

## IAS 41 and beyond for a sustainable EU agriculture

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**Abstract.** *Titles on IAS 41 are not very common in the literature and in this sense there is a limited understanding of the standard and the agri-business, especially when connected with accounting and sustainability. Far too many scholars when taking into consideration natural capital, place too much emphasis on abiotic products (wind, solar, etc) which have a different economic behaviour than the biotic ones (biological assets). The topic of IAS 41 is important, as agriculture is one of the strategic sectors for human living and it needs to be accounted for in careful manner. Our article connects accounting with agriculture, sustainability and non-financial reporting for an integrated perspective. There are certain intrinsic challenges that IAS 41 presents, especially when dealing with FVA, but there are also greater needs for materiality in the sustainable agricultural development in the EU legislation. Authors think that there is place for improvement whiten the standards and the future of EU farming should not leave accounting behind, making a call for a more integrated approach and understanding.*

**Keywords:** IAS 41, agri-business, sustainability, non-financial reporting, financial reporting.

### Introduction

A review through the Environment Social Governance (ESG) accounting literature discovered certain issues such as unbalanced understanding between accounting and agriculture practices, little connections made in between IAS 41 and sustainability and also conceptual misapprehensions. First of all, there is a tendency of scholars to use mainstream economics in their analysis, distorting understanding of what can be a breakthrough in the way economist think and act: sustainable economics. Secondly, scholars of ESG accounting borrow heavily from futuristic studies, rather than concentrating on here and now. In connection to this, there is a tendency to connect on externalities and therefore on the liability side of the balance sheet only. When taking into consideration natural capital, too much emphasis is put on abiotic products (wind, solar, etc) which have a different economic behaviour than the biotic ones (biological assets). Last but not least, there are only a small number of articles dealing with IAS 41 and these articles tend to have a general approach, being rather descriptive.

This paper proposes a different approach from the vast majority of articles. First of all, our study deals with agriculture accounting and sustainability. In this sense we propose an accounting prudent approach with symmetrical treatment of the entire balance sheet: assets, liabilities and shareholder equity. Specific agriculture aspects are analysed in consideration to the natural capital, which in our case is represented strictly by biological assets, as they are largely ignored by other studies. An applied understanding on FVA will be presented as far too my scholars use general knowledge and criticism to such an approach, without looking at industry specificities. Legislation on the make of the European Parliament will be taken into consideration such as Establishment of a framework to facilitate sustainable investment proposal for regulation, and also what the EU considers for sustainable agriculture and the future of farming.

Next, the paper is structured as follows: first section frames the argument providing understanding what sustainability is and also presents the EU reports on sustainable agriculture. Section two makes a short presentation of the differences among financial, natural and sustainable capital. Section three describes IAS 41 and the application of the standard, including what is left out, like agricultural land and bearers plants (after 2016). Interaction with other standards and the curious situation of FVA will make the argument. In the end certain IAS 41 related issues and also literature presentation will be presented. The conclusion will consist of a summary of all the arguments.

## **Literature review**

When talking about sustainable goals, literature normally presents the Sustainable Development Goals (SDGs), various agreements on climate change like the Paris Agreement, various conventions and studies by the Club of Rome and Millennium Project. For the time being, there is no “official” term of sustainability put forward by an EU legislation, though strong suggestions are in this sense. Logically sustainability is correlated with long-term investment, transparency, clean economy and low-carbon mobility. There are accurate plans for a sustainable European Union by 2030 which will recalibrate risk as we know it now, but create new challenges, like sustainable jobs for instance, sustainable grow models, etc. (Hoinaru et al., 2019)

In the academic literature Barker (2017) notices that sustainability is a challenged term due to the various context it is applied to. Jones (2010) argues that sustainability is “full of latent contradictions” and therefore it is understood in far too different ways. A common denominator of sustainability in the specialised literature is ‘financially viable’. From an economic term, therefore sustainability is a value chain which is able to regenerate resources and generate profit. This naturally implies a notion of shareholder-sustainable, which is not that obvious, due to the heavy accountability dimension. There is therefore a second nature of sustainability of a non-negative impact on society and even a more intrinsic one on long term investment and stakeholders’ interests which are taken more and more into consideration.

