Financial and Non-Financial Disclosures for Agriculture: is there any Connection in between GRI 13 and IAS 41?

Răzvan HOINARU[1]
Daniel BUDA[2]
Jonel SUBIC[3]
Adela JANSEN[4]

Abstract

This article compares and contrasts two financial and non-financial standards, IAS 41 Agriculture and GRI 13 Agriculture, Aquaculture and Fishing to check if they mirror one another and what are the connections or disconnections between them, whether they are complementary or supplementary to one another, otherwise just unrelated.

This research is conducted on text-based analysis of density of keywords in the professional standards, as well as a check-up on firms' market capitalisation and revenues, alongside with non-financial reporting data.

This argument builds in on the potential association between financial and non-financial demands for companies and how their reported facts impact on society, environment, economic growth and trade-offs. There is a pressure mainly from public institutions for a merger of non-financial and financial data, yet, market reactions and primarily users' needs advance at a difference pace.

The conclusion explains that IAS 41 has its own sustainability in-built information capacity on biological assets maintenance, financial sustainability and even well-being of animals, while GRI 13 is definitely more detailed and dedicated in terms of food security, soil health, waste, animal health, economic inclusion and traceability. Despite some greenwashing techniques when reporting, non-financial reporting has a value enhancing effect and will fulfil its role of broadening and improving on decision usefulness.

Keywords: *IAS 41, GRI 13, ESG, CSR, agri-business*

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[1] Răzvan Hoinaru, Queen Mary University of London, UK, r.hoinaru@qmul.ac.uk
[2] Daniel Buda, Babeş-Bolyai University, Cluj-Napoca, Romania, daniel.buda@fspac.ro
[3] Jonel Subic, Institute of Agricultural Economics, Belgrade, Serbia, jonel_s@iep.bg.ac.rs
[4] Adela Jansen, University of Economic Studies, Bucharest, Romania, adela.jansen@bbs.ase.ro
* Differences between sources exist in data values disclosed.

1. Introduction

Agriculture economic value has been business as usual for decades by now. In terms of environmental impact of agriculture outside its natural polluters, farmers in the EU and UK are rather green due to both practices and legislation in these countries and also a strategy to increase revenues, trading at a premium (The Guardian, 2020). The accounting standards as such do not necessarily impact the supply of food, trade or labour force price, yet, they may have an influence on prices and work in process. Efforts to control prices are an effect of governmental policy, volatility of markets and other economic sectors impacting agriculture economics (Weforum, 2022). Yet, it has to be acknowledged, that sustainability standards as well as financial ones, prescribe registrations and disclosure of assets and liabilities and this information feedback into market and back into firms, having an impact.

The bond in between financial and non-financial reporting is a topic of current research in both academic and professional literature. EFRAG, a semi-private agency, advising the European Commission on IFRS adoption, has been issuing studies on non-financial reporting in the light of new legislation and also assembled a working group on experts to this subject matter. Traditionally, IASB proved to have some resistance, yet, recently, it established an International Sustainability Standards Board which follows IFRS line focusing further on investors' needs (IFRS.org, n.d.). Worth mentioning is every issuer for non-financial reporting standards has its own principles, values and differentiations factors, like for instance, standards for an entire industry or concentrating only on firms as a focal point. Standard setters like Global Reporting Institute (GRI), Sustainability Accounting Standards Board (SASB), International Integrated Reporting Council (IIRC), etc. provide different lenses for understanding and different level of zoom in for risks, context and materiality. The integrated reporting performs a merging function, between financial and non-financial reporting, while other types of corporate reporting are available. In this respect, IFRS is not necessarily a yardstick for decentralised voluntary reporting frameworks, fitting multitude of purposes (ESMA, 2019).

A reference point for all the standard setters in non-financial reporting is represented by the Sustainable Development Goals (SDS) out of which some of them carrying more weight than others for businesses, like SDG 8 Decent Work and Economic growth and 12 on Responsible consumption and production, etc. In addition to the SDR, ESG and CSR are more commonly referenced in regards to non-financial reporting in the accounting and regulation literature. Scholars divide themselves in camps, if these three guides are alternative to one another and compete each other, or if their requirements of one fulfil obligation for all (UNDP, 2023; Sánchez, et al. 2015, Perello-Marin, 2022; Eccles and Krzus, 2010; Governance & Accountability Institute, 2017; Yang et al. 2021).

Further on, this article concentrates on the relationship between GRI 13 Agriculture, Aquaculture and Fishing and IAS 41 Agriculture and how connections in between financial and non-financial reporting can broaden our perspective on sustainability matters in agriculture and financial developments. Firstly, general aspects of agri-business are provided, including top 20 companies in the market.

The second part, is represented by a literature review looking at the IAS 41 and GRI 13 and the broader perspective of connections and disconnections among financial and non-financial standards. Our argument focuses on preparers, users and needs for IAS 41 and GRI 13. Lastly, a sum up conclusion will discuss the two standards, their connections and disconnections, on whether the two standards mirror one another, usage and decision usefulness.

Methodology is not a separated part as such but integrated in the analysis. We started from primarily sources, the two standards: IAS 41 and GRI 13 and searched for similarities and differences between them. To get better insights, software was used to perform keywords analysis frequency. No further coding was used for the critical and analytical arguments. Key words density helped us to grasp a better understanding on the productionist vs. financialised approaches (Haslam et al., 2016) of standards and some descriptive statistics will be computed for top ten companies in agriculture business in terms of revenues and market capitalisation, to complete understanding of their numbers and narratives and therefore provide insights on the connections between non-financial and financial reporting. The data collected in terms of companies, the table below shows listed agriculture companies by market cap:

Table 1. Top 10 firms in agriculture business by market capitalisation

Name	Market cap. In USD Bn	Revenues bn USD
Corteva	45.37	17.45
BASF	44.76	6.8
AGCO	10.77	12.65
Olam	4.75	41,46
Hektaş	4.67	0.3
Escorts Limited	3.27	0.99
Cal-Maine Foods	2.77	2.53
Bachoco	2.73	4.96
Bayer Crop Science	27,80	183.7
Alamo	2.15	1.5
DCD Shiriram	1.62	0.4

**Source*: Companiesmarketcap.com (2023); Statista.com (2023).

Table 2. Top 100 firms in agriculture business by revenues

Name	Revenue USD Bn	Market capitalisation Bn USD
Cargil	114.69	61
ADM	64.34	44
Bayer Crop Science	27,80	183.7
John Deere	37.35	114.9
CNH Industrial	28.1	17.29
Syngenta	23	187.7
DuPont	21.57	32.38
Nutrien	19.6	48.19
Yara International	12.9	21.61
BASF	6.8	44.76

**Source*: Bizvide.com (n.d.); https://companiesmarketcap.com (2023); statistia.com (2023).

Descriptive statistics results are as following: for table 1 top 10 companies in market capitalisation the correlation is 332,6254, while the covariance is 0,32809. In terms of top 10 companies in revenues computations reveal -72,6366 for correlations and -0,03557 for covariance. These numbers reveal aspects that are not surprisingly give the different business models some concentrating on productionist approach while others on financialisation approach. The negative correlation for the top 10 companies in terms of revenues disclose the way they finance themselves and how investors react, not only by financial numbers, while in the first table companies that base their business model on market shares prices the positive outcome is normal as it keeps attaching investors.

Worth mentioning is that because most of the companies from table 1 are US based they do not use IFRS and are bound to US GAAP. Also, due to anti-trust laws in the US some European companies were forced to sell off stocks (CNBC, 2018). The second table presents many different companies especially as European one: UK, Germany, Norway use IFRS. Interesting to notice also is that only one company has enough market capitalisation and enough revenues to be present in both top 10 tables: Bayer Crop Science. For the rest it seems that the business model differs massively from productionist to financialised approach for business as usual and profit. The interplay between their numbers disclosed and narratives presented by non-financial and annual reports will provide more insight on their business models, profit and ESG impact towards the end of the chapter. Next, an academic literature review will be presented.

2. Literature review

The European Law Institute issued its own ELI Guidance on company capital and financial accountability for corporate sustainability (2023) to better understand the sustainability framework in terms of business and law. Their view is to understand sustainability from a financial perspective providing also a working definition of a sustainable company which is described as satisfying shareholders, delivering good products to customers, remunerating stakeholders and contributing to social and environmental wellbeing. The 11, 700 large companies obliged to issue non-financial reporting standards have to inform investors and capital providers on their effects of investing in a company activity, meeting more criterion than profit, constructing a new type of corporate affairs and slow capital with impact materiality, financial materiality and accounting elements. One of their recommendation reads as:

„the corporate group as a whole should provide a prudential guarantee and incur a related liability when resources are transferred between its dependent companies.

This group guarantee and liability may not cover the amount of transferred resources, but also the company's social and environmental obligations, which may become due over time and circumstances.

The group guarantee and liability should be provided at least over the timeframe of related obligations." (ELI guidance, 2022).

The language of non-financial reporting and financial reporting seems to be common, reflecting on capital, types of capital and value creation. There are obviously financial effects of non-financial reporting, aspect increasingly noted by professional and institutional investors. IIRC, for instance, uses the six capitals: Manufactured capital, Natural capital, Social & Relationship capital, Human capital, Intellectual capital, Financial capital (integratedreporting.org, 2023) showing an emphasis on financial aspects, like business models and company performance in short and long run, and filling the gap for information asymmetries for better decision making accordingly to Baboukardos, (2017), Reimsbach et al. (2018), Eccles and Krzus (2010), Wang, (2025), Yang et al. (2021) and others.

Other scholars like Vigneau et al. (2015); Wagner and Seele (2017), Nunez et al. (2018) think that different voluntary reporting frameworks are specifically chosen by companies to fit for purpose. It is considered that GRI has a natural tendency towards CSR, while otherwise different trade-offs are available in between social aspects and environmental protection, other options being available. A literature review survey result reads as that companies which report, despite their own selfish interests in the long run have a tendency to improve on their performance outside financial parameters (Zamlynskyi, 2022). As argued elsewhere, the risk of stranded assets and diminishing shareholder value and increasing taxes are a good enough incentive for change especially for carbon intensive companies (Hoinaru, 2022).

Having regards to the specific standards, within the accounting and policy literature, scholarly work on IAS 41 compared to other IFRS/IASs is less developed, being a niche subject. Academic articles focus on aspects of policy transfers, convergence, and business and macro-economic effects of IFRS on markets and prices, and have a rather prescriptive visions adding to the critical attitudes. Professional studies are not necessarily descriptive, yet, more ontological in nature, presenting factsheets of data analysis, concentrating on is applicable here and now. Also, there is a niche literature review on connections between financial and non-financial standards and how materiality develops, especially due to the creation of EFRAG's (European Financial Reporting Accounting Group) team to enhance connections, both technically and legally (EFRAG, 2023) as a response to the International Sustainability Standards Board of the IFRS Foundation.

For instance, Ignat et al. (2014) observes in regards to IAS 41 that the „objective of this standard is to prescribe the accounting treatment and information presentations regarding agricultural activity" and also with management transformation in agriculture and changes, like deforestation, etc. The standard encourages utilisation of fair value accounting as biological assets (herds, flocks etc) change in value over the year as they grow in body size to better reflect change in biological assets and activity in the market. IAS 41 connection with the active market is more complex as Oyj (2022) argues due to exercised accounting

judgement and interactions with other standards like IFRS 13 Faire Value Management and the hierarchy in between level 1, 2, 3 in assets and liabilities and the possibility of an observable and comparable market and price statistics.

Grassroot examples in evaluating pigs and bovines for instance is by taking breeds and individuals and evaluating costs and benefits, when selling the pig carcass, evaluated from Class S (High quality) to Class P (for processing) with Classes E, U, R, and O in between. For instance, class E means good for cooking with a minimum of 55% lean mean and backfat not measuring more than 12 mm (AgTag, n.d.) When dealing with individual meat part the price is set per different parts, muscle, bacon, fat, etc. apart from the quality of the products, market demand can change prices, also due to alternative usage. For instance, pig fat can be used in products of biodiesel, and hence it can have a certain price when used in the culinary industry and a different one when used in the fabrication of fuel. A similar situation is encountered when porcine biological assets are not sold for butcher purposes, but for resale purposes, prices encountering fluctuations. This aspect related more to market information feed back into the accounts of the firms influencing professional judgement, rather than accountants artificially creating prices out of professional judgement. Of course, the nature of biological assets has to be taken more into consideration, like the capacity of biological assets of multiplying themselves, etc. (Buda et al., 2019). For accounts filed accordingly to IFRS standards in agriculture business see for instance Adecoagro S.A. (2021) and other annual reports.

Commercial risks reflect standard accounting categories: financial, operational, investments and also strategic. There is definitely a fluctuation of prices in the market due to profitability and risks like swine flu, which preparers have to be register accordingly to the market. Other external aspects like the Russian-Ukraine war has an impact on availability, trade and size of markets and waiting time. Disruption the supply chain triggers all sort of uncertainties at all levels and market failures registered in accounts, as operational costs goes up and demand exercises an influence of the price.

Otherwise, GRI 13 Agriculture, Aquaculture and Fishing has a more elaborated title and separates into boxes domains like fishing, which IAS 41 even though addresses the subject manner (evaluations at fair value) it has a more inclusive approach. Despite GRI, in general, getting huge academic coverage for SDG and CSR matters and connections to stock market indexes (Perello-Marin, 2022; McWilliams, Siegel, 2001; Melo and Garrido, 2012, Sánchez, et al. (2015); Wang, (2015), Taylor, J. et al. (2018), Pope and Kim (2022); 2010); Governance & Accountability Institute (2017). GRI 13, in particular, has benefited from little attention within the accounting literature, similarly to IAS 41. This happens as GRI 13 is very specific to agriculture, which is a lucrative business, as opposed to a financialized industry which is more generous in terms of subjects within the economics literature.

As a critical perspective, the economics of agriculture is largely explained by an interplay in between the value of the agricultural product and the value of the

carbon. Currently they there is no trade off or offset in between them and further computations are needed in this respect as well as a closer look of environmental agriculture (Horner, 2020). In terms of environmental effects, world wide, agriculture, as a sector, is responsible for one third of greenhouse gas emissions, which in absolute numbers in 2018 it transformed into 9.3 million tonnes CO_2 equivalent originating from animals, animal waste, enteric fermentation and chemical fertilizers (FAO, 2018; EEA, 2022; IAEA, n.d.).

In the EU greenhouse gases are divided in between non-CO_2 and GHG and are expected to decrease with 2% in by 2030 compared to their 2005 level in accordance with the Paris Agreement stipulations due to reductions schemes like Effort Sharing Decision (ESD) and Effort Sharing regulation (ESR). Targets are set for each EU Member State not only in agriculture, but also in industry, waste and other areas. Different targets are set per Member States and agriculture sectors, and interesting is that some MS reached their target, like Romania's case, being 12% above the minimum requirement overall (Climate.ec.ecuropa.eu, 2021). This flexibility may result in some failures, similar to the EU ETS system, unless mitigation by efforts by other means is performed (Hoinaru, 2022).

As a comparison, the journalistic literature has totally different perspective over the profits and ESG practices of corporations from the agriculture sector. Mass media perspective carries a rather ethical perspective on companies that use hazardous pesticides makes billions of dollars (publiceye.ch, 2019), while other journal articles insist on the poor reputation of some corporations in terms of business practices, farmer community treatment, etc. (washingtonpost.com, (2018); CNBC, (2016); france24.com, 2022).

Next, this article looks at in parallel at IAS 41 and GRI 13 and their requirements for disclosures trying to understands the requirements of the standards as well as grasp a preparers and users' understanding.

3. IAS 41 and GRI 13

As far as now, the literature review discloses contradictory research conclusion on the role and influence of sustainability and non-financial information over the financial information, scholars adhering to camps and school of thoughts. Some scholars do not consider non-financial reporting as standalone pieces of information and providing limited value to investors. Their perspective when researched into depth shows that IFRS standards are mainly for external use for investors as primarily user group, while GRIs provide more of an internal perspective, used by managers and other stakeholders, raising awareness on the impact the company is making for society and environment. Scholars take sides, organising themselves in two camps, those that consider non-financial reporting and sustainability as separate reports, especially as accountants do not have the right skills to prepare them, while others that argue for more integration and holistic view (Dinh et al. 2021). The debate since the `90s (see Kaplan and Norton,

1992) is whether the non-financial reporting can be measured in financial terms in terms of its impact, outside the present legal requirements.

Further on, we shall try to establish more direct connections between the two standards. Software on identifying key world density analyser disclosed the following data:

Standard	World name and frequency	World name and frequency	World name and frequency	World name and frequency	World name and frequency
IAS 41	biological (81);	assets (57);	ias (55);	entity (44);	Fair value (41)
GRI 13	agriculture (430);	topic (382)	organization (375);	fishing (353);	aquaculture (298)

Source: Voyant tools (2023).

There are a few clarifications that need to be made. The GRI standard is more consistent in number of pages, about six times bigger compared to IAS 41 which is only 16 pages long. Hence naturally, words have more space to be repetitive, like the word agriculture which is referenced 430 time in GRI 13 and only 12 times in IAS 41. This huge difference is due to the fact that GRI 13 is more segmented in regards to listing agriculture and fishery separately. Also, IAS 41 has a preference for wording biological and this captures a larger sense of both animal and plants. Two other worlds that capture attention are entity and organization. These are actually synonyms showing that both standards are centred on the reporting entity, yet, there is a matter of nuances, as organisation encounters more sophisticated structure compared to simply mentioning a reporting entity.

We have argued elsewhere, Hoinaru (2018), Buda et al. (2019) that non-financial reporting standards have materiality and even double materiality. Key worlds even though are different have significance for one another. EFRAG has a workplan to identify common aspects in between financial and non-financial reporting as well as grey areas, as well as financial value in ESG. What is important in these two not so clear-cut worlds is where to draw the line and which direction for further developments. IASB management commentary touches on sustainability matters and serve as a loophole for criticism for demanders that ask IASB not to resist non-financial reporting as a matter of development for financial reporting. Also, other sustainability matters can be easily deducted from numbers, when properly analysed in terms of capital maintenance and recognition of debt.

When comparing the two standards it needs to be said that both of them are bound to specific legislation in the European Union. In the IFRS/IAS case there is the IFRS Conceptual Framework (which is not endorsed in the EU) and the Accounting Directive 2013/34/EU 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, while GRI 13 is connected with Directive 2014/95/EU as regards disclosure of non-financial and diversity information by certain large undertakings

and groups. Hence, even though they address the same industry they are bound to very different hard-core legislation, professional standards having a soft role.

Despite this there is a disclosure dynamic with a sustainability and economics components leading to indexes like ESEG and others and wider responsibilities outside profit making. A study performed on Romanian listed companies by Beleneși et. al (2021) concluded that there is a positive correlation between sustainability reporting and investors credibility to put money at risk, leading to new challenges for non-financial reporting constructing appropriate statements of decision usefulness and correlations highlining relevant non-financial information and measurement indicators, reducing asymmetries. Also, some sustainability matters can be deducted from IAS 41 on the agriculture economics of a farm, like food produced vs. number of animals and their portions of nutrients needed.

In terms of non-financial reporting of these top ten companies (market capitalisation and revenues), their reports disclose information on how their business objectives meet the criteria for a better world and how farmers are meant to feed a growing population of the world, while at operational level technological processes help decarbonisation and the business is run in a gender balance fashion (AGCO, 2022). Further on, we shall look at companies from the two tables and their non-financial reporting and check them against Sustainalytics and worldbenchmarkingalliance.org:

Corteva, for instance, has a develop sustainability report and address both ends of the value chain producers and customers, having a stakeholder approach to meet challenges by R&D, addressing climate change pressures and create sustainable solutions. By being a global responsible company Corteva has strategic solution strategical on ESG, resulting from its activities like reducing chemicals in fertilisation, diminishing carbon emission, etc. This company has a clear objective for internal development and external impact, having clear sustainability criteria (Corteva, 2022). Despite their disclosures and plans of nature protective produces and advance technology for agriculture and environment, Sustainalytics considers Corteva a high-risk company in terms of ESG, placing itself on position 403 out of 538 in its industry and 13132 out of 15236 out of the database of the website (Sustainalytics, 2023).

Cargill, to take another example, has an elaborated disclosure as well especially in terms of ESG and how their data responds to every single SDG, posing an entire strategy of sustainability which includes ethical matters as well as general impact to society at large, with a focus on land and water and obviously people (Cargill, 2022). Cargill is absent from Sustainalytics, yet it is present on www.worldbenchmarkingalliance.org where is ranked on position 74/350 with a total score of 32.2/100 with the mentioning that it should improve on deforestation practices and water use, as well as on social inclusion (worldbench markingalliance.org, 2023).

AGCO, presents in the above table is classified as low ESG risk, ranking 22 out of 549 in its industry, classified as Machinery. Its ESG report has disclosed

exact data and metrics on environmental performance like emissions intensity, level of renewables used, topped up by health and safety performance, and social performance in well-developed scoreboards (AGCO, 2022). Similarly, John Deere classifies as low risk in the hierarchy presented by Sustainalytics (2023). Their reports read similarly.

It has to be noticed that though from a general point of view they are all placed in agriculture sector, they cover different segments of it from producing actual food, to chemical fertilisations and machinery. Some cover more of the business chain acting cross-sectionally, producing brands that cannibalise themselves in terms of market, yet, all of them contributing to the growth of the same corporations. In this respect, some companies are handling more difficult their ESG dimension, these rankings posing some further question on how sustainability is judged and also on how non-financial reporting is done.

4. Conclusion

Currently, IAS 41 and GRI 13 seem to address issues of their own, information usefulness in terms of numbers and narrative being rather separate. Different from IAS 41 which structures the financial disclosures on agriculture, GRI 13 is connected at large with data on sustainability reporting. It is arguable if perspectives are complementary or supplementary, as currently there are two separate reports. Some argue that financial and non-financial data are totally separate as preparers and users are different and also that different sets of skills are required. While, IFRS standards have larger circumscription, listed companies in 124 countries, being less contested as a mandatory reporting standard, GRI is one of the non-financial reporting standards available on the market, together with 183 other non-financial reporting voluntary frameworks for reporting (see Barker and Eccles, 2018).

Currently, 11.700 companies have mandatory reporting in the EU under the non-financial reporting regulations. From the two tables presented, companies vary to a large extent in terms of their business models, on whether they are more financialised or more productive, also covering a large variety of agriculture domain, from biological assets trading to production of fertilisers and machinery production. Also, due to voluntary requirements they are free to choose standards outside GRI framework.

GRI and other reporting frameworks have a tendency to disclose firms impact on society and environment. Some reporting frameworks are more integrated with financial disclosures, or require third party's assurance, while others are on a more standalone basis, being more ESG friendly or more CSR friendly. Other sources present other metrics and frame numbers in a more critical way.

We could not establish in this article whether top ten companies in terms of market capitalisation are more ESG or CSR responsible compared to top ten companies in terms of revenues. Market capitalisation comes with some additional

risk of financialisation compared to productionist way of running a business. Website sustainalytics.com could provide some hints on this topic, however, we need to consider that companies are headquartered in different countries like USA, Norway, Turkey, Australia, India, etc, where corporate culture is different. This constitutes of the limits of research and should be addressed further, when more metrics and non-financial information index are available.

IAS 41 intrisingly goes beyond the numbers reported and provides information on sustainability matters like the maintenance of the biological assets, aspects which should be confirmed by non-financial reporting standards, however are not. Sustainability reports of these companies may or may not use GRI and hence can concentrate on different variables. In this respect, financial reports of IAS 41 provide intrinsic sustainable information about agriculture economics and agriculture environmental accounting while non-financial standards, like GRI 13 have its own merits in terms of natural ecosystem conservation, soil health, fishery and aquaculture, climate adaption, food security, etc.

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