ACTUALIDAD CONTABLE

Implementation of IAS 41 (Agriculture): The case of a Peruvian SME

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The primary purpose of this paper is to present an actual case of a Peruvian SME which applied IFRS accounting standards – specifically, IAS 41 for consumable biological assets – to reflect its financial situation more accurately as an alternative to legal and tax regulations applying historical cost, which Peruvian SMEs more commonly use for the preparation of financial statements. Primary data were gathered through interviews and observation at the SME studied. This forestry-industry SME in question tried unsuccessfully to get financing from banks, even presenting complementary information regarding the calculation of biological asset values according to IAS 41. Failing this, it turned to seeking funding from private long-term investors, eventually succeeding in obtaining long-term financing from a new strategic investor. The significance of this paper is that it presents evidence of the advantages for companies (specifically agriculture-related companies) that comply with IFRS in a country where historical cost-based tax rules are traditionally applied for accounting purposes. Other SMEs can similarly improve the likelihood of obtaining new capital from potential investors by complementing the information provided in financial statements with detailed data regarding fair value calculation of biological assets.

Keywords: IFRS, IAS 41, Peru, SME

Implementación de la NIC 41 (Agricultura): El caso de una empresa MYPE peruana

El objetivo principal de este artículo es presentar el caso real de una PYME peruana que aplicó las NIIF, específicamente la NIC 41 para activos biológicos, con el fin de reflejar más adecuadamente su situación financiera. Las NIIF fueron aplicadas como una alternativa a las normas tributarias – que aplican el costo histórico, para la preparación de estados financieros – que las PYMES peruanas utilizan comúnmente. La data primaria fue recolectada utilizando las técnicas de entrevista y observación. Inicialmente, esta PYME forestal intentó sin éxito obtener financiamiento de los bancos, incluso presentó información complementaria con respecto al cálculo de los valores de los activos biológicos según la NIC 41. Al no lograrlo, recurrió a buscar financiamiento de inversionistas privados a largo plazo, logrando finalmente obtener financiamiento a largo plazo de un nuevo inversor estratégico. Este artículo académico adquiere relevancia debido a que presenta evidencia empírica (específicamente para las empresas en el sector agricultura) de las ventajas de la aplicación de las NIIF en un país donde las normas tributarias basadas en costos históricos se aplican tradicionalmente para fines contables. De manera similar, otras PYMES podrían mejorar la probabilidad de obtener financiamiento proveniente de posibles inversionistas al implementar las NIIF (complementando la información proporcionada en los estados financieros con datos detallados sobre el cálculo del valor razonable de los activos biológicos).

Palabras clave: NIIF, NIC 41, Perú, PYME

Implementação da IAS 41 (Agricultura): O caso de uma empresa peruana MYPE (média e pequena empresa)

O objetivo principal deste artigo é apresentar um caso real de uma PME peruana que aplicou as normas contábeis IFRS - especificamente, IAS 41 para ativos biológicos consumíveis - para refletir sua situação financeira com mais precisão como uma alternativa aos regulamentos legais e fiscais que aplicam o custo histórico, que as PMEs peruanas mais comumente usam para a preparação de demonstrações financeiras. Os dados primários foram coletados por meio de entrevistas e observação na SME estudada. A referida PME do setor florestal tentou, sem sucesso, obter financiamento junto dos bancos, apresentando mesmo informação complementar relativamente ao cálculo dos valores dos ativos biológicos de acordo com a IAS 41. Na falta, recorreu a financiamentos junto de investidores privados de longo prazo, conseguindo obter financiamento de longo prazo de um novo investidor estratégico. O significado deste artigo é que ele apresenta evidências das vantagens para as empresas (especificamente empresas relacionadas à agricultura) que cumprem as IFRS em um país onde as regras fiscais baseadas em custos históricos são tradicionalmente aplicadas para fins contábeis. Da mesma forma, outras PMEs podem melhorar a probabilidade de obter novo capital de potenciais investidores, complementando as informações fornecidas nas demonstrações financeiras com dados detalhados sobre o cálculo do valor justo dos ativos biológicos.