This accountability has a double meaning in a financial reporting sustainable manner: on one hand it means sustainability and accountability to the shareholders, but also of shareholders and managers to the natural capital and also to stakeholders. As Gray (1994) argued, some connections must exist in between financial profit and sustainable profit. This

win-win situation is hard to be achieved, as it may be tendency of certain short term investors to strip companies off their assets, managers to maximise profits, or diminish the financial level of certain assets for some business model reasons, and of stakeholders not to be very attentive. In this article authors views, sustainability is first of a matter of shareholder value. Once the shareholder value is fulfilled and the other stakeholders can emit pretensions and claims on the business. Some of these claims may of course affect shareholder value, like in polluters pay principle, but help generating a systemic stability in the end.

Crane et al., (2012) see a huge gap between financial profit and sustainable profit and Porter and Kramer (2011) argue for different way of thinking, departing from conventional shareholder-value maximisation. Rambaud and Richard, (2015); Mayer, (2016) argue that a different measurement and recognition of liabilities side has to happen, like for instance the environmental impact. ESG may well go in that direction taken into consideration not only present reporting as a snapshot in time but thinking about future disclosures and the future of business. PPP and triple bottom reporting can play its role. Their approach is drawing a signal on the fact that sustainability in terms of accounting is perceived rather out of the financial reporting, and more viewed at most as Integrate reporting, but also more specifically reported under Global Reporting Initiative, or Eurosif, and other alike standards. The backside of the argument has also to be seen, as one cow pollutes over a year equivalent of a car driven from Brussels to Japan. While humans may chose alternative less polluting ways for transportation, cows naturally pollute that much. Accounting for such externalities, is realistic, but it may be too much for our currently limited approach to sustainability and externalities. Accounting still is only the language of business.

The EU legislation on this is currently under negotiation. When connecting sustainability with agriculture the interest is rather limited, mainly taken into account the land use, land use change and forestry (LULUCF), rural development, agricultural research and a more sustainable use of resources. There are quite a large number of files on the future of sustainable farming, on technological solutions for sustainable agriculture. As, one report reads: "Sustainable intensification strategies depend on regional problem-setting and normally apply a combination of measures in several pathways. In order to steer agricultural systems towards SI, agricultural and regional development policy needs to incentivize the uptake of site-adapted strategies." Unfortunately the same report deplores that "the interaction of sustainability and productivity (the so-called 'sustainable productivity') has not been officially adopted by the EU as a policy target." (European Parliament, 2017)

The authors of the present papers thing that "sustainability accounting" is not a solely a matter of abiotic products like solar and wind energy, and sustainable resources like appropriate food for the growth and reproduction of animals, but it is also a matter of profit making and willingness of investors to put their money at risk, and these risks to be accurately described in the accounting papers. Next, the paper looks at specific challenges on natural capital and sustainable capital.

## Methodology

Under the IFRS standards there is more than one type of capital present. Financial capital, for instance, is any money or credit related that it is used to purchase the economic capital. In this sense the financial capital has a role to play in the shareholder's equity side of the balance sheet and it is also a claim to a resource. By making use of money, real capital can be bought;

in agri-business terms, *stricto sensu*, this can mean biological assets and nurture. Also, more complicated instruments like a farm loan and certain derivatives can represent this type of capital. The real capital is more of a resource in itself. Even so both represents “stocks of value” and are fluctuant, they present different liquidity potential.

Natural capital is part of the economic capital and accordingly to the European Environmental Agency is represented by biotic products that naturally exist in ecosystems and abiotic products like solar energy and air for instance. Normally, natural capital has a characteristic of replicating itself, making it by its own nature sustainable. In spite of this fact, it needs maintenance, which make use of financial capital, normally. Academic literature takes into consideration to a large extent only the abiotic products, which from an economic perspective behave like an externality. The biotic natural capital from an agricultural point of view is very similar and can be argued even contained in the financial assets, or behaving like it. Natural assets can be represented by water land, etc while the biological assets can constitute of sub category of animals, plants, etc. For a better understanding of assets division, Caldecott, Howarth, McSharry (2015) produced a table, also colour coding the different type of assets and certain conditions of risks. Physical and natural assets which larger fall under IAS 41 are pictured in red, showing great risks attached to them. Social assets like business and community networks are second in line. Least affected by the envisioned risks are the financial assets and the human assets. Various scenarios of risk can be computed.



