Volume **X**/2019 ISSN 2344-102X
Issue (XX) / **June** 2019 ISSN-L 2344-102X

A LITERATURE REVIEW OF ARTICLES ASSESSING THE EXTENT OF COMPLIANCE WITH IAS 41

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Abstract
The adaptation to new accounting standards has affected many companies. The greatest challenge by the agricultural companies is that International Accounting Standard (IAS) 41 regulates the valuation methods of their biological assets. The paper develops a literature review of the articles assessing the extent to which various agricultural entities are complying with recognition and measurement requirements of IAS 41-Agriculture, for their agricultural and biological products. Therefore, our analysis imposes the use of literature review methodology. After briefly introducing the concept of financial accounting for agriculture and problems of IAS 41, the first part of the paper follows the areas of accounting estimates related to valuation of long-term biological assets according to International Accounting Standards, as well as the challenges that arise when implementing the provisions of the relevant standards. The main part of the paper discusses empirical studies which assess the extend the degree of compliance with IAS 41, by closely analyzing their research design, the employed research methodology and the obtained results. The originality of the paper as well as its contribution consist in offering a comprehensive overview on studies in accounting research literature that analyze the practical challenges of applying IAS 41 before and after the revision of this standard through an empirical approach.

Key words: *agricultural firms; IAS 41; disclosure; compliance; fair value; sustainability.*

JEL Classification: *M41; Q14.*

I. INTRODUCTION

In recent decades, there has been a growing interest in the global agricultural sector: the instability of commodity markets and rising food prices, demographic growth, environmental constraints in food production and the consequences of climate change are all elements that, in today's reality, have given agriculture a strategic role on issues of vital importance for the development of society and the world economy. In other words, the functions covered by the agricultural sector vary considerably globally: while in developing countries agriculture is the main source of subsistence, which aims to meet the nutritional needs of the population, in advanced countries, the agricultural sector achieves objectives that go beyond the satisfaction of the food function. Topics such as environmental protection, rural development, biodiversity protection, energy production from renewable sources, have become indispensable topics to create a new development model, capable of providing adequate responses to the economic and social policies of many states (Ciubotariu, 2013). For example, in 2018, Romanian agriculture ranked 3rd in the EU, after France and Germany, in cereal production (31.9 million tonnes). Romania reached 4th place in the EU, with 10.3 million tonnes of wheat production (see https://appsso.eurostat.ec.europa.eu).

Agriculture is representing one of the main incomes generating pillars to the state budget and for this reason the specific regulations on treatments and accounting policies represent the goal of many other orders and specific rules and regulations (Zlati & Antohi, 2018: 104). Considering the diversity of agricultural activities (animal breeding, forestry, annual or perennial plant cultivation, cultivation of fruit trees or other plantations, floriculture and aquaculture, including fish farming), characteristics, but also different ways of accounting for these activities in different countries, the need to issue a specific accounting standard emerged. (http://www.ceccarbusinessmagazine.ro/aspecte-privind-tratamentul-contabil-al-activelor-biologice-si-produselor-agricole-a4719/; Ciubotariu &Sandulachi, 2019).

The application of the classic accounting models, based on the historical cost or the achievable value, proves to be inadequate in the agricultural sector, because they cannot represent the economic and patrimonial dynamics of this typology in a clear, truthful and correct way of economic activity. In this case, the agricultural activity is characterized by critical events, such as procreation, growth, degeneration, which involve qualitative and quantitative changes in the activities themselves, which are not expected to be represented with traditional accounting models (Toscano, 2014: 8; Bostan et al., 2015).

As for the fixed assets of a company, there is one of special interest in this research that is biological assets, which, apart from being very common in the country's economy, little regulation of them exists, hence the norm

Volume **X**/2019 ISSN 2344-102X
Issue (XX) / **June** 2019 ISSN-L 2344-102X

of accounting information (IAS) 41 is dedicated exclusively to the explanation and valuation of such assets.

Based on IAS 41 and IFRS 13 – Fair Value Measurement, a valuation and application methodology is presented to a biological asset of the real sector, such as the Hass avocado cultivation, which has become one of the most demanded products internationally with a growth of 3%, due to its nutritional and vitamin properties that make it an investment opportunity for country such Colombia.

This article aims to analyse the theoretical and empirical aspects of IAS 41: Agriculture, based on the results of several other prior empirical research.