Palavras-chave: IFRS, IAS 41, Peru, PME

1. Introduction

In December 2000 the International Accounting Standards Committee (IASC) issued IAS 41. These standards prescribe the accounting treatment for biological assets during their period of biological transformation and for the initial volume and value measurements of agricultural produce at the point of harvest. IAS 41 divides biological assets into *bearer* biological assets and *consumable* biological assets, each with a different method of assessing fair value. Bearer biological assets, unlike agricultural produce, are self-regenerating; examples include livestock from which milk is produced, grapevines, fruit trees, and trees from which firewood is harvested while the tree remains. In contrast, consumable biological assets are either harvested as agricultural produce or sold as biological assets — for example livestock intended for meat production, livestock held for sale, fish in farms, crops such as maize and wheat, and trees that are grown for lumber (IAS 41). There is often an active market for consumable biological assets, and so their fair value can be determined easily.

Moreover, the IASB changed the financial reporting rules for biological assets that met the definition of bearer plants (e.g. grape vines, rubber trees and oil palms), by publishing on 30 June 2014 Agriculture: Bearer Plants, (Amendments to IAS 16 and IAS 41). The amendments required that bearer plants be accounted for like property, plant and equipment (Bozzolan et al., 2016).

The primary purpose of this paper is to present the case of a Peruvian SME (small/medium-sized enterprise) which applied IFRS accounting standards for SMEs — specifically, IAS 41 for consumable biological assets — as an alternative to legal and tax regulations applying historical cost, which Peruvian SMEs more commonly use for the preparation of financial statements. The SME investigated was eventually able to obtain long-term funding through investment by a strategic partner. A second purpose is to discuss the potential implications of IFRS implementation for Peruvian SMEs and the agriculture industry, and the Peruvian economy in general. These implications could motivate Peruvian accounting regulators to enforce IFRS (and IFRS for SMEs) more rigorously.

In the particular case studied, biological assets consist of forest plantations of eucalyptus, capirona, and other tress in the process of growth. These assets were valued at fair value for the preparation of financial statements (specifically, the Statement of Financial Position). Fair value was calculated using the expected net cash flows and related costs during the useful life of each type of tree (8 to 16 years). For this purpose, the forestry company had to prepare projections of operating income and expenses according to the estimated production of the particular product.

The valuation technique used in the case of the above-mentioned plantations was the "income approach," in accordance with paragraphs B10–B11 of IFRS 13. The discounted cash flows were estimated based on growth, logging plan, sale price, and costs.

It should be mentioned that biological assets are recognized and measured at their fair value separately from the land. The classification of biological assets begins with preparation of the land for planting seeds and/or seedlings and ends with logging. The direct and indirect costs that are invested in the harvest and growth of forest plantations are recognized as biological assets during the trees' growth. Details of the case are presented following an overview of accounting standards in Peru and a review of relevant literature.

2. Accounting in Peru: Authorities and standards

The three financial accounting authorities in Peru are the Accounting Standards Council (CNC), the Superintendence of the Securities Markets (SMV), and the Superintendence of Banking, Insurance, and Pension Funds (SBS). Currently, financial accounting in Peru is regulated by the CNC, which is an agency within the Ministry of Economy and Finance. The SMV regulates, supervises, and controls non-financial listed companies while financial companies are regulated by the SBS. Some other key players are the public accountants associations, the auditing firms (mainly the big four), the National Superintendence of Tax Administration (SUNAT), the Peruvian Institute of Independent Auditors (IPAI), and the universities.

