

Fair Value Accounting in the Agricultural Sector: An Analysis of Financial Statement Preparers' Perceptions Before and After the Introduction of IAS 41 Agriculture

Abstract

Purpose – The purpose of this study is to consider the impact of the extension of fair value accounting (FVA) to the agricultural sector by (1) identifying the concerns of financial report preparers immediately prior to the introduction of IAS 41 Agriculture in New Zealand, (2) ascertaining the degree to which these are shared by other financial reporting stakeholders, and (3) determining to what degree their views have changed subsequent to the implementation of the standard.

Design/methodology/approach – The research design consists of a two-part investigation, consisting first of a content analysis of the submissions received on Exposure Draft 90 *Agriculture*, followed by analysis of semi-structured interviews of financial report preparers after the introduction of the New Zealand equivalent to IAS 41, NZ IAS 41.

Findings - The study identifies the three main concerns of preparers as being: income recognition; reliability of measurement attributable to the lack of active markets for some biological assets; and the lack of fit between NZ IAS 41 and the traditional accounting framework. These issues were found to be shared with other stakeholders. The degree to which many of the issues identified in the study are perceived as a concern appears to be decreasing over time as fair value measurement becomes more ubiquitous.

Originality/value – Prior studies largely focus on the potential effects of IAS 41. This study extends prior research by considering whether the impact of IAS 41 is as serious as originally expected. The results are useful to standard setters in jurisdictions yet to adopt IAS 41 and informs the debate concerning the general applicability of FVA to entities across all industry groups.

Keywords NZ IAS 41, Fair value, Agriculture

Paper Type Research paper

1. Introduction

Despite the importance of the primary sector to the global economy, accounting for agricultural activities had seldom been a focus of attention for accounting researchers, practitioners and regulators until the approval of International Accounting Standard 41 *Agriculture* (IAS 41) in December 2000 by the International Accounting Standards Council (IASC) (Argilés and Slof, 2001; Herbohn, 2005). IAS 41 marked both a radical departure from the traditional accounting for biological assets and an early test of fair value accounting (FVA). The standard has been controversial, with the IASC facing strong opposition from industry, practitioners, and many national professional accounting bodies (Elad, 2004). While IAS 41 has been acknowledged as providing “a good conceptual framework” (Argilés and Slof, 2001, p. 362), its detractors suggest that the IASC’s project has “portrayed a dubious triumph of theory over pragmatism” (Elad, 2004, p. 638).

The preference for fair-value-based[1] measurement in IAS 41 is consistent with a systematic shift in the dominant measurement paradigm away from the traditional historical cost accounting (HCA) model - a shift being jointly championed by the US Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB). FVA proponents point to the enhanced decision usefulness and transparency of fair value information attributable to its timely reflection of current market conditions (Laux and Leuz, 2009). Opponents, however, believe that FVA comes at the expense of reliability and understandability, referring to the need to sometimes use somewhat arbitrary market based values that rely on subjective means of establishment[2] (Barlev and Haddad, 2003; Penman, 2007; Benston, 2008). Concerns have also been raised about the costs of ascertaining such values, particularly for reporting entities in developing countries (Elad, 2004); the undesirable effects of increased volatility of reported earnings; and the failure of fair value to always capture the true economics of business (Fargher, 2001; Penman, 2007). Further, the extension of FVA to a range of assets, industries and countries has raised concerns about the ability of one measurement system to be all things to all stakeholders, with many of the key requirements being tailored to assets where active market are prevalent (e.g., financial instruments) (Penman, 2007).

In light of these differing viewpoints, the current study examines the extension of the FVA model to accounting for biological assets in New Zealand. The exposure draft preceding the introduction of the New Zealand Equivalent to International Accounting Standards 41 *Agriculture* (NZ IAS 41) was controversial and saw an unprecedented number of submissions to New Zealand’s Financial Reporting Standards Board (FRSB). Of the submissions received, 90 percent were from preparers. Accordingly, the study considers the following research questions:

1. How do the issues raised in comment letters submitted to the FRSB by preparers relate to the four principal qualitative characteristics of financial reporting established by the IASB[3]?
2. What similarity is there between issues raised by preparers and those raised by other constituents?
3. To what degree have the views of preparers changed since the implementation of NZ IAS 41?

To answer these research questions, data is obtained through a content analysis of all submissions received by the FRSB and through a series of subsequent semi-structured interviews.

Prior research has considered the potential impact of IAS 41 prior to its wide scale implementation (Argilés and Slof, 2001; Elad, 2004; Herbohn, 2006; Herbohn and Herbohn, 2006). This study extends the extant literature by directly tapping into the concerns of preparers immediately prior and subsequent to the introduction of IAS 41, allowing an assessment of whether the impact of IAS 41 has been as significant as originally predicted. Not only will the study’s findings be of relevance to standard-setters in jurisdictions yet to implement IAS 41, but they also inform the debate surrounding the suitability of the fair value model for comprehensive application to entities across all industry groups.

The setting of the study, New Zealand, is particularly interesting because of its long history of academic and practitioner debate concerning the use of current values for agricultural assets (Cowan, 1972; Davey and Delahunty, 1983; Glasgow, 1972; Latta, 1981) and because agriculture is one of the

cornerstones of the New Zealand economy, with the primary industries of agriculture, fishing and forestry accounting for 7.11 percent of New Zealand's total gross domestic product (GDP) as at 30 June 2009 (Statistics New Zealand, 2009). Notwithstanding widespread concerns over the appropriateness of FVA for agricultural enterprises, NZ IAS 41 was approved by the Accounting Standards Review Board (ASRB) in November 2004. The standard is an almost verbatim copy of IAS 41 and applies for annual reporting periods on or after 1 January 2007.

The remainder of this study is structured as follows. The next section backgrounds the development of IAS 41, summarises its major accounting requirements, and reviews the prior literature. The research method is explained in Section 3, followed by results and discussion sections. Last, a conclusion section is provided, which summarises the study's findings and acknowledges the study's limitations.

2. Background and Literature Review

Accounting for agriculture prior to IAS 41

The use of the traditional HCA model for agricultural enterprises has long been a source of contention. Opponents argue that it fails to adequately account for the unique reproductive and natural transformational nature of biological assets (Argilés and Slob, 2001) and ignores the realities of rapidly changing market values of farming assets (Cowan, 1972).

In the 1980s, both the American Institute of Certified Public Accountants (AICPA, 1985) and the Canadian Institute of Chartered Accountants (CICA, 1986) developed guidelines on accounting for agricultural producers. Whilst acknowledging the issues with historical cost, both bodies resolved that agricultural producers should generally adopt the lower of cost and market method of valuation for livestock and harvested crops, and only in rare circumstances use net farm prices. In Europe, the French 'Plan Comptable Général Agricole' (PCGA) was introduced in 1986. It dealt with the accounting for certain agricultural assets and strictly adhered to historical cost principles (Argilés and Slob, 2001).

In contrast to the relatively conservative stance of the preceding standard-setters, New Zealand and Australian accounting bodies were unified in their belief that certain agricultural assets (e.g., livestock) should be valued at their net current value (Glasgow, 1972). Underpinning the choice of net current value was a view that it provides more relevant information to the producer, farm adviser, and other relevant users.

New Zealand's approach consisted of the issuance of a number of technical practice aids (TPA) which provided a range of alternative treatments for agricultural assets, including the use of net current values and historical cost. In Australia, the Australian Accounting Standards Board (AASB) 1037 *Self-generating and Regenerating Asset (SGARA)* (AASB, 1998) came into force on 30 June 2001 and was the first comprehensive financial reporting standard issued by a national accounting standard setting body to focus solely on accounting for agriculture. It required non-human living assets held for profit to be measured at net market value, with holding gains or losses taken to the income statement. Generally, the accounting requirements of AASB 1037 mirrored those in the current IAS 41. AASB 1037 attracted fierce criticism both before and after its gazettal (Herbohn and Herbohn, 2006). Concerns included, among other things, the relevance and reliability of fair value measures for agricultural assets, the impact of earnings volatility, and the reporting of unrealised income in the income statement (Herbohn and Herbohn, 2006).

IAS 41 and NZ IAS 41

The introduction of IAS 41 in February 2001 by the IASC marked a landmark in financial reporting for agricultural producers. It was met with strong resistance from both accounting practitioners and most major professional accounting bodies[4]. These parties presented strong arguments against the use of FVA for many biological assets and the taking of unrealised gains and losses to the income statement (Herbohn and Herbohn, 2006). Other commentators claimed there were country-specific issues. For example, Elad (2004) claimed that IAS 41 was not theoretically or practically compatible with

accounting models observable in Francophone countries. The overall conclusion reached by Herbohn and Herbohn (2006) is that the approach taken in IAS 41 is “too academic and not focused on the practicalities of reporting on biological assets” (p. 180).

IAS 41 replaced AASB 1037 in Australia in the guise of AASB 141 *Agriculture*, which came into effect on 1 January 2005. Herbohn and Herbohn’s (2006) analysis suggests that the recognition and reporting requirements of IAS 41 and AASB 1037 are substantially the same. New Zealand’s equivalent to IAS 41 is NZ IAS 41 *Agriculture*. It is virtually a verbatim copy of IAS 41 and was issued in late 2004 following the earlier release of an exposure draft, ED 90 in 2002. ED 90 was based on, and proposed no significant departures from, IAS 41 (NZICA, 2004).

NZ IAS 41 applies to biological assets and agricultural produce at the point of harvest when they relate to agricultural activity (NZICA, 2006). Biological assets are living animals and plants capable of biological transformation, by a process of active management, into either agricultural produce, accounted for as inventory under NZ IAS 2 *Inventory*, or additional biological assets, accounted for under NZ IAS 41 (NZICA, 2006). Typically, NZ IAS 41 applies to the large variety of items contained in the first two columns of Table I, up to the point of harvest, while after harvest NZ IAS 2 is applied, and includes items listed in column 3.

[Take in Table I]

Agricultural and biological assets are subject to the same recognition criteria as other major assets (e.g., property, plant and equipment) but the major difference comes from the requirement to re-measure at balance date, taking any gains or losses to the income statement. In determining fair value, NZ IAS 41 specifies a three-level fair value measurement hierarchy which prioritises observable inputs to valuation techniques over unobservable inputs. In descending order, reporting entities are to use the price in an active market; other indicators of market price (e.g., market prices of similar assets), and the discounted cash flow technique where relevant market determined prices or values are not available (NZICA, 2006, paras. 17-20). Significantly, NZ IAS 41 makes a presumption that fair value can be measured reliably. However, this presumption may be rebutted on initial measurement of a biological asset. In such cases, the asset must be measured at cost less accumulated depreciation and any accumulated impairment losses (NZICA, 2006, para. 30).

Due to the prevalence of small and medium sized farming enterprises in New Zealand, NZ IAS 41 contains differential reporting concessions in accordance with the Framework for Differential Reporting for Entities applying the New Zealand equivalents to International Financial Reporting Standards (IFRS) (NZICA, 2005). Essentially, qualifying entities are not required to comply with the FVA requirements of paragraphs 12 and 13 of NZ IAS 41, allowing qualifying entities to apply HCA, if preferred[5].

Prior Research

Notwithstanding the significance of the primary sector to the New Zealand economy, little if any research has considered the implications of NZ IAS 41. However, in the Australian context, a number of studies have examined the effects of accounting for SGARAs under AASB 1037 on various agricultural industries such as wine and forestry, and the agricultural sector as a whole (e.g., Dowling and Godfrey, 2001; Booth and Walker, 2001; Herbohn, 2006). Similarly, research conducted in Europe has examined the effects of IAS 41 on the economy, individuals and social welfare (e.g., Argilés and Slof 2001; Barlev and Haddad, 2003; Elad, 2004).

The existing literature will now be reviewed from the perspective of the four principal qualitative characteristics which underpin the IASB’s Framework for the Preparation and Presentation of Financial Statements (relevance, reliability, comparability and understandability). These four perspectives will also provide a frame of reference for the study’s subsequent analyses.

Relevance

Accounting information and systems have previously been demonstrated to improve decision making in the farming context (Argilés, 2001; Garcia, Sonka and Mazzacco, 1983; Streeter, 1992). However, the usefulness of accounting data appears limited by the measurement base used in the traditional accounting framework, that of historical cost. Therefore the possibility of replacing the historical cost model for agricultural accounting with one based on current values is not a new issue. In New Zealand, for example, the issues appear to have been vigorously debated in the 1970s and early 1980s (Cowan, 1972; Davey and Delahunty, 1983; Glasgow, 1972; Latta, 1981). In support of the relevance of FVA, Herbohn (2005, p. 14) notes that:

Including unrealised gains or losses in reported profits provides users with more timely information that is relevant to assess their investment and the efforts of management over the period. Further, it can be argued that the volatility that is introduced into income merely reflects the inherent risk of an investment in the agricultural sector.

However, opponents are concerned that there is frequently too much uncertainty regarding the ultimate realisation of many agricultural revenues (Herbohn, 2006). They believe that allowing recognition of estimates in income statements could result in significant adjustments in subsequent periods and may create pressure on entities to declare and pay dividends for which no funds are available (Herbohn, 2005). Herbohn (2006, p. 66) suggests that, this “allows greater opportunities [and motivation] for companies to massage their accounts in any financial year, depending on whether they wish to show higher or lower earnings.” Therefore the scope for earnings management is clearly increased when subjective valuation methods are required to be used.

Reliability

The reliability of financial information resulting from the application of IAS 41 has also been considered by several researchers (Booth and Walker 2001; Elad, 2004; Herbohn, 2006; Herbohn and Herbohn, 2006). The principal concern is when active markets for biological assets do not exist. In such instances, reporting entities may have to estimate fair values by determining the net present values (NPV) of future cash flows, yielding inherently subjective valuations. As Dowling and Godfrey (2001, p. 48) note, “unlike an objective value from an external market, net present value is highly dependent on the discount rate and growth projections used in the calculation”.

The decision to replace HCA with FVA for biological assets in IAS 41 was considered by Argilés and Slof (2001). They conclude that IAS 41 provides “a good conceptual framework” (p. 362) for meeting the information needs of different stakeholders but note some practical difficulties in operationalising the standard. While FVA might be regarded as conceptually superior to HCA, Booth and Walker (2001, p. 59) argued that its application to certain non-severable biological assets, such as grapevines, may result in “false or misleading statements and a reduction in the presentation of relevant financial information”.

Although not regarded as a qualitative characteristic, the IASB’s Framework acknowledges the balance between cost and benefit as a pervasive constraint on the provision of relevant and reliable information. Therefore, some researchers have considered the cost of compliance with IAS 41. Elad (2004, p. 633), for example, argues that the annual revaluation requirements imposed by IAS 41 “might prove onerous and expensive, particularly in less developed countries”.

Comparability

Comparability implies the ability to compare an entity’s financial performance and position through time and across different entities (NZICA, 2007). One of the aims of NZ IAS 41 was to provide a uniform basis of accounting for *all* biological assets (NZICA, 2007). However, as Herbohn (2006, p. 66) points out (in a quote by a forestry plantation manager), “the standard’s failure to adequately address the issue of valuation will result in a variety of valuation methods continuing to be used to value [many biological assets].”

IAS 41 may further impair comparability through the introduction of volatility into the income statement. Herbohn's (2006) empirical analysis indicates a significant increase in the coefficient of variation associated with the reported earnings of sampled companies after the introduction of FVA for biological assets in Australia.

Understandability

The understandability of accounts prepared according to IAS 41 may also be affected in a number of ways. Firstly, as mentioned earlier, shareholders expectations regarding the distribution of unrealised profits, despite the entity not having the cash to distribute (Herbohn, 2006). Secondly, both users and practitioners "are likely to find the rationale behind the 'marking-to-market' approach in IAS 41 more difficult to comprehend or appreciate than the more pragmatic historic cost model" (Elad, 2004, p. 633). Elad (2004, p. 633), quoting a practitioner's response, suggests that the proposal for IAS 41 "whilst well intentioned is far too academic and will not be understood by UK farmers and will be totally incomprehensible to many in developing countries". Thirdly, confusion may be caused by virtue of the prescribed accounting practices in IAS 41 being inconsistent with other accounting standards[6] (Dowling and Godfrey, 2001; Booth and Walker, 2001; Elad, 2007). Herbohn (2006) noted some farmers' concerns at having to value biological assets separately from the land they are attached to. An example provided is that of vineyards where there is never an intention to sell the vines separately from the land.

3. Research method

The study's first two research questions (*How do the issues raised in comment letters submitted to the FRSB by preparers relate to the four principal qualitative characteristics of financial reporting established by the IASB? and What similarity is there between issues raised by preparers and those raised by other constituents?*) are informed through a content analysis of all submissions received by the FRSB in response to ED 90. Submissions were obtained directly from NZICA and were subsequently coded and analysed using procedures employed in previous content analysis studies in accounting (for example, Yen, Hirst, and Hopkins, 2007; Hodges and Mellett, 2002; O'Dwyer, 2002). Whilst the criticisms of the 'vote counting' approach to the analysis of submissions is acknowledged (see Walker and Robinson, 1993), it is regarded as a useful means for classifying issues raised in submissions and for providing the basis for future research (Hodges and Mellett, 2002).

In total, 100 submissions were received by the FRSB – a volume considered large even by international standards[7]. Submissions were received from a range of constituent groups, including biological asset holders (29 percent), accountants in public practice (61 percent), government agencies (6 percent), and academics (4 percent). The relative proportion of submissions by constituent group are consistent with prior studies, which have found that financial statement preparers and public accounting firms generally produce the most absolute number of comment letters, while users and academics are responsible for the fewest submissions (Yen et al., 2007; Tandy and Wilburn, 1992).

The accounting standard setting process is a political lobbying process in which parties to the process may attempt to directly or indirectly influence outcomes of the process (Georgiou, 2004). Evidence was found of direct and indirect lobbying methods being employed by preparers (accountants and biological asset holders). In addition to submitting their own comment letters, preparers were seen to lobby using indirect methods, such as via submissions by allied special interest groups; having several employees/partners of the same firm submit comment letters, and through the publication of opinion pieces in NZICA's Chartered Accountants Journal (see Perry, 2007 and 2008). No instances were found of common phraseology in comment letters, which might have been indicative of further lobbying activity.

In order to address the last of the study's research questions (*To what degree have the views of preparers changed since the implementation of NZ IAS 41?*) semi-structured interviews were conducted of a sample of 11 randomly selected preparers and, for contrast purposes, one academic with specialist knowledge of agricultural accounting. In general, the views of the academic were found to be consistent with those of preparers. All of the preparers were qualified accountants working directly in the agricultural industry or in public practice as specialised farm accountants, while all 12 interviewees had specialised agricultural accounting experience ranging from six months to 38 years (mean = 16.1 years, standard deviation = 10.0 years), with 75 percent having more than 15 years experience.

Interviews were conducted over the second half of 2008 and in early 2009. Prior to each interview, interviewees were emailed a copy of NZ IAS 41. Ten of the 12 interviews were conducted in person while two were conducted over the telephone, due to the interviewees' location. An interview guide was followed for each interview which provided a list of topic areas to be covered and included a number of alternative questions which could be posed should an interviewee take a certain position which required further exploration (see Appendix A for example). All interviews were recorded and later transcribed. To ensure confidentiality is maintained, interviewees are referred to by code (IV 1 to IV 12) rather than by name or position in the next section.

4. Results and discussion

This section firstly summarises the results of the content analysis of submissions on ED 90 in tabular form. These results are then followed by a more indepth analysis of the arguments raised by preparers, using the qualitative characteristics of financial reporting as an organising framework. Incorporating the results of semi-structured interviews, this analysis also considers the extent to which preparers' views have changed since the implementation of NZ IAS 41. The similarities between the views of preparers in relation to those of other constituents are also noted.

As detailed in Table II below, the content analysis of submissions to ED 90 uncovered several areas of concern for a range of constituents, with the top five issues relating to the recognition of changes in the underlying value of biological assets in the income statement (61 percent); the proposed standard's fit (or lack of) with the traditional accounting framework (56 percent); the existence (or lack) of active markets for biological assets (55 percent); the requirement for revaluation at balance date (43 percent) and the increase in special purpose reports (40 percent). Perhaps with the exception of "disclosure requirements" (24 percent in favour) and "classification of biological assets" (16 percent in favour), relatively few issues were strongly supported.

[Take in Table II]

Table III provides further details on the percentage of respondents raising concerns about issues presented in ED 90, by constituent group.

[Take in Table III]

Table IV collapses the constituents into two groups. The first of these new groups, preparers, consists of accountants and biological asset holders, while the second (non-preparers) consists of responses by government agencies and academics. As revealed in Table IV, there are relatively few material differences between the views of these two constituent groups. Statistically significant differences are only seen to arise on two issues (point of sale costs and special purpose financial reporting) between the two groups.

[Take in Table IV]

We now discuss the results of the preceding tables in more detail, incorporating the results of the semi-structured interviews.

Relevance

The most frequently mentioned concern in preparers' letters on ED 90 (61 percent) related to the requirement to recognise changes in the underlying value of biological assets in the income statement. It was believed that such treatment may render the financial statements irrelevant for many user groups. This view was shared with other constituent groups (60 percent), indicating a common area of concern for preparers, government bodies and academics.

Arguments against this treatment focused on the fact that unrealised gains and losses may not be realised on a timely basis. For example, forestry respondents believed that financial statements risked being made irrelevant, as changes in the underlying value of growing forests may dwarf in scale the actual trading result of a company, particularly for forests not yet at a sustainable yield. Respondents argued that this could lead users to believe that movements in the valuation of immature forests, for example, represent real fluctuations in recognised trading income. This may lead to unrealistic expectations of distributable profits and create pressure on entities to declare and pay dividends for which no funds are available.

Vineyards also reflected this concern (e.g., Montana Wines Ltd; Villa Maria Estates) further believing the issue would be exacerbated by the volatile and cyclical nature of the wine industry. Similarly, Federated Farmers of New Zealand felt that the agricultural industry already faced significant variability due to a number of externalities, including vagaries of the climate, adverse weather, and market forces. An alternative suggested by several respondents was to include the use of reserve accounting to recognise changes in asset values.

NZ IAS 41's treatment of changes in asset values continues to be a key issue with 91 percent of preparer interviewees noting that the standard brings to account unrealised gains and losses that may not be realised on a timely basis, if at all. However, in contrast, three interviewees were quick to highlight that the volatile nature of the agricultural industry could be communicated more effectively in this manner. Those in favour of this treatment believed, "from an economic point of view, it is correct" and therefore the information is more relevant. Although, one interviewee from this group did point out the unusual inconsistencies with standards such as NZ IAS 16 *Property, Plant and Equipment*, where upward changes go to equity. "They are treating agriculture like the finance industry [referring to the required treatment under NZ IAS 39 *Financial Instruments*]. How is a fruit tree any different to an item of plant?"

Reliability

There is a presumption in ED 90 that fair values can be measured reliably, however HCA is available where that presumption can be rebutted. This notwithstanding, 57 percent of preparer respondents to ED 90 considered the reliability of the measurement of fair value to be an issue; a view consistently shared with other constituents (40 percent). One preparer felt that the different valuation methods available make the establishment of fair values possible but the level of objectivity in the valuation process decreases the further you move away from active market measurements. Not surprisingly, the strongest negative sentiment originated from those with backgrounds in cropping (100 percent), orchards (83 percent), vineyards (80 percent), and forestry (78 percent) where active markets only reliably exist at the date of harvest (see Table III). KPMG's submission noted that:

The definition of biological assets covers a diverse range of sectors, breeds, classes and varieties of assets. Fair values of biological assets vary not only between breeds, classes and varieties, but also between relatively small geographical locations.

In some cases, fair values are specific to the particular circumstances of the assets held (such as the condition of livestock, hardness of timber, sugar content of grapes, etc.) and therefore cannot easily be reliably valued by reference to an active market. Ernst and Young's submission claimed that readily available fair values are more likely to be present only for those assets that result from further processing (e.g., beef) than in cases of biological transformation. To them it seemed incongruous that

fair value measurements should be used in situations where historical cost is more reliable, as demonstrated by the requirements of NZ IAS 2[9]. Interestingly, most respondents failed to acknowledge the option to use historical cost where fair values cannot be reliably measured.

With regard to biological assets with long-term production cycles and thin markets, respondents believed that valuation and subsequent financial reporting will be dominated by the use of more subjective valuation techniques. In light of this, 16 percent of preparers and 30 percent of other constituents specifically commented on the issues associated with using a variety of valuation methods. Of those respondents over half acknowledged the potential for the standard to be applied in such a way as to enable parties to manipulate earnings to suit their own accounting or business position. Furthermore, many preparers and other constituents believed professional valuations were notoriously inconsistent. AgResearch (a government agency) noted, that the variety of valuation methods available and valuation specialists “will lead to distortions, as every reasonable effort is made to achieve required results in a market that is as subjective as the second hand car market.”

The general sentiments of the submissions to ED 90 resonated with the subsequent interviews of preparers, with 82 percent raising the nature of the methods required to establish fair values as a key area of concern. IV 11 felt that managers are now required to rely on somewhat more arbitrary methods to establish asset values, which do not always reflect the true value of the underlying assets. This view was supported by IV 3, IV 4 and IV 5 who felt that there are too many unknowns when undertaking valuations of agricultural assets, which too often can lead to incorrect or irrelevant measures being established. One interviewee noted that “the way would be open for inexperienced or easily manipulated valuers to bring uncertainty to the agricultural industry and scorn the accounting industry.” Interestingly, only one interviewee acknowledged the option to use historical cost in circumstances where the presumption of reliable measurement can be rebutted. This application of NZ IAS 41 has meant that, for many industries, the only feasible measurements for fair value are those based on discounted cash flow techniques. This has raised issues for those operating in the horticulture industry where they are required to value the vines and trees separately from the land. As IV 2 states, “the fair value methodology is fine, however, it is the application in the real world which becomes difficult.”

However, in somewhat of a contrast to the original submissions to ED 90, 64 percent of interviewees believed that a variety of valuation methods may actually be beneficial overall, given that NZ IAS 41 applies to a diverse range of agricultural assets. As IV 3 explains, “this is particularly appropriate considering instances where produce is only half grown or half finished at balance date.” However, this view was tempered by some interviewees who noted the consequential increase in potential for earnings management. For example, IV 3 was concerned that specific industries such as the burgeoning dairy industry may take advantage of different valuation techniques, as dairy equity partnerships are pressured to show a particular return to investors.

Comparability

The comparability of agricultural accounts prepared under ED 90 (both inter and intra firm) was only perceived an issue by relatively few preparers (16 percent) and a moderate number of government and academic respondents (30 percent). Similar to the issues raised for reliability, respondents identified the variety of valuation methods and the consequence of applying discounted cash flow based valuation techniques as key issues. The latter issue was highlighted in a New Zealand Institute of Forestry (1999) study of 15 forestry firms, which revealed nine different discount rates (ranging from eight to 11.5 percent) being used to establish the NPV of forests, thus making comparability between companies difficult. Several preparers commented on the use of the Heard Scheme (HS) or National Standard Cost (NSC) values, noting that while not perfect, at the very least they are relatively consistent across all reporters.

With respect to the preparer interviewees, only 36 percent identified comparability as a concern, focused mainly on the resulting implications of certain assets having no or limited active markets (e.g., vineyards, orchards and immature forestry). While they acknowledged the use of discounted cash flow techniques to help resolve this issue, their concerns focused on the possible difference in resulting

values caused through valuers applying different assumptions. IV 12 believed that this may lead to materially different values both across firms and across time making comparability almost impossible, irrespective of how consistently NZ IAS 41 is applied.

Another interviewee (IV 11) argued that even if market prices existed for biological assets, considering the diverse range of sectors, breeds, classes and varieties of assets that fall within the scope of NZ IAS 41 valuations are never going to be fully reflective of the true values applicable across all firms. IV 12 also commented on the current tax system for valuation, noting it as “crude but consistent”. They felt that “given the trade-off of relevance for reliability I cannot see how fair value at any cost can be better than comparability.”

Also IV 6 felt that comparability across firms was always a problem due to the range of different measurement systems applied to other non-biological assets. These differences impair the users’ abilities to compare agricultural firms with non-agricultural firms, let alone comparing agricultural firms with similar attributes. In this vain, they felt that NZ IAS 41 is really no different to other “inconsistent” standards. IV 10 was concerned that this could have an impact on the allocation of capital funding as the current expansion programmes in the agriculture industry is changing the ownership patterns, moving more towards a corporate approach where entities are listed and have a variety of owners.

Fifty six percent of preparers and 60 percent of the other constituents were concerned that ED 90 did not fit with the traditional accounting framework. Over half of the preparers (52 percent) believed that the proposed standard would not address the true information needs of users in the agricultural industry. From a conceptual perspective 82 percent of respondents who provided comment on this issue believed the standard would only serve to reduce the comparability and/or understandability of financial statements to users. In particular, a number of preparers and two academics were perplexed as to why biological assets should be valued completely differently to other traditional assets. For example, the land used and structures built to actively manage biological assets are measured at cost or revalued regularly, in accordance with NZ IAS 16 (para. 30-31). Any harvested produce is measured at the lower of cost and net realisable value (NZ IAS 2). One respondent stated, “either the statements are to be prepared applying the principles of historical cost or fair value, not some bizarre concoction of both.”

Eighty two percent of interviewees were concerned that NZ IAS 41 had not “improved” comparability across firms. IV 12 felt that most agricultural firms had more comparable data prior to NZ IAS 41 as they prepared accounts that were useful to all users, not just “one or two external to the organisation”. With respect to the consistent application of NZ IAS 41, IV 10 conceded that the differential reporting exemptions available might in fact exacerbate the problem of limited comparability between agricultural firms.

Understandability

Regarding the overall understandability of agricultural accounts, a small number of respondents alluded to the ‘academic’ nature of FVA and the adverse impact they believed it has on understandability. Based on the interviews, preparers’ views appeared to have been moderated since the implementation of NZ IAS 41. However, some were still clearly concerned about the adverse impact that the complexity of NZ IAS 41’s requirements has on users’ understandability. These preparers also tended to be concerned with the impact of complexity on compliance costs as the following quote from IV 1 indicates:

On the whole, difficulty has increased, however we have attempted to mitigate the effects of the standard by structuring clients’ businesses in a way as to reduce compliance costs and avoid the application of the standard. We are not purists.

This determined attitude to avoid the application of NZ IAS 41 was observed in a number of interviewees (36 percent). Four interviewees believed that users may not understand the level of

subjectivity associated with the valuation of certain biological assets and therefore may not necessarily understand the impact on financial statements.

The issue which appeared to most polarise respondents to ED 90 was that of disclosure (24 percent against and 24 percent in favour). Those against reflected on the already onerous disclosure requirements of financial reporting being added to by ED 90. One respondent commented that there is such a thing as too much disclosure, highlighting that, “fluctuations caused by drought, floods, frosts and hail storms can dramatically change a prosperous farm into a ‘bad risk’ for a bank.” On the other hand, respondents in favour of the disclosure requirements believed they would increase both understanding and consistency issues which increases the overall usefulness of financial statements to users. However less support was observed from the interviewees who believed that additional disclosures simply placed a greater burden on preparers and those that read and interpret them.

Other issues

An important issue, identified in the IASB’s *Framework*, is the need for financial report preparers to consider the trade-off between the costs associated with providing financial information and perceived benefits gained by different user groups (IASB, 2001). The analysis shows that 43 percent of submittants believed that the requirement for revaluation of biological assets at each reporting date was a concern, making it the fifth most contentious issues [10]. Negative sentiment was based largely on the increased compliance costs that those required to comply with ED 90 would face and the possible complexity created through the differing valuation techniques noted. The Carter Holt Harvey submission believed the revaluation of biological assets at each reporting date was “a matter of balancing the utility of the valuation, and the time and costs involved in undertaking a thorough valuation.” Interviewees still perceive this as a concern with 45 percent admitting that it has changed the way they look at applying differential or special purpose reporting requirements.

5. Discussion

Consistent with Herbohn’s (2006) findings in Australia, preparers both before and after the implementation of NZ IAS 41 identified the treatment of changes in biological asset values (recognised in the income statement) as a contentious issue. This concern was of equal importance to non-preparers who had submitted comments on ED 90. Preparers appeared concerned that the recognition of unrealised gains and losses may result in less relevant financial statements, as users may not fully appreciate the issues surrounding their calculation and presentation. The very nature of certain biological and agricultural assets makes income recognition based on changes in fair value problematic (Walker, 2001; Elad, 2007). It was no surprise, then, to find preparers in the forestry and viticulture industries being particularly vocal in their dissent, mainly due to the length of production cycles and cyclical nature of their respective industries.

Some evidence emerged of a shift in views amongst preparers since the implementation of NZ IAS 41, perhaps reflecting a greater acceptance of FVA generally. Post implementation interviews indicated that 27 percent of preparers believed that the prescribed revenue recognition treatment better reflected the volatile nature of the agriculture industry, providing users with a more realistic view of the income and profitability.

Accounting issues associated with the lack of existence of active markets for many biological assets (such as, immature forests, vines, fruit trees and some marine life) were the second most frequently raised concern by preparers prior to the implementation of NZ IAS41. Evidence suggests that these reservations have persisted among preparers subsequent to the implementation of the standard and are shared by other non-preparer constituents. Based on NZ IAS 41’s fair value hierarchy, a lack of active market generally necessitates the use of discounted cash flow techniques. This, in turn, was a further cause for concern amongst preparers (both pre and post NZ IAS 41). A large proportion of preparers questioned the reliability of the resulting valuations, which are generally based on a myriad of assumptions (e.g., discount rates, expected number of future cash flows, future harvest prices, and predicted maturity rates). Notwithstanding these concerns, preparers generally failed to acknowledge

the existence of paragraph 30 of NZ IAS 41, which allows reporting entities to use historical cost when the presumption of reliable fair value measurement can be rebutted.

In order to determine the likely extent to which New Zealand reporting entities rebut the presumption of reliable fair value measurement under NZ IAS 41, the researchers undertook a content analysis of the currently available 2009 annual reports of agricultural companies listed on the markets of the NZX stock exchange. Although not reported elsewhere in the study, the analysis revealed that (large) New Zealand companies tend to use discounted cash flow-based measures of fair value in situations where there is an absence of active markets, rather than opting for measurement using historical costs. These findings provide an opportunity for future research to consider why preparers who perceive fair value measures as unreliable, still opt to use FVA, in circumstances where there is no requirement to do so.

Both preparers and other constituents were initially divided on the support for the extensive disclosures requirements of ED 90. Subsequent to the implementation of NZ IAS 41, however, preparers appeared to be more accepting of these provisions. Interestingly, of those preparers who raised reliability issues associated with FVA, few if any alluded to the potential role of disclosure in ameliorating their concerns.

The lack of fit between the accounting treatment of biological assets prescribed by ED 90 and NZ IAS 41 and the traditional accounting model appeared to be a persistent issue for preparers and non-preparers. In particular, concern was expressed at perceived anomalies between the accounting treatment for agricultural assets and other tangible assets - an issue identified by other researchers (e.g. Dowling and Godfrey, 2001; Booth and Walker, 2001; Elad, 2007).

The wide range of valuation methods, the lack of active markets, the diverse range of sectors, breeds, types and classes of assets, and the variability in reported earnings resulting from FVA, have all been identified as potential impediments to comparability in accounting for agriculture (Argilés and Slof, 2001; Herbohn, 2006). In New Zealand, these issues are further compounded by differential reporting options available to certain reporting entities. This issue was identified as problematic for preparers and non-preparers alike prior to NZ IAS 41's introduction, and appeared to remain a concern for preparers subsequently.

The understandability of accounts prepared under FVA was revealed to be a significant issue for preparers responding to ED 90. The reporting of unrealised income, volatility of reported earnings, and complexities associated with FVA were all identified as contributing factors and are consistent with the concerns noted in prior literature (Benston, 2008; Herbohn, 2006; Herbohn and Herbohn, 2006; Penman, 2007). Although still an issue subsequent to NZ IAS 41, the issues appeared somewhat less salient to preparers, perhaps reflecting a perception of increased awareness of FVA issues among users of financial statements.

6. Conclusion

This study is the first to consider the impact of NZ IAS 41 *Agriculture* in New Zealand. NZ IAS 41 is a near verbatim copy of IAS 41 and extends the application of FVA to the agricultural sector. The study sought to address three research questions: (1) How do the issues raised in submissions on ED 90 *Agriculture* by preparers relate to the four principal qualitative characteristics of financial reporting established by the IASB?, (2) What similarity is there between issues raised by preparers and those raised by other constituents?, and (3) To what degree have the views of preparers changed since the implementation of NZ IAS 41?

Based on a content analysis of the exposure draft preceding the introduction of NZ IAS 41, the following three issues were identified as being the most salient for preparers: recognition of changes in the fair value of biological assets in the income statement, lack of active markets from which fair value could be determined, the fit between NZ IAS 41 and the traditional accounting framework. In addition to these issues, preparers were also concerned that the qualitative characteristics of comparability and

understandability could be adversely impacted by the extension of FVA to biological assets. A comparison of preparer views with those of non-preparers revealed general agreement between these two parties to the financial reporting process. However, subsequent semi-structured interviews with preparers after the implementation of NZ IAS 41 indicated a softening of opinion in favour of FVA. This was particularly evident in relation to the recognition of changes in fair value in the income statement and in relation to the understandability of accounts prepared under FVA.

The preparers' concerns about the reliability of fair values must be tempered by the fact that few acknowledged the option in NZ IAS 41 to use HCA when the presumption of reliable measurement of fair values can be rebutted. Further, few preparers acknowledged the role of disclosure in potentially ameliorating concerns about the reliability of fair value information. Interestingly, a content analysis of the accounts of listed New Zealand companies operating in the agricultural sector revealed that, of those which reported having biological assets for which there was no active market, none opted to use HCA. This suggests that, for large listed companies at least, the reliability of fair value measures does not appear to be an issue.

The limitations of the study ought to be considered in interpreting the study's findings. Content analysis is a purely descriptive method, describing only what is there. As a result, the underlying motives behind observed relationships may not be revealed. As the focus of the analysis was on submissions received, the views of those who did not submit were largely ignored, thus limiting the extent to which generalisations may be drawn. However, as Hodges and Mellett (2002, p. 149) note, "it will never be possible to identify and weight all of the forces acting in a political process and so it is not possible to meet all of the standards of investigation set by Walker and Robinson."

Finally, since the study predominantly focuses on the perceptions of one major stakeholder in the financial reporting process, financial report preparers, and an opportunity arises for future research to consider the views of other relevant stakeholders, such as auditors, farm consultants, bankers, and the relevant taxation authority. Such an extension would complement the results of the current study and permit a much broader understanding of the implications and perceptions of various user groups in relation to IAS 41.

Notes

1. Fair value is defined as “the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm’s length transaction.” (IAS 41, para. 8)
2. Unless an active market exists, fair value must be established using valuation techniques which require significant assumptions to be made on behalf of the valuer. In the context of IAS 41, an active market is defined as “a market where all of the following conditions exist: (a) the items traded within the market are homogeneous; (b) willing buyers and sellers can normally be found at any time; and (c) prices are available to the public.” (IAS 41, para. 8)
3. The attributes that make the information presented in financial statement useful to users include that of relevance, reliability, understandable and comparable (IASB, 2001).
4. The UK, USA, Australia and Canada (IASB, 1998, 2000, 2001).
5. At the time of writing, the New Zealand financial reporting framework applicable for small and medium-sized entities is under review. One possibility being mooted is the adoption of *IFRS for Small to Medium-Sized Entities* (IASB, 2009) for such entities. This standard requires the use of the fair value model for those biological assets for which fair value is readily determinable without undue cost or effort. The cost model is to be used for all other biological assets.
6. E.G.; NZ IAS 16 *Property, Plant and Equipment* requires increases in the value of underlying assets to be recognised in equity, while decreases in the value of underlying assets are recognised in the income statement.
7. Using data reported in Tandy and Wilburn’s (1992) study, Yen et al. (2007) estimate that the average number of comment letters received in relation to 97 US Financial Accounting Standards Board statements was approximately 138.
8. The proportion of respondents that constitute a ‘significant body’ is clearly subjective. For the purposes of this study a threshold of thirty percent is employed.
9. NZ IAS 2, paragraph 9 requires that inventories be measured at the lower of cost or net realisable value.
10. This is a significant result given that only one respondent indicated that it was not an issue of concern. All other respondents did not comment.

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Appendices

Appendix A: Semi-structured interview guide format

Broad questions:

- What is your name and position?
- How many years have you been a qualified Chartered Accountant?
- Does the broad area of agricultural accounting interest you?
- How many years of professional experience do you have in performing accounting activities for agricultural entities?

Specific questions:

Relevance based questions:

- What are your thoughts on the usefulness of accounting information for agricultural clients?
- Do you find that clients, who are not required to furnish financial statements, still approach your firm asking for this service? What do you consider their motivations are for doing this?
- The limited applicability of the traditional accounting framework has often been stated for the delay in deliverance of an accounting standard dealing with agricultural activities. How would you respond to this comment? *Confrontational question*

Reliability based questions:

- What are your thoughts on the prevalence of active markets for agricultural assets?
- What are your thoughts on the high volatility commonly recognised in the statement of agricultural firms?
- How would you respond to comments that accounting estimates of agricultural assets obtained in applying NZ IAS 41 do (do not) reliably reflect the values of underlying assets? *Confrontational question*
- What are your thoughts regarding the comment that, the variety of methods used to determine fair values for agricultural assets reflects the diversity of agricultural assets?
- Does the lack (instance) of variety, decrease (increase) the opportunity for biases to be representative in agricultural accounting estimates? *Confrontational question*

Comparability based questions:

- Explain why or why not, comparisons between different agricultural firms are able to be made with confidence?
- How would you respond to comments that the NZ IAS 41 is (is not) consistently applied across agricultural firms? *Confrontational question*

Understandability based questions:

- Are you spending more time complying with NZ IAS 41, compared to prior to the introduction of an accounting standard that deals primarily with agriculture?
- What actions required by NZ IAS 41 do you see as beneficial to the client, and what actions required by NZ IAS 41 do you see as not beneficial?
- How would you respond to comments that the operation of NZ IAS 41 increases (decreases) simplicity? *Confrontational question*

Overall questions:

- Are there any other aspects of NZ IAS 41 that you feel are important that have not been mentioned today?
- In light of what we have spoken about today, do you support an accounting standard for agriculture, why, why not?
- Are there any future directions you would like to see the accounting Standard head toward?

Tables

Table I: Classification of assets under NZ IAS 41 (NZICA, 2006, para. 4)

Biological assets ¹	Agricultural produce ²	Products that are the result of processing after harvest ³
Sheep	Wool	Yarn, carpet
Trees in a plantation forest	Logs	Lumber
Plants	Cotton, harvested cane	Thread, clothing, sugar
Dairy cattle	Milk	Cheese
Pigs	Carcass	Sausages, cured hams
Bushes	Leaf	Tea, cured tobacco
Vines	Grapes	Wine
Fruit trees	Picked fruit	Processed fruit

¹Any produce not harvested is considered part of the biological asset and should not be accounted for separately, e.g. grapes on a vine should be accounted for as part of the vine up until the point of harvest.

²Agricultural produce is generally considered Inventory under NZ IAS 2.

³The processing of agricultural produce after harvest is excluded from NZ IAS 41, and falls outside of the scope of agricultural activities.

Table II: Support for ED 90 statements made in relation to identified issues

Issue	Response¹		
	No	Yes	No comment
Recognition of changes in the underlying value of biological assets in the income statement	61	3	36
Existence of active markets for biological assets	55	1	44
The standard's fit with the traditional accounting framework	56	0	44
Requirement for revaluation of biological assets at each reporting date	43	0	57
Special purpose financial reporting	40	0	60
Disclosure requirements	24	24	52
Point of sale costs	24	0	76
Variety of valuation methods made available by the standard	17	4	79
Further classification of biological assets into current/non current and bearer/consumable portions	12	16	72
Separation of assets into biological and non biological components	7	4	89
Biological liabilities	2	0	98

¹ Figures reported in the three response columns reflect the number of ED 90 submissions in which respondents made no comment, or either disagreed or agreed with the issues noted in the first column.

Table III: Percentage of respondent group recognising ED 90 issues as a concern¹

Issue	Background of respondents									Total ⁵ (n = 100)
	Accountants ² (n = 61)	Govt agency ³ (n = 6)	Academic (n = 4)	Cropping (n = 4)	Orchard (n = 6)	Vineyard (n = 5)	Livestock (n = 5)	Forestry (n = 9)	Biological asset holders ⁴	
Recognition of changes in the underlying value of biological assets in the income statement	57%	50%	75%	100%	67%	100%	80%	78%	83%	61%
Existence of active markets for biological assets	52%	33%	50%	100%	83%	80%	60%	78%	79%	55%
The standard's fit with the traditional accounting framework	56%	67%	50%	75%	100%	20%	60%	44%	59%	56%
Disclosure requirements	23%	33%	25%	50%	67%	20%	40%	11%	34%	24%
Requirement for revaluation of biological assets at each reporting date	39%	50%	75%	75%	33%	40%	40%	44%	45%	43%
Special purpose financial reporting	59%	0%	0%	25%	0%	0%	40%	11%	14%	40%
Further classification of biological assets into current/non current and bearer/consumable portions	11%	17%	0%	50%	0%	20%	60%	11%	24%	12%
Point of sale costs	18%	33%	75%	25%	0%	0%	60%	44%	28%	24%
Variety of valuation methods made available by the standard	7%	17%	50%	50%	17%	0%	40%	56%	34%	17%
Separation of assets into biological and non biological components	8%	0%	0%	50%	17%	0%	0%	22%	17%	7%
Biological liabilities	2%	0%	0%	25%	0%	0%	0%	0%	3%	2%

¹ The totals reported in each row indicate the percentage of ED 90 submissions for which a particular issue was of concern.

² Accountants consisted of accountants in public practice and responses of NZICA branches.

³ Government agencies included the Treasury, Securities Commission, Office of the Auditor and Controller General, Audit NZ, Ministry of Agriculture and Forestry, and AgResearch.

⁴ This column is an aggregation of results pertaining to the five preceding columns, and represents all respondents with material holdings of biological assets (i.e., those that own and/or operate crops, orchards, vineyards, livestock and forestry, or belong to a closely aligned interest group).

⁵ The figures reported in this column exclude those reported in the aggregate 'biological asset holders' column.

Table IV: Similarity of issues raised between preparers and others

Issue	Preparers¹ (n = 90)	Non-preparers² (n = 10)
Recognition of changes in the underlying value of biological assets in the income statement	61%	60%
Existence of active markets for biological assets	57%	40%
The standard's fit with the traditional accounting framework	56%	60%
Disclosure requirements	23%	30%
Requirement for revaluation of biological assets at each reporting date	41%	60%
Special purpose financial reporting	44%	0% *
Further classification of biological assets into current/non-current and bearer/consumable portions	12%	10%
Point of sale costs	21%	50% *
Variety of valuation methods made available by the standard	16%	30%
Separation of assets into biological and non biological components	8%	0%
Biological liabilities	2%	0%

¹ 'Preparers' includes accountants and biological asset holders.

² 'Non-preparers' includes government agencies and academics.

* p < 0.05 (Chi-Square test).