II. REFERENCE TO INTERNATIONAL ACCOUNTING STANDARD 41

The increasing importance assumed by the agricultural sector in the world economy and the problems existing in accounting representation and in the evaluation of agricultural activities determined the IASC, in 2001, to issue a sector-specific accounting standard: IAS 41 Agriculture.

The objective of IAS 41 is to prescribe the accounting treatment and to present information on agricultural activities. IAS 41 should be applied for the accounting of biological assets, agricultural products at the time of harvest and government grants (see Figure 1). Therefore, this standard represents the starting point in evaluating the fair value of agricultural assets (http://www.ceccarbusinessmagazine.ro/aspecte-privind-tratamentul-contabil-al-activelor-biologice-si-produselor-agricole-a4719/).

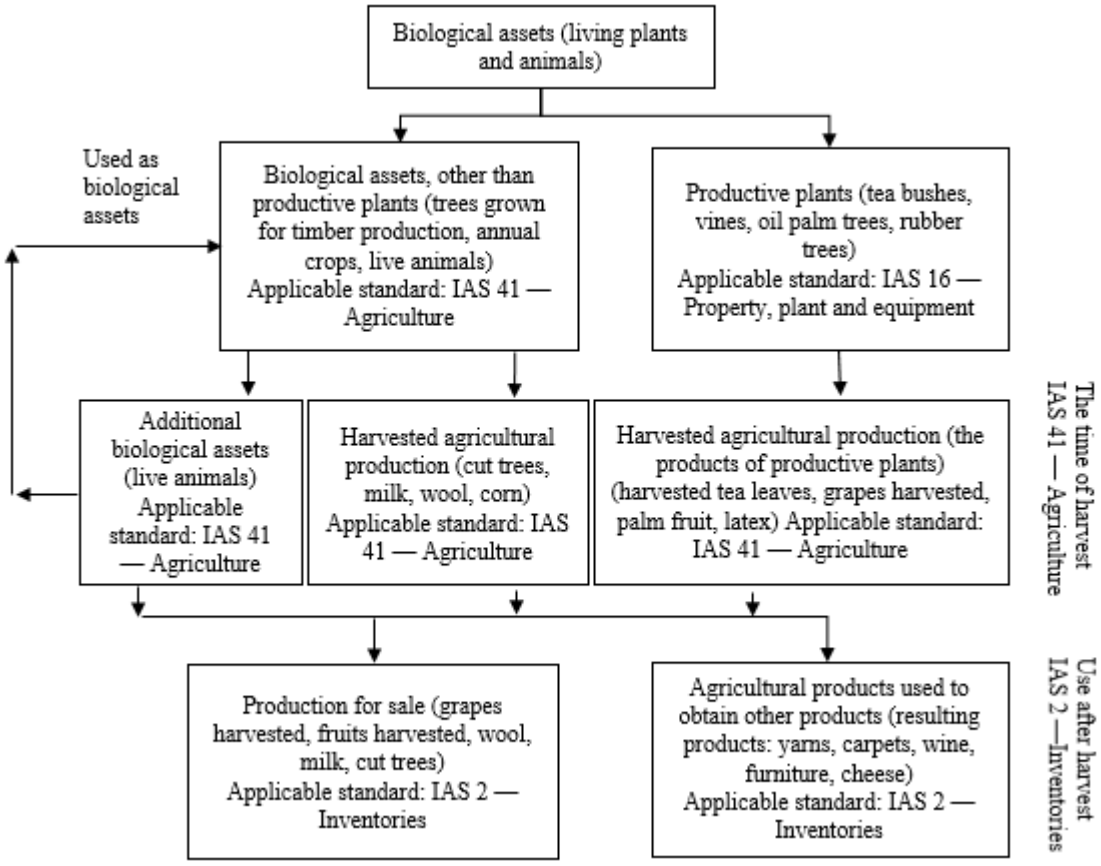

Figure 1 – Assets specific to the agricultural field - applicable accounting provisions
Source: Gughea & Iordache, 2017: 5

IAS 41 prescribed an assessment of the fair value of biological assets and agricultural products, with the exception of rare, appropriately outlined exceptions, in which an assessment is made at historical cost. This accounting standard represents a significant change of direction by the IASC Council regarding the accounting principles previously issued: in fact, IAS 41 represents the most radical departure from accounting to historical costs. In addition, confirming its innovative scope, for the first time profits or losses related to changes in the fair value of a biological asset are included in the profit account, including profit and loss components, which are configured in this operational result in which positive unrealised components converge.