Between 1994 and 1998 the CNC issued a series of resolutions by which it officially adopted IAS as the Peruvian GAAP for the purposes of statutory financial reporting (World Bank, 2004). The CNC's main role is to endorse and make official the application of IFRS to the large majority of Peruvian private companies; for publicly-listed companies, the SMV supervises non-financial companies and the SBS supervises financial companies. On 31 October 2010, the CNC issued Resolution № 045-2010-EF/94, which made the application of IFRS to SMEs official.

Not all Peruvian companies comply with the full IFRS. Peruvian companies are required to comply with accounting standards according to their size and industry (Tanaka, 2014). Table 1 summarizes the current situation of the accounting standards that apply to different types of companies.

Table 1. *Accounting Standards in Peru*

Type of company	Institution that sets the official standards	Accounting standards
Financial company	SBS	SBS own accounting standards
Non-financial listed company	IASB	IFRS
Private company	CNC	IFRS approved by the CNC
SME	CNC	IFRS for SMEs

An extremely relevant question is: To what degree do Peruvian SMEs actually comply with the IFRS for SMEs? Research by Tanaka (2015) concluded that most Peruvian SMEs do not comply with IFRS for SMEs, even though these are the official accounting standards. Peruvian SMEs prepare their financial statements according to legal and tax regulations.

The lack of compliance also applies to most non-listed non-financial companies in Peru. The Tribunal Court in 2016 struck down a previous regulation requiring all large non-financial companies to submit audited financial statements prepared according to IFRS.

In Peru, regretfully, companies follow the rules only when they know that failure to do so will result in a penalty. And non-compliance with IFRS (for large companies) or with IFRS for SMEs (for small/medium-sized companies) carries no monetary penalties. For Peruvian companies, the benefits of providing IFRS-required information must justify the cost of providing and using that information; otherwise it will not be provided.

3. Literature review

Research on IAS 41 can be classified into two categories: multinational research and country-specific research.

3.1. Multinational research

Elad and Herbohn (2011) found that organizations that adopted IAS 41 in Australia, France, and the United Kingdom applied various techniques to value their biological assets. These included net present value (29%), historic cost (23%), fair value (16%), independent valuation (13%), market prices for similar assets (13%), recent market prices (5%), and the lower of cost and net realizable value (1%).

Using 389 firm-year observations of listed firms in 27 countries, Gonçalves et al. (2017) posited that recognized biological assets are value relevant at fair value, but more value relevant in firms with higher levels of disclosure. The same results were obtained for bearer biological assets. For consumable biological assets, however, the results suggested that investors do not value recognized biological assets in firms with higher levels of disclosure.

Using a sample of 183 firms from 35 different countries that adopted IAS 41, Huffman (2018) found that earnings information is significantly more relevant when *in-exchange* biological assets (which generate value on a stand-alone basis by being exchanged for cash or other assets) are measured at fair value, but that book value and earnings information are significantly less relevant when *in-use* biological assets (which generate value when employed in combination with other assets such as property, plant and equipment) are measured at fair value. Consistent with these results, in cross-sectional analyses, Huffman also found that investors discount the fair value of in-use biological assets and their associated unrealized gains and losses relative to the fair value of in-exchange biological assets.

Using a sample of financial statements of 50 organizations from 10 countries as well as questionnaires and interviews with related institutions, Van Biljon and Scott (2019) concluded that users considered biological asset values disclosed in financial reports to be meaningless unless they were accompanied by detailed information that allowed re-assessment of the valuations, as the standard information disclosure requirements of IAS 41 are inadequate for accurate valuation. Such detailed information, if provided, should allow users to grasp the operational requirements of the biological assets, as well as the assets' capacity and their related revenue.

Finally, using a sample of IAS 41 adopters from countries that mandates IFRS in 2005 and the control samples of non-IAS 41 adopters, Hsu et al. (2019) found that price informativeness for IAS 41 adopters increases following IAS 41 adoption. They also found that the effect of IAS 41 adoption is similar between firms that transforms bearer plants, which derive value in use of assets and other biological assets.

3.2. Country-specific research

An Australia-based study by Herbohn and Herbohn (2006) noted that compliance with IAS 41 allows statement preparers a choice of methods to determine the fair value of timber assets, and concluded that the recognition of unrealized gains and losses from timber assets from changes in fair value and the harvest of agricultural produce is likely to markedly affect income statements, introducing greater volatility into reported income.

Maina (2010) found that the most significant challenge faced by SMEs in Kenya when valuing their biological assets at fair value is the lack of market information needed to determine fair value. Schutte and Buys (2011) found that South African SMEs are involved in many different kinds of specialized activities and that they therefore do not often apply IFRS for SMEs to agricultural activities or apply fair value accounting to biological assets. Argilés et al. (2011) concluded that, for biological assets of Spanish farms, fair-value valuation has greater predictive power than historical-cost valuation. Lapointe-Antunes and Moore (2013) presented the case of a Canadian wine company's reporting of tangible long lived asset disclosures and made recommendations on how best to comply with IAS 16 Property, Plant and Equipment and IAS 41 Agricultural Property.

Baigrie (2014) analyzed the application of IAS 41 by listed South African companies and found that only 38 percent of companies studied considered the principle of fair value based on adjusted market prices or industry data in valuing biological assets at the point of harvest. Kurniawan et al. (2014) showed that agriculture in Indonesia has its own way of valuating biological assets. For farmers in Indonesia, biological assets cannot be adequately measured only in terms of money, because they are the accumulation of various kinds of utility, some of which are not economic. For this reason, the application of international agricultural accounting standards is unsuitable for the conditions of agriculture in Indonesia.

Bohušová and Svoboda (2016) argue that in the case of bearer plants, fair-value information is less useful than historic cost information for external users, because the effort and cost of obtaining fair-value information exceeds the benefits of having it. Using data on all agribusinesses listed in Australia, where fair value accounting was first implemented in the agricultural sector, He et al. (2018) found that fair value of biological assets does not provide incremental forecasting power for future operating cash flows, whether market-determined prices or manager-estimated values are used.

Based on the above literature review, the following research questions become relevant in the Peruvian context:

- How do Peruvian agricultural companies (especially SMEs) determine the value of their biological assets?

- What alternatives could a Peruvian SME use to calculate the fair value of its biological assets?

- Are biological asset values, when calculated as prescribed in IAS 41 and disclosed in financial statements, meaningful for a financial institution when it considers whether or not to grant credit?

- Are biological asset values, when calculated as prescribed in IAS 41 and disclosed in financial statements, meaningful for potential investors?

- Are recognized biological assets using fair value accounting relevant? In other words, can stakeholders use the financial statements of companies that adopted IAS 41 to predict earnings?

Most of these questions are addressed in the case described below.

4. Case

4.1. Company description

A Peruvian SME was selected for this study as SMEs represent an important source of employment and GDP in Peru. A lumber company was chosen in order to analyze the implementation of IFRS, specifically IAS 41. This private company was founded in the late 2000s and specializes in advanced forestry and environmental technology. Its headquarters are located in Lima and most of its operations are in the Peruvian Amazon rainforest. The company has an average of 100 employees (The number of employees is increased during the period of hewing and harvesting).

In some respects, this SME can be considered an average lumber company but in some others, not. Regarding its operational process (planting and growing trees, wood quality/health inspection, logging and timber processing), this SME is an average lumber company. However, regarding its management, leadership and organization this SME has proven to be a company excelling in the lumber industry. It has received sustainability, innovation and environmental awards both in Peru and internationally.

Through its innovation process, this SME has impacted positively on the environment, generates more jobs in the region and promotes the sustainable development of the surrounding communities. It also enhances the comeback of wildlife, as well as the reduction soil's erosion. This SME promotes the sustainable development through the recovery of degraded lands in the Peruvian Amazon, through forