transfer crops
Source: (Eras Agila & Lalangui Balcáza, 2022)

Date	Bill	Should	To have
	Biological asset (fair value)	xx	
	Crops in production (accumulated cost)		xx
	Fair value measurement gain		xx
	P/R Recognition and measurement according to IAS 41.		

Table 13 Accounting record of recognition and measurement according to IAS 41
Source: (Eras Agila & Lalangui Balcáza, 2022)

Methodology to develop

The methodology used in this paper is documentary or bibliographical and is part of quantitative research, since it contributes to the approach to the research problem thanks to the development of theoretical and historical foundations.

Pineda et al.,(2017)It allows us to glimpse that these methodologies allow discovering what has already been investigated so as not to duplicate the work already carried out by other authors and have their own authorship; witness the contributions, advances and trends developed in a characteristic area of knowledge; know working methods in similar fields; and obtain evidence and conclusions that contribute to ongoing investigations.

The identified sources of information correspond to articles from academic journals, institutional pages of universities, repositories and information centers, theses, conferences and books.

The process began with the search for information from scientific articles in the Utmach database. In the search engines of these data sources, logical connectors were used.

Results

Through the consulted investigations, it can be said that IAS 41 regulates the accounting record and the presentation of the financial statements of companies in the Agricultural sector, giving the guidelines for the valuation of biological assets.

Due to the factors that intervene in agricultural activity, such as climate, soil fertility, planting, growth, harvesting, fattening, which allows for changes in biological assets, they require special handling, different from other assets.

Biological changes are unpredictable due to external factors that are beyond the control of human intervention, therefore the standard allows reflecting the economic benefits not only due to changes in physical prices, but also due to the biological transformation of assets.

The products that are sown, grow, develop and end up in a harvest, that is, they are separated from the agricultural product of the Biological Asset from which it comes or when the vital products of the Biological Asset cease, such is the case that the tree must be cut to obtain the product. At the time of harvest, the company's management must determine the fair value less costs of sales of the biological asset.

Annexes

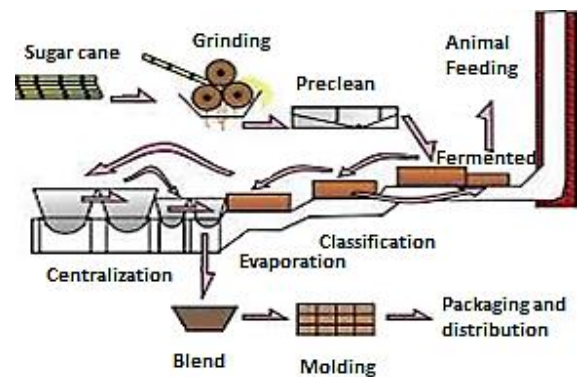


Figure 1 Sugarcane process

Conclusions

It is concluded that implementing IAS 41 in agriculture turns out to have a considerable advance in companies that are dedicated to the production of sugar cane, since thanks to international information standards it allows companies to have an adequate management of the accounting processes, as well as in the presentation of the information, in this way, it will be possible to show the financial reality through which they are going through.

It was evidenced that IAS 41 come to cover the entire issues related to the measurement of biological assets.

While the International Accounting Standard is considered as a tool to measure the organization of information to generate confidence when delivering financial statements and proceed to evaluate the amount of expenses that have been incurred by the company, in this way it is will proceed to make decisions on the valuation of these.

Biological assets can only be measured at their fair value less cost, allowing entities to choose the measurement that suits them for their financial statements, which is standardized for all sectors, as long as they present fair market values, if applicable. Otherwise, the cost will have to be measured less depreciation and will have to be accounted for under IAS 41 until the sugarcane harvest is reached.

IAS 41 cause a great impact on the structure of the financial statements because they have an independent item of biological assets, where non-current assets are individually accounted for since the products of the agricultural sector must have a specific term. to generate future profit.

References

- Boza, S., Herrera, X., Reyes, P., & Silvia, A. (2021). Agricultural Innovation Systems: A Look at the Situation of the Ecuadorian Agricultural Sector. *ECOCIENCIA Scientific Magazine*, 8, 237-254. <https://doi.org/https://doi.org/10.21855/ecociencia.80.615>
- Caicedo Aldaz, J., Puyol Cortez, J., López, M., & Ibáñez Jacome, S. (2020). Adaptability in the agricultural production system: A look from alternative sustainable products. *Journal of Social Sciences*, 26(4), 308-327. <https://www.redalyc.org/journal/280/28065077024/html/>
- Carrión Rodríguez, K., Caiminagua Ñaguazo, M., & Soto González, C. (2021). Accounting treatment of the Biological Asset: Production Plant, Amendment to IAS 41. *593 Digital Publisher CEIT*, 6(3), 122-132. <https://doi.org/https://doi.org/10.33386/593dp.2021.3.548>
- Chávez Cruz, G., Chávez Flores, R., & Maza Ñiñiguez, J. (2022). Measurement of Biological Assets applying IAS 41 when production passes to the following fiscal year. *Society & Technology Magazine*, 5(52), 299-313. <https://doi.org/https://doi.org/10.51247/st.v5i52.270>.
- Chico, L., Laje, J., Muñoz, L., & Andrade, P. (2020). Agricultural accounting in the determination of flower production costs. *FIPCAEC*, 5(3), 826-842. <https://doi.org/10.23857/fipcaec.v5i3.264>
- Ecuador in figures. (2018). <https://www.ecuadorencifras.gob.ec/2018-seis-cultivos-con-mayor-produccion-en-ecuador/>
- Ecuador in figures. (2021). Ecuador in figures. https://www.ecuadorencifras.gob.ec/documentos/web-inec/Estadisticas_agropecuarias/espac/espac-2021/Principales%20resultados-ESPAC_2021.pdf
- Elizalde, K. (2019). The accounting process according to international financial reporting standards. *Inclusive Education*, 3(3), 254-273. <https://doi.org/https://doi.org/10.33262/cienciadigital.v3i3.3.813>
- Eras Agila, R., & Lalangui Balcáza, MI (2022). IAS 41 and IFRS section 34 for SMEs in the sector. *UTMACH Editions*, 81. <https://doi.org/http://doi.org/10.48190/9789942241597>
- Eras Agila, R., Lalangui Balcazar, M., Carrión Rodríguez, K., & Cisneros Aliaga, M. (2018). Biological Asset: amendment to IAS 41 production plant. *UTMACH Science Week 2018. CTEC 2018*. <https://investigacion.utmachala.edu.ec/proceedings/index.php/utmach/article/view/404/511>
- Escalante, M., Urbina, S., Sotomayor, K., Bandera, V., & Farinango, F. (2021). Analysis of the productive structure of the Ecuadorian economy: Exports of the Agricultural Sector. *Society and Technology*, 4(3), 380-398. <https://doi.org/https://doi.org/10.51247/st.v4i3.144>
- Espinoza, V., Sulca, G., & Becerra, E. (2016). *AGRICULTURAL ACCOUNTING*. <http://www.dspace.uce.edu.ec/bitstream/25000/21009/1/Contabilidad%20agr%C3%ADcola.pdf>
- Jaramillo, J., Moreno, V., & Torres, M. (2020). Application of IAS 41 in the accounting-tax treatment of biological assets in shrimp companies. *Interdisciplinary Journal of Humanities, Education, Science and Technology*, 2(6), 310-337. <https://doi.org/DOI10.35381/cm.v6i2.371>

Lagos Burbano, E., & Castro Rincón, E. (2019). Sugar cane and by-products of the sugar agro-industry in the feeding of ruminants. *Mesoamerican Agronomy*, 917-934. <https://www.redalyc.org/journal/437/43760145020/html/>

Lopez, B. (2014). Elements of agricultural accounting. Veracruz University. <https://libros.uv.mx/index.php/UV/catalog/download/TU168/42/292-1?inline=1>

Marrufo Garcia, R., & Cano Morales, A. (2021). ACCOUNTING TREATMENT OF BIOLOGICAL ASSETS AND AGRICULTURAL PRODUCTS. *Vision of the Future*, 25(2), 40-62. <https://doi.org/https://doi.org/10.36995/j.visiondefuturo.2021.25.02R.002.es>

International Accounting Standards 41. (2016). <http://nicniif.org/files/NIC%2041%20Agricultura.pdf>

Pineda, J., Cervera, A., & Oviedo, W. (2017). Bibliographic review of the application of the DEA methodology in Colombia by economic activity. *Social and Human Sciences*, 17(32), 133-160. <https://doi.org/https://doi.org/10.22518/16578953.823>

Washington. (November 1, 2020). The agricultural and food systems of Latin America and the Caribbean are ready for a profound transformation.