Volume **X**/2019 ISSN 2344-102X
Issue (XX) / **June** 2019 ISSN-L 2344-102X

III. APPLICATION OF JUST VALUE IN IAS 41: PRO POSITIONS AND AGAINST JUST VALUE IN THE IAS DEBATE

There have been frequent debates in the academic and professional environment about the pros and cons of fair value regarding the application of IAS 41.

Table 1. For and against opinions about the fair value assessment of biological assets in accordance with IAS 41

The supporters of a fair value measurement within IAS 41	Those who are against a valuation of biological assets at fair value and pay for a valuation at cost
- fair value makes it possible to highlight, with greater clarity, the effects of changes resulting from biological transformations;	- there is greater reliability in the evaluation of costs since the historical cost is considered the result of transactions between independent counterparties and provides evidence of a free market value at a precise instant in time and is independently verifiable;
- changes in fair value may be more directly related to changes in expectations of future benefits. For example, in the case of a growing forest plant, using an accounting system based on the historical cost, no revenue could be entered in the balance sheet until the first collection and sale (the period from the time of the plantation, at the harvest, an average of 30 years). On the contrary, the revenue is valued and recorded for the entire period up to the time of initial collection if an accounting system is used that detects and assesses biological growth using fair value;	- the market prices underlying the valuation at fair value are often volatile and cyclical. The non-verifiability of fair value, often based on subjective assessments, risks providing incorrect information to users of the financial statements;
- the fair value has greater relevance, reliability, comparability and comprehensibility for the assessment of the future economic benefits expected from the biological activities with respect to the historical cost;	- a periodic fair value assessment is significantly more expensive than a cost valuation, particularly if infra-annual reports are required;
- many biological assets are marketed in active markets with observable market prices. The presence of active markets significantly increases the reliability of the market value as an indicator of fair value, while the valuations at cost of biological assets are sometimes less reliable because joint products and costs can create complex and arbitrary cost allocations among the different products of biological transformation;	- the historical cost convention is well consolidated and commonly used, moreover it provides a more objective and consistent evaluation criterion with respect to the fair value;
- the relatively long and continuous production cycles, with volatile production and market environments imply that the administrative period often does not coincide with a complete cycle. As a consequence, an evaluation of the end of the year (as opposed to an assessment made at the time of the transaction) takes on greater significance in producing a measure of the current period result;	- the markets of some biological activities do not exist in some countries (in particular for the biological activities that have a long period of growth such as forest plantations) making it impossible to calculate the fair value, moreover many biological activities are not possessed for the sale, so that their correlation with the fair value, at a given date may not be valid.

Source: Adapted after Toscano, 2014: 57

In conclusion, with reference to agricultural companies, the Board of the IASB considered the adoption of a fair value measurement system more appropriate, since fair value has a greater ability to reflect the effects of changes brought about by biological transformation. To confirm this, there is a presumption that changes in the fair value of biological assets have a direct relationship with changes in expectations of future economic benefits for the entity. Furthermore, considering the limits of this evaluation criterion, the Board has deemed it appropriate to include a derogation in cases in which the prices or values determined by the market were not available and in which the alternative estimates at fair value were deemed unreliable. The choice by the Board to use the fair value criterion as a valuation method finds its origin in the awareness on the part of the international accounting body of the difficulty of achieving a correct and reliable determination of the production cost of biological assets and agricultural products (di Lauro, 2006).

Volume **X**/2019 ISSN 2344-102X
Issue (XX) / **June** 2019 ISSN-L 2344-102X

IV. SHORT REVIEW OF EMPIRICAL STUDY

This international standard has been widely criticized by researchers and accounting observers. Table 2 shows the most critical researches in terms of purpose, sample/method(s), findings as well as the utility.

