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THE DIFFICULTY OF MEASURING BIOLOGICAL ASSETS UNDER IAS 41: AGRICULTURE

LA DIFFICULTÉ DE MESURE DES ACTIFS BIOLOGIQUES SOUS IAS 41: AGRICULTURE

Amine AZHARI

Doctorant, Faculté des Sciences Juridiques, Economiques et Sociales Agadir

Équipe de Recherche en Management, Audit et Contrôle des organisations (**ERMACO),**

Laboratoire d'Études et de Recherches en Economie et Gestion **(LEREG)**,

Université Ibn Zohr, Agadir, Maroc.

Amine.azhari@edu.uiz.ac.ma

Si Mohamed BOUAZIZ

Enseignant-chercheur, Faculté des Sciences Juridiques, Economiques et Sociales Agadir

Équipe de Recherche en Management, Audit et Contrôle des organisations **(ERMACO),**

Laboratoire d'Études et de Recherches en Economie et Gestion **(LEREG),**

Université Ibn Zohr, Agadir, Maroc.

M.bouaziz@uiz.ac.ma

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ABSTRACT

The paper focuses on the possible ways of valuation of biological assets under IAS 41. It also proposes a comparative analysis between FV and HC accounting. Based on the results of several other empirical studies, we find that the standard is hampered by problems of adequacy that counteract its implementation. The paper also shows that the IAS 41 guidelines that require the measurements of the FV instead of HC are not welcome by researchers. Because of this, we believe that the standard should be optimized taking into account the criticism, especially those concerning its cost of the establishment.

KEY WORDS: Fair Value, Historical cost, Valuation, Biological Assets, IAS 41,

RÉSUMÉ

Le papier se concentre sur les méthodes possibles d'évaluation des actifs biologiques selon IAS 41. Il propose également une analyse comparative entre la comptabilisation à la juste valeur et le coût historique. D'après les résultats de plusieurs autres études empiriques, nous constatons que la norme est entravée de problèmes d'adéquation qui vont à l'encontre de son application. Le présent papier montre également que les lignes directrices de l'IAS 41 qui exigent l'évaluation de la juste valeur au lieu du coût historique ne sont pas bien accueillies par les chercheurs. Pour cette raison, nous croyons que la norme devrait être optimisée en tenant compte des critiques, en particulier celles concernant le coût de l'établissement.

MOTS CLES : juste valeur, Coût historique, évaluation, Actifs biologiques, IAS 41

INTRODUCTION

Agricultural activity is at the center of the economy, especially in less developed countries, it accounts for the lion's share in terms of contribution to the formation of GDP and the absorption of unemployment especially in rural areas. However, despite her significant role in the global economy, agricultural accounting has not been a subject of abundant research. The introduction of a standard dedicated to agricultural activity did not emerge until December 2000: IAS 41 "Agriculture" and first applied to annual periods beginning on or after 1st January 2003. Said standard, prescribes the accounting treatment, presentation of financial statements and disclosures concerning agricultural activity. IAS 41 introduces the concept of the valuation of biological assets at fair value instead of historical costs, which quickly leads to an academic debate about the usefulness of such an amendment. According to (Briston, 1978); (Samuels & Oliga, 1982), the common criticism that has been addressed to IAS 41 is that it was designed exclusively for developed countries that satisfy certain conditions a sine qua non for the implementation of the standard (e.g. Active market). The paper is focusing on the proposal of treatment concerning agricultural reporting and our intent concerned the following research question:

- How can the IAS 41 'Agriculture' guidelines be improved to match fair value measurement with the completeness of the field?

To provide answers to our research question we have split our paper into three parts. The first part will be devoted to explore the theoretical framework of IAS 41. The second part is a comparative analysis of fair value accounting (FVA) and historical cost accounting (HCA). The above-mentioned parts of the paper served as the basis for the last one in which the authors discuss the difficulties inherent in the implementation of IAS 41.

1. IAS 41 "AGRICULTURE": THEORETICAL BACKGROUND

Historically, agricultural activity has been one of the key sectors of economies around the world. In the less industrialized countries the common finding is that the growth rate of the economy is strongly associated with that of agricultural production, this can be explained by its considerable contribution to the structuring of GDP, the reduction of poverty, hunger and malnutrition. In addition, agriculture remains the largest provider of jobs, in rural areas three quarters of the labor force derives its income from the food sector (agriculture, forestry and fisheries). Despite the services that agriculture provides, it does not receive enough attention

from academics and practitioners about its accounting standardization. This reluctance towards the agricultural sector is justified, on the one hand, by the typology of companies operating in the sector consisting mainly of SMEs or small-sized family firm, on the other hand, by the absence of the legal obligation to prepare accounting reports and publish financial statements, where appropriate, farmers usually prepare accounts either to answer tax requests or to benefit from subsidies.

With the modernization of the agricultural sector, farmers have started their quest for performance (Luening 1989, Allen 1994), and in the absence of a reliable measurement tool for this assessment, this task has been inconvenient. The countries one after the other has sought to remedy this imperfection, it was necessary for that to build standards likely to fulfill this mission. In Canada we talk about the Canadian Institute of Chartered Accountants (CICA) a non-profit entity that dictates the guidelines necessary for the production of agriculture reporting, the CICA as the American Institute of Certified Public Accountants (AICPA) admit in most of the cases historical cost as an appropriate asset measurement basis. In Europe, farm accounting guidelines are administered by the Farm Accountancy Data Network (FADN) which represents an instrument for evaluating the income of agricultural holdings and the impacts of the Common Agricultural Policy. Yet the Australian experience (AASB 1037 "Self-Generating and Regenerating Assets") remains the most significant initiative addressing the issue of accounting for biological assets.

The setting up of International Accounting Standard (IAS) 41 'Agriculture' comes to give a more global vision to the various initiatives mentioned above with the intention of insuring an insertion on the world scale of the standard for the accounting of biological assets. The introduction of IAS 41 did not emerge until December 2000 and first applied to annual periods beginning on or after 1st January 2003. IAS 41 mainly concerns the agricultural activity delimiting as the management by an entity of the biological transformation and harvest of biological assets for sale or for conversion into agricultural produce *(the harvested product of the entity's biological assets)* or into additional biological assets *(living animal or plant).* This transformation of biological assets comprises the processes of growth, degeneration, production, and procreation that causes qualitative or quantitative changes in a biological asset. According to Viorel Lefter, biological transformation leads to the following results:

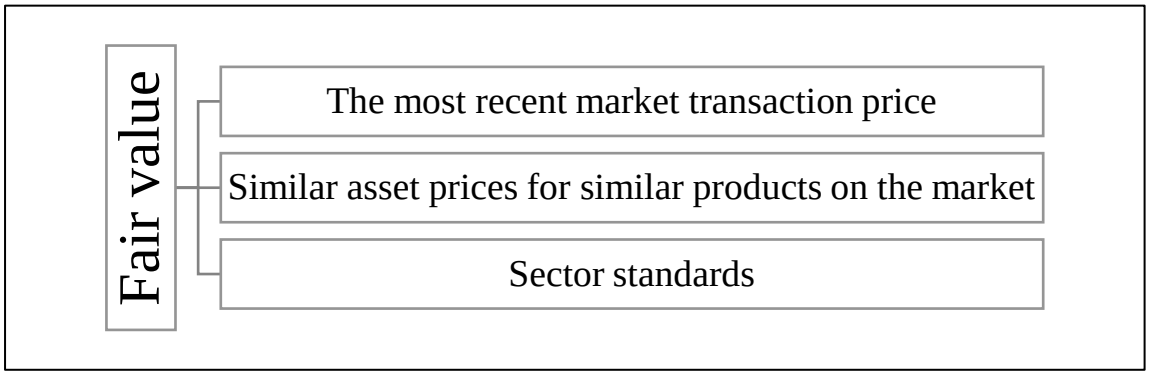
- Modifications of the asset through
  - Growth by increasing the quantity or improving the quality;

- Degeneration by decreasing quantity or deteriorating quality;
- Reproduction by creating additional living animals and plants;

- Obtaining agricultural products such as latex, tea, wool or milk.

The scope of IAS 41 covers biological assets (*except bearer plants*), agricultural produce at the point of the harvest, and conditional or unconditional grants relating to a biological asset measured at its fair value less costs to sell. Nevertheless, the norm does not apply to land and bearer plants related to agricultural activity *(See IAS 16 Property, Plant and Equipment and IAS 40 Investment Property)*, government grants related to bearer plants and intangible assets related to agricultural activity. Under IAS 41 there are two categories of biological assets; bearer biological assets and consumable biological assets. The first category includes self-regenerating assets such as grape vines, fruit trees, livestock from which milk is produced, etc. The second category refers to assets that are ready for the harvest or sold (e.g. forests that have been cut down for timber, or livestock awaiting slaughter). Biological assets can also be divided into short-term (current) assets and fixed assets. In terms of accounting for biological assets, IAS 41 requires these assets to be measured at their fair value less estimated costs to sell from initial recognition and at the end of each reporting period. Such a decision that has aroused the curiosity of researchers and practitioners in the field, and give rise to a debate about the usefulness of switching from valuation to historical costs to a fair (Benhayoun & Marghich, 2018) valuation. Especially the latter supposes the existence of an active market in order to reliably determine the prices of the assets. While this presumption is not always approved (e.g. immature agricultural products or not yet reached the stage of the harvest). This limit makes IAS 41 a standard applicable only in industrialized countries with well-developed stock markets, it was the common criticism that was addressed to the IASC, however, IAS 41 has recommended how to proceed in such circumstances following the instructions below (figure 1):

Fig. 1. Criteria for determining fair value



Source: Greuning et al, 2011: 269, adaptation

2. VALUATION OF BIOLOGICAL ASSETS UNDER FAIR VALUE AND HISTORICAL COST

The use of fair value measurement under IAS 41 has led to a discussion between a welcoming class and another that rejects the idea. (Dvořáková, 2012) justified the arrival of IAS 41 by two essential factors:

- The complexity of capturing the biological transformation of assets under the traditional accounting model, based on the historical cost valuation.
- Seeking to unify agricultural accounting around the world to allow the comparability of financial statements of companies from different countries.

On the contrary, (Amen, 2000) did not consider biological assets different from other types of asset (e.g. machinery) to justify this unique approach (IAS 41 'Agriculture'). And questioned the applicability of IAS 41 given that fair value can only be determined with the existence of an active market, which is not always the case. Overall the authors' positions about keeping the historical cost as the basis of the valuation or adopt IAS 41 establishes on the valuation at fair value are divergent.

(Ball, 2006) criticizes the fair value accounting approach, and rejects the idea that it makes the investment better as long as its utility has not been shown. In the same way, (Rayman, 2007), (Barlev & Haddad, 2003) prove that fair value accounting is unreliable sources of information since it is based on expectations. On top of that (Watts, 2003) claims that information derived from the summary statements prepared using the fair value is liable to more manipulation, and for this reason this method of appreciation remains incomplete by reference to the historical cost. Still, regarding the reliability and objectivity of the information, (Ronen, 2008), Liang and (Wen, 2007) demonstrate that fair value accounting gives rise to manipulation by management in order to influence investors' views on the financial health of the firm. Another point that has been discussed widely for instance, by(Plantin & Sapra, 2008); (Danbolt & Rees, 2008); (Choy, 2006); (Penttinen, et al., 2004) falls on the market which must satisfy certain conditions, otherwise the imperfection of the markets reinforces the chances of appearance of the fluctuations which can have detrimental consequences on the net profits of the farms. In this respect, (Elad, 2004), (Hoffman, et al., 2000) and (Amen, 2000), argue that where there is not an active market for a biological asset, simplicity is not a merit of fair value.

The utility of fair value accounting has been further impoverished following the results of the empirical study conducted by (Argilés, et al., 2012) on farms in Spain using historical costs

and respective fair value in measuring biological assets. The study teaches that no matter the method of evaluation of biological assets used, the future cash flow remains the same. The same study was completed by (Martins, et al., 2012), this time on a sample of 45 Spanish's farms, results indicate that fair value recognition of biological assets is not relevant to investors, however, is more useful than the historical cost in the decision-making processes of agricultural sector agents and in the preparation of financial state. A third survey conducted by (Silva, et al., 2013), concerned 25 Brazilian listed companies for 2008 and 2009 highlights that the valuation of biological assets using fair value instead of historical cost was not relevant for users. Nevertheless, the authors argue that the use of both measurement methods is relevant to the Brazilian capital market.

From a theoretical perspective, the expected work is noticeably rejecting the adoption of fair value as a basis for valuing biological assets. However, other studies have bet for IAS 41 as a tool to unify agricultural accounting around the world. This is the case of the works of (Barth, et al,. 2001) and (Landsman, 2007), which informs that fair value-based information is more relevant than the historical cost-based information. In the same vein, (Gigler, et al., 2007) and (Danbolt & Rees, 2008) have demonstrated that the signs of financial distress are more mastered under a fair value model than a model built on historical costs, consequently, they allow to move to the necessary adjustments to the business to deal with these difficulties at the right time, for them the fair value is always more interesting than the historical cost.

For smallholders operating in the agricultural sector, (Argilés & Slof, 2001) recommend the measurement of their biological assets under the fair value approach, in order to avoid the delicacy of cost calculation. In this respect, unlike the historical cost accounting that is the source of the obscure, fair value accounting allows a more realistic presentation of the company's performance. Moreover, fair value accounting allows to better contain the complications caused by the principal-agent conflict and at the same time improve management efficiency (Barlev & Haddad, 2003).

One last class of academics and practitioners, advocate that the valuation of biological assets must combine both, the historical cost and the fair value according to the specificity of each asset. (Aryanto, 2011) discussed in his research that the fair value measurement proposed by IAS 41 cannot be generalized for all biological assets, given that not all of these assets were designated for capital appreciation or sale, which led to misleading information. In fact, the (Huffman, 2013) study that covered 183 companies from 35 countries that adopted IAS 41 for

the periods 1999-2001 and 2007-2010 gave almost similar findings: Book value and earnings information is more value relevant when consumable biological assets are measured at fair value and bearer biological assets are measured at the historical cost. To summarize the situation, we can borrow the statement of (Damian, et al., 2014) who argued that a single accounting treatment for all biological assets is inappropriate especially a fair value measurement for immature bearer biological assets.

3. ANALYSIS ON IAS 41 "AGRICULTURE":

In order to make IAS 41 "Agriculture" adaptable to all circumstances, several researchers have tried to identify potential failures that may hinder its implementation, first of all, by preventing the norm from being reserved only for developed countries, then to ensure that the valuation of the biological assets is done in the most convenient and reliable way.

Nowadays, agricultural activity no longer depends on the jurisdiction, a firm can be present at the same time on different territory. As a result, it becomes imperative to speak the same language in order to understand each other. So a first vocation that we expect from IAS 41 is to allow users of financial information the same understanding of the information presented, comes after the possibility of comparing financials reports across jurisdiction. In a nutshell, most research results in this regard are articulated around the following characteristics[1]: understandability, relevance, reliability, and comparability. In addition, it must be ensured that the valuation of biological assets under IAS 41 is not done at the expense of optimizing and controlling the costs of the farm. In other words, it is hoped that the presentation of information under IAS 41 will generate a benefit as important as the cost of setting it up. However, it is claimed to reduce the cost of capital and increase the attraction of investments through the realization of the comparability of summaries between countries.

The result recently published by The Institute of Chartered Accountants of Scotland ICAS focuses on the failures of IAS 41, which are an obstacle to its implementation. In addition to the non-attainment of comparability between financial reports, the first observations have clearly shown that in the majority of the experiments, the cost of the valuation at fair value remains higher than the expected profit. Another point is that the measurement at fair value as required by IAS 41 stimulates volatility of earnings, consequently stakeholders deny that the

[1] Yohanes Handoko Aryanto, SE

valuation of biological assets at fair value (or world market price) is a price that reflects their true value.

CONCLUSION

The main idea of the IAS 41 standard – Agriculture is the valuation of biological assets and agricultural produce on a fair value basis. This fair value is equivalent to the free market price, where a decided seller meets, therefore, our paper focused on the importance of the concept of accounting valuations to draw useful information for stakeholders.

IAS 41 attempts to unify agricultural accounting around the world to allow the comparability of financial statements of companies from different countries. However, shifting from historical cost evaluation to assessing the fair value was not convenient for farmers and accountants operating in the agricultural sector when preparing financial statements. To show this, our study first highlighted the advantages and disadvantages of a thorough valuation method based on a variety of surveys conducted in different countries that have adopted IAS 41. We found that researchers and practitioners were divided into 3 classes:

- The first class that welcomes the standard and recommends valuation at fair value given that the historical cost model does not capture the biological transformation of assets, as against, fair value accounting allows a more realistic presentation of the company's performance. Moreover, fair value accounting allows to better contain the complications caused by the principal-agent conflict and at the same time improve management efficiency.
- The second class of authors has much criticized the standard on different shutters, they claim that fair value accounting is unreliable sources of information since it is based on expectations, for this reason it gives rise to manipulation by management in order to influence investors' views on the financial health of the firm. On top of that it reinforces the chances of appearance of the fluctuations which can have detrimental consequences on the net profits of the farms.
- The third class is positioned halfway between the two previous classes, it states that IAS 41 cannot be generalized for all biological assets owing to their diversity (not all of these assets were designated for capital appreciation or sale). This is the reason why they advocate that the valuation of biological assets must combine both modes:

consumable biological assets should be measured at fair value and bearer biological assets at historical costs.

There is no unanimous accord in previous literature with usefulness to switch from a valuation based on historical cost to fair value measurement. The previous experiences of adopting IAS 41 'agriculture', show results that are inconsistent, sometimes positive, confirming the usefulness of the valuation at fair value, sometimes negative, reinforcing the valuation at the historical cost. It is also happening that in some samples the results remain insignificant regardless of the method of evaluation of the biological assets chosen.

The aims of this paper were to explore a stochastic comparison between keeping historical costs as the basis for valuing biological assets, or adopting the fair value required by IAS 41. In order to carry out this task, we have compiled the results of several studies which were the subject of an empirical analysis on samples of firms having adopted IAS 41. The findings show that there are various results in the implementation of IAS 41 in practice and according to its results, IAS 41 has not yet reached the stage of maturity, which calls into question the possibility that one day the standard will allow a standardization of the agricultural accounting practice around the world. There is much scope for further research in this area, and we believe that further academic research should be extended to less developed countries, first to appreciate the effectiveness of the standard in addressing the issues facing the sector, then, IASB should review the IAS 41 in order to address shortcomings that have been raised by previous studies.

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