**Figure 1. Types of assets**

Source: Coldeott et al., 2015

Non-financial reporting, even though not part of the IFRS, but imposed by Directive 2014/95/EC is of great interest and obligatory and obligatory to preparers. Corporate social responsibility, respect to environmental, social and governance arrangements present and add value to a company. Human capital is considered among the most important asset which is reported under this type of disclosure. Hategan and Imbresu (2017) in their literature review present Kassem (2017) who described a series of financial performance indicators

that take into consideration the up mentioned factors to assess sustainability in agriculture. In this sense some scholars suggests that non-financial assets can be used, or at least perceived in a very financial way. (Hoinaru, 2018) Deak and Karali (2014) look and how environment and environmental news influence the stock price which reflects through the food industry. It can be concluded that “non-financial reporting is an important factor for the companies that have realized that sustainable long term value can be created only if they are involved in CSR activities” especially when dealing with agriculture and food manufacturing industries.

Sustainability of assets and also of equity is of course a challenge in every business. A study by Caldecott et al. (2015) analysed stranded assets and financial risks associated with environment which pose further threats to agricultural supply, food prices , etc.

Table 1: Environment-related risks affecting different agricultural assets

RISK-FACTORS		Physical assets	Natural assets	Human assets	Social assets	Financial assets
Physical	Increased weather variability, physical water scarcity and climate change	●	●	●	●	●
	Land degradation	●	●	●	●	●
	Biodiversity loss and collapse of ecosystem services	●	●	●	●	●
	Overfishing and impacts on marine ecosystems	●	●	●	●	●
	Increased risk of of agricultural diseases, viruses and pests	●	●	●	●	●
	Phosphate availability	●	●	●	●	●
Economic	Economic water scarcity	●	●	●	●	●
	The greening of the agricultural value chain	●	●	●	●	●
	Land use regulations	●	●	●	●	●
	Changing biofuel regulations	●	●	●	●	●
	Regulation and diffusion of biotechnology	●	●	●	●	●
	Greenhouse gas regulation of agriculture	●	●	●	●	●

Source: Caldecott et al. (2015)

Together with the risk factors that they colour coded in a table presenting physical and economic changes, they also presented solutions. Apart from the more classical fines, and increased taxes, among the economic instruments accounting is being acknowledged. For the time being there is not much direct links in between sustainability of capital, financial and natural capital at large, especially in agriculture. The connection is there to some extent, however, integrated reporting has to deepen and cross reference through assets, liabilities and stakeholder equity.

One interesting variable taken into consideration is phosphate. This fertiliser is a limited resource which is an asset by itself. Some studies present phosphate as a strategy resource in the agricultural food grow and food supply, and world phosphate level are still available for 300-400 years. Price may increase over time, and this has a direct economic

impact on farmers who will eventually have to lower their profit margins, or decrease production due to not using phosphate. Seen from this sole and isolated perspective, land is the affected asset and in effect stranded one. However, also governmental labelling of products that used phosphate could limit the financial value of the food produced and in effect of individual farmers who will suffer financially. Caldecott (2016)

## Results and discussions

### *Accountancy under IAS 41*

IAS 41 - Agriculture is an accounting standard which was created in 2000 and was applicable as of 2003. As its title suggests this standard deals with biological assets, agriculture products and their cost of sale. It does not consider any intangible agricultural assets or the agricultural land itself, which are treated under other standards discussed later on. In terms of disclosure there are rules of classifying biological assets accordingly to their belonging group, recognition of an agricultural asset and the potential gains and losses that it produces, recognition of changes in the carrying amount. The standard makes some room for financial risk management strategies and non-financial measurement or estimates “of an entity's activities with each group of biological assets and non-financial measures or estimates of physical quantities of output during the period and assets on hand at the end of the period” [IAS 41.46] Normally the standard suggests FVA and allows explanation on why this was not possible sometimes and the depreciation method used. There are only very limited conditions when HCA can be used, basically in the absence of FVA. Paragraph IAS 41. 12 mentions that assets are measured at FVA, which is considered reliable, minus the estimated cost of sells, in the cases where FVA is applicable, when dealing with biological assets. Expenses are recognized when incurred, which makes sense especially when livestock is purchased. Agriculture end product on the other hand are measured at the point of harvest in the same manner for better reliability. Any gain on the initial recognition is done at the FVA minus the costs and is disclosed in the profit or loss for the time it happens. [IAS 41.28] Worth mentioning is that from para. 43 to 51 voluntary requests of disclosure are mentioned. The standard does not deal with derived products, like the juice deriving from fruits, animal wool utilization or similar products.

When establishing a price three approaches can be used:

1. The market approach. Assets and liabilities are treated under such conditions where there is an observable market for identical products and adjustments are produced to known quotas.
2. The income approach is considered when markets are observable more indirectly and forecast values are estimated.
3. Cost approach it is not common among agricultural products.

Main related standards with IAS 41 are:

- IAS 1 Presentation of Financial Statements showing obviously the disclosed numbers but also the risk of material adjustments. This standard also mentions that a prudent Approaches to be considered when numbers are disclosed;
- IAS 2 Inventories as stocks do exist together with work in progress;
- IFRS 5 Non-current Assets Held for Sale and Discontinued Operations;
- IFRS 13 Fair Value Measurement “to help users of its financial statements understand the valuation techniques and inputs used to develop fair value measurements, and the

effect of measurements that use Level 3 inputs”.

- Integration with IAS 16 Property, Plant and Equipment was more complex and the standards have to be amended in terms and characteristics of the “bearer plant”. Therefore the defining of a bearer plant is that is that that plant used in the production, and it highly unlikely to be sold as an agricultural product, extent certain isolated conditions. As of 2016 the biological assets are treated in IAS 41, apart from bearer plants who fall under the IAS 16, produce growing on bearer plants continues to be accounted for under IAS 41. This happens as bearer biological assets do not go thorough biological transformation and in effect they behave more like equipment or plant. (Damian et al., 2014)
- IAS 38 Intangible Assets has a say on agricultural products, especially on milk and fish quotas. Also trademarks in the case they may exist for certain farms or products are accounted for under the same standard.
- IAS 20 Accounting for Government Grants and Disclosure of Government Assistance deal with any government grants relate to agriculture accounted for under.

Within the literature there is a rhetoric about the FVA use in the IFRS and IAS 41 makes no exception. The FVA market is agriculture is one very particular as prices at a certain point in time may not fully reflect the economic value of the natural capital. (European Commission, 2018) Baptista (2016) argues that FVA methodology under IAS 41 poses challenges as it will not generate comparable results among different markets and also a clear valuation method it is not prescribed. In effect, a “reliability exception” it is mentioned under the standard as trade-offs are possible in between reliability and relevance. He argues that active markets for biological assets do not exist and in this respect future of cash flow estimates have to be used, meaning also applied subjectivity. Also, HCA it is not a good measurement in terms of new cultures of cereals. Sabauri and Kharabadze (2015) situate themselves on the same line but they present a more developed theory. They also propose some solutions and in this respect they designed a databank for better evaluations performed on live weight gain and brood and a transparent methods of assessment. More hands on business aspects of corporal change (growth) of the biological asset and change in the price unit are taken into consideration. Their idea put forward is the “ The Way of Evaluation of Biological Assets and Agricultural Products” where they present an index of nutritional ingredients, metabolic energy index and digestive protein index. They also came up with a weight gain formula that is to be applied by animal category, age groups and also we add by season.

Many scholars argue about the absence of active markets in agriculture and therefore difficulties to measure assets under FVA. Other scholars suggest that there are a multitude of markets and comparisons among them are impossible. To us, it looks like active markets must exists as people have the biological necessities to eat. Also level 3 type of assets might lack in agriculture due to its lack of financial complexity; also in the EU, at least, there is a tendency towards more or less uniform prices. The problem of different markets it is more consistent than it looks like. Problems of comparability exist between the UK and France for instance. Within the common law countries there is a tendency of prepares to made detailed IFRS disclosure, unlike the practice in code law countries. Voluntary or the so called recommended disclosures are playing a key role. Unfortunately in some countries, as Hooks and Staden (2011) argue, “good quality score cannot be obtained with a limited number of sentences”. In this way certain shareholders have access to different information, being more

informed for the decision making process. (Elad and Herbohn, 2011) In countries like Georgia situation seem to be more problematic as there is a lack of connecting legislation to the FVA, leaving the preparer without guidance and generating further issues. This leads to a greater problem of an un-uniform application of a standard that was meant to harmonize information disclosures at international level, (Scott et al., 2016) and in the end impairment of financial statements.

Considering such disclosure practices, in some places both shareholders and stakeholders may suffer, and disagreements in between managers, auditor and investors may appear. Argilés and Slob (2001) analyse the IAS 41 disclosures and conclude that there are not always relevant to the needs of stakeholders which may prove problematic if that stakeholder is the state authority. Problems may appear as cows may be grown for meat or for milk and in this case they would need a different accounting treatment when considering the growing animal, its costs and revenues. Situations vary from season to season, and this is not currently properly addressed in accounting.

Lefter and Roman (2007) identified another problem :“ Even if IAS 41 doesn’t contain an explicit regulation concerning the issue of whether in the transformation process the incomes can be distributed, for the incomes yet unrealized there should exist a regulation that forbids their distribution, because of substance conservation.” Under IAS 41 unlike in other standards there is a recognition of fair value from which the sales costs are taken out, and an changes has to be immediately mentioned in the profit and loss account. This helps the decision making process to a great extent and helps managers.

This idea leads also to some concerns on timing. There are agriculture cycles and accounting has to keep track of unfinished harvesting. Biological assets are measured at the point of harvest, when estimates can be done and FVA may lead to some misleading information. Bozzolan et al. (2016) and paper profit (Sedlaček, 2010) situation more common before the 2016 amendments on the bearer plants. Any gain on the initial recognition is done at the FVA minus the costs and is disclosed in the profit or loss for the time it happens. As costs may occur in one year, they are related to products that are to be mature next year and possible sold over a period of time. Therefore the accounting for one harvest can spread over couple of years leaving room for gaming costs and revenues, adjusting the level of taxes and dividends to be paid out.

## Conclusion

As argued in the beginning of the article, sustainability is a matter of financial viability and IFRS/IAS standards see shareholders are primarily users. Seen from this perspective sustainability is a matter of constant investment. Some argue that standard must equally serve the managers to take sustainable decisions and in the long run make profit for shareholders. A rather new school suggests a broader implication of stakeholders and even of society at large. This is not within the mandate of IFRS who touches only on financial aspects, but Integrated reporting and non-financial reporting can be more attentive to the needs of particular users. In this respect, Agriculture and its biological assets are missing for instance from the standards issued by GRI.

This article started from what we thought of to be a gap in the literature review, connecting sustainability with agriculture and accounting, playing more attention to biotic assets. Scholars had a tendency to concentrate on the abiotic natural capital and this happens



as Ekins et al (2003) argued, because it was perceived more critically important to the sustainability credo. In effect, this paper looked at biotic natural capital as described by the IAS 41 and discovered that there is not a great interest showed in how accounting connects with sustainability and food, apart from some niche studies.

The interplay in between stakeholder sustainability and shareholder-value creation is a matter of perspective and standards used. For the time being it is sure that an integration is to be wanted for a holistic picture. Balancing off all these interest may prove to be hard, as mainstream economics proves its limits in appropriately dealing with natural capital. (Norton, 1995)

To solve some of the existing problems, some authors presented agricultural metrics, in a way similar to the existing carbon metrics, and in the absence of relevant active markets such calculation may prove to be extremely helpful.

The issue of stranded assets have to be more carefully assessed and be given further thoughts. The example provided with land and phosphate might have been counter intuitive in the beginning, but creates a lot of food for thought.

In the end, everybody, meaning the regulators, self-regulators, but also preparers, auditors and fiscal state authorities have to acknowledged and understand that agri-business deals with alive assets, which may well be financial assets, however their behaviour may be at times unpredictable like milk quality and biological growing. Also whether conditions determining certain characteristic of plants, like growth of sugar level are also not controllable. This is natural, because also sustainability is not a rigid one way path only, but carries adaptability characteristics in it for the business, and it is subject to accountants' judgement applied to the market conditions.

A conclusion section is required. Conclusions should provide a synthesis of the main contributions of the paper, discussing the importance of the work, and/or suggest possible applications and extensions of the research. Also, the author should indicate some major limitations of the present research.

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