Table 2. Literature review - research on IAS 41

Authors	Research purpose	Sample	Findings	Utility
Manurung, & Martani (2019)	Explain descriptively about how the presentation, disclosure and major amendment change of IAS 41 impacts plantation agricultural companies	This study examines the financial statement data of seven plantation companies listed in Singapore for the year 2014–2015.	The results show that those companies presented and disclosed the requirements of amendment of IAS 41, in accordance with its contents	Useful to management of agricultural entities and users of financial information
Ibrahim (2019)	Determine whether listed agricultural firms in Nigeria have complied with disclosure requirement of IAS 41 in financial reporting framework; and to determine the level of the compliance	This study examines the published financial statements data of five agricultural companies listed on the Nigerian Stock Exchange (NSE) for the period of 5 years (2013-2017).	The results suggest that enforcement mechanisms to ensure total compliance should be put in place to address the existing compliance gap particularly on the requirement 5, 8, 15, & 16 of the standard. This shows that majority of the agricultural firms in Nigeria strongly complied with the disclosure requirements of IAS 41.	Useful to the Financial Reporting Council of Nigeria, to support them to publish annually the compliance status of all listed firms; so that the compliance status of every firm will become known to all interested users of financial statements; and also useful to the Council in order to urge external auditors of firms to ensure that their clients are complying with the requirements of IASs.
Huffman, (2018)	Examine whether fair value is more relevant when it is applied to in-exchange assets than when it is applied to in-use assets.	Test the framework on a sample of 183 international firms that adopt International Accounting Standard 41, using a difference-in-differences approach	Results show that earnings information is significantly more relevant when firms measure in-exchange biological assets at fair value, but book value and earnings information is significantly less relevant when firms measure in-use biological assets at fair value; investors discount the fair value of in-use biological assets and their associated unrealized gains and losses relative to the fair value of in exchange biological assets.	Useful to standard setters and those interested in conceptually based asset measurement
Hsu, Liu & Man (2018)	Investigates whether the adoption of IAS 41 can facilitate firm-specific information for agricultural activities capitalized into stock prices, as measured by idiosyncratic volatility.	IAS 41 adopters from countries that mandates IFRS in 2005 and the control samples of non-IAS 41 adopters.	Stock price in formativeness for IAS 41 adopters increases from the pre-adoption period to the post-adoption period; the effect is not different between firms that transform bearer plants, which derive	Helpful to IASB as the Board evaluate the usefulness and cost/benefit of its standards in this area.

Volume **X**/2019 ISSN 2344-102X
Issue (XX) / **June** 2019 ISSN-L 2344-102X

Authors	Research purpose	Sample	Findings	Utility
			value in use of assets and other biological assets.	
Zlati & Antohi (2018)	Empirical analysis of the accounting, standardization context of the treatment of biological assets and statistical dissemination of information.	The study of financial data reported on a national level on two important directions of agricultural activity regulated by NACE 141 and 130	An econometric model of financial performance related to stock policy biological assets with phenomenological relief of the stock cycle and their transformation into financial potential depending on the monetary independence reflected by the liquidity fence of the assets held by the agricultural entities.	Useful to management of agricultural entities and users of financial information, meaning it shows an improved perspective of the accounting approach on biological assets
Silva & Nardi, 2018	The study investigates whether the information about "biological assets provides investors with high-quality data, as demonstrated by the relevance of biological assets and changes in their fair value".	Test the framework on a sample of 377 companies from 58 countries, collecting information from Thomson Reuters.	The results revealed that the "variation in the biological assets and in the fair value of those assets is irrelevant to the capital market, even after restricting the analysis to common law, monitored by analysts".	Useful for different accounting users, including the regulator IASB, which is constantly reviewing the international standards.
Cavalheiro, Kremer & Gimenes (2017)	Empirically approaching a fair-value based methodology to evaluate biological assets, without an active market	A soybean crop in the Mato Grosso do Sul State was evluated. Discounted Cash Flow (DCF) was the chosen evaluation method. Data collection was done through analysis of internal reports and semi-structured interviews.	Besides using economic and accounting knowledge, it is advisable to consider agronomic knowledge since this type of information influences the valuation of biological assets in quantitative and qualitative terms.	The study contributes to minimizing subjectivity in valuation of biological assets and improve their comparability by stakeholders.
Baigrie & Coetsee (2016)	Assesses the extent to which South African public companies that are engaged in agricultural activities are complying with the compulsory recognition and measurement and compulsory and voluntary disclosure requirements of IAS 41 Agriculture.	Sixteen large South African public companies with material holdings of biological assets in their statements of financial position.	Results show that the majority of South African agricultural companies are using fair value to measure their biological assets at initial recognition as well as at the end of each reporting period.	This study contributes to the existing literature by providing an analytic framework and a baseline on the financial reporting of agricultural entities in South Africa prior to the implementation of IFRS 13.
Ndung'u, (2012)	To establish the extent of compliance with IAS 41 by listed agricultural companies on the Nairobi Securities Exchange.	Listed agricultural companies on the Nairobi Securities Exchange.	The results reveals the fact that the 'specific areas of non-compliance were in the financial disclosures with a non-compliance level of 20%, non-financial disclosures with non-compliance level of about 60% and other disclosures with a non-compliance level of 100%".	The study rings an alarm for the authorities "to apply more vigilant compliance policies which may include penalties to companies or institutions that do not comply with IFRS in order to ensure full compliance by all companies which are required by law to comply with IFRS".

Source: Author compilation

Volume **X**/2019 ISSN 2344-102X
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The specialized literature in this field, at present, is laborious, finding the existence of a significant number of scientific works both internationally and internally.

In support of these statements, we note that, in Romania, only a small number of entities and groups apply IFRS (International Financial Reporting Standards), including IAS 41 "Agriculture", and internationally, the opinions are controversial, namely:

1. Barlev & Haddad (2003: 383) believe that fair value in accounting leads to full disclosure of information and it is compatible with transparency.
2. Lefter & Roman (2007) refer to the importance of IAS 41 because it represents the starting point of a consistent transition from the acquisition cost to fair value accounting.
3. Argilés, Bladon & Monllau (2009: 16) stated that fair value implies at the same time a more consistent method of evaluation and a more reliable and comparable source of information.
4. Aryanto (2011) specifies that IAS 41 has generalized the fair value assessment for all biological assets, although not all these assets are in the category of those expecting a capital increase or a sale, which leads to the provision of wrong information.
5. Mates, Grosu, Hlaciuc, Bostan, Bunget, Domil & Artene (2015: 714), asserted that the conflicts between Romanian national accounting norms and IAS 41 are due to the fact that agricultural food companies reduce the importance of measuring below historical cost in favour of fair value.
6. Other authors support the accounting treatment prescribed by this standard. In the study undertaken by Vazakidis, Athianos and Ekaterini (2010), they investigated the differences between accounting practices, the role and magnitude of accounting information in the agricultural sector. The authors conclude that the main contribution of IAS 41 is to provide a comprehensive conceptual framework in agricultural accounting practice, and RICA is an experienced data network, which could be a guide for the implementation of IAS 41 (Bercean, 2018: 28).

V. CONCLUSION

However, agriculture accounting and valuation guides in this sector still have many shortcomings. IAS 41 represents an attempt to improve this situation and to increase the comparability of the financial statements of agricultural companies.

As pointed out by other researchers, I believe that although the application of IAS 41 in several countries implies the uniformity of financial reports, even so the quality of accounting information on biological assets is compromised. I believe that there is a need for a radical change in the behaviour of economic agents in the disclosure of financial statements, this fact may influence the level of implementation of IFRS implementation.

It seems appropriate to conclude that the research carried out plays an important role in the accounting regulation process by the fact that they help to identify the various aspects that derive from the subtleties of the regulations (obtaining useful information for structuring them). Researchers interested in this field are familiar with the concepts underlying financial reporting, which are the authors of unrelenting analytical work. While regulatory bodies need to take into account the multiple issues that lead to the development of a standard, the research activities are those that provide the information needed for that standardization process and have the necessary questions that the final standard must address.

Acknowledgment

"This work is supported by project POCU 125040, entitled "Development of the tertiary university education to support the economic growth —PROGRESSIO", co-financed by the European Social Fund under the Human Capital Operational Program 2014–2020."

VI. REFERENCES

1. Argilés, J.M., Bladon, J.G., Monllau, T. (2009). *Fair value versus historic cost Valuation for Biological assets: Implications for the quality of financial information.* Working Papers in Economics, 215, Universitat de Barcelona. Espai de Recerca en Economia.
2. Aryanto, Y. H. (2011). *Theoretical Failure of IAS 4*. Retrieved March 10, 2019 from: https://ssrn.com/abstract=1808413 or http://dx.doi.org/10.2139/ssrn.1808413.
3. Aspecte privind tratamentul contabil al activelor biologice și produselor Agricole (Aprilie, 2019). 12, Expertiza si Auditul Afacerilor, Retrieved March 10, 2019 from: http://www.ceccarbusinessmagazine.ro/aspecte-privind-tratamentul-contabil-al-activelor- biologice-si-produselor-agricole-a4719/.
4. Baigrie, I., Coetsee, D. (2016). *An analysis of the financial reporting compliance of South African public agricultural companies.* Journal of Economic and Financial Sciences, 9(3), 833-853.
5. Barlev, B., Haddad, J. R. (2003). *Fair value accounting and the management of the firm*. Critical Perspectives on Accounting 14 (4), 383-415.

Volume **X**/2019 ISSN 2344-102X
Issue (XX) / **June** 2019 ISSN-L 2344-102X

6. Bercean, D. R. V. (2018). *Abordări Doctrinare privind Tratamentul Contabil Prescris de IAS 41*. Agricultura, RFPC 1, Studiu, 23-35. Retrieved March 20, 2019 from: http://discutii.mfinante.ro/static/10/Mfp/resurse/revista/articol_nr1_2018_dumbrava_bercean.pdf.
7. Bostan, I., Mates, D., Hlaciuc, E., Grosu, V., Socoliuc, M., Andronic, B., Ciubotariu, M.S., Apetri, A., Morosan, G. & Mihalciuc, C. (2015). Exploitation of fishing resources in Suceava county: Profitability analysis (Rb/T) of specialized farms in a mountainous region. Archives of Biological Sciences, 67(3), 909-920.
8. Cavalheiro, R. T., Kremer, A. M., Gimenes, R. M. T. (2017). *Fair Value for Biological Assets: An Empirical Approach.* Mediterranean Journal of Social Sciences, 8(3), 55-68.
9. Ciubotariu, M. S. (2013). The role of small and medium enterprises in the modern economy and the importance of IFRS application for SMEs. The USV Annals of Economics and Public Administration, 13(1 (17)), 201-210.
10. Ciubotariu, M., Sandulachi, A:M. (2019). Politici şi tratamente contabile privind activele biologice în piscicultură, International Scientific Student Conference ,,Prospects Of Accounting Development: The Young Researcher's View", 15 Martie, Chisinau, III Edition.
11. Di Lauro, G. (2006). Le aziende agrarie: logiche valutative e problemi applicativi dello IAS 41. Cacucci, Italy
12. Gughea, M., Iordache, I. (2017). *Tratamentul contabil al unor operaţiuni specifice domeniului agricol.* Revista Finanţe Publice şi Contabilitate RFPC, (10).
13. Hsu, A. W. H., Liu, S., Man, M. (2018). *Fair Value of Biological Assets and Stock Price Informativeness: Evidence from IAS 41.* Working Paper Series 2018-1, Retrieved March 25, 2019 from: http://www.cier.edu.tw/public/Data/2018-1.pdf.
14. Huffman, A. (2018). *Asset use and the relevance of fair value measurement: evidence from IAS 41*. Review of Accounting Studies, 23(4), 1274-1314.
15. Ibrahim, N. (2019). *An Assessment of Compliance with Disclosure Requirements of IAS 41 (Agriculture) By Listed Agricultural Firms in Nigeria*. American International Journal of Agricultural Studies, 2(1), 9-18.
16. Lefter, V., Roman, A., G. (2007). *IAS 41 Agriculture: Fair Value Accounting.* Theoretical and Applied Economics, 5.
17. Manurung, A. T., Martani, D. (2019, July). *Analysis of the IAS 41 Amendment's Application to Agriculture in Singapore's Listed Plantation Agriculture Companies*. In Asia Pacific Business and Economics Conference (APBEC 2018). Atlantis Press. Retrieved April 02, 2019 from: https://www.atlantis-press.com/proceedings/apbec-18/125913772.
18. Mates, D., Grosu, V., Hlaciuc, E., Bostan, I., Bunget, O., Domil, A., Artene, A. (2015). *Biological assets and the agricultural products in the context of the implementation of the IAS 41: A case study of the Romanian agro-food system*. Archives of Biological Sciences, 67(2), 705-714.
19. Ndungu, J.K. (2012). *The extent of compliance with IAS 41 by limited agricultural companies listed on the Nairobi securities exchange*. Retrieved March 25, 2019 from: http://erepository.uonbi.ac.ke/bitstream/handle/11295/13730/JACKSON_KIHUMBA_NDUNGU_MBA_2012.pdf?sequence=2.
20. Toscano, G. (2014). *Un principio contabile internazionale specifico per le attività agricole: Lo Ias 41 Agriculture. Analisi e considerazioni critiche alla luce delle recenti modifiche apportate dallo IASB* (teza de doctorat). Università di Pisa, Pisa, Italy, 2013-2014.
21. Vazakidis, A., Stergios, A., Laskaridou, E. (2010). *The importance of information through accounting practice in agricultural sector-European network*. Journal of Social Sciences, Retrieved April 02, 2019 from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1829426.
22. Zlati, M. L., Antohi, V. M. (2018). *Accounting treatments and policies for biological assets from the perspective of IAS 41 Agriculture*. Risk in Contemporary Economy, 104-113,104.
23. ***Eurostat. Retrieved March 25, 2019 from: https://appsso.eurostat.ec.europa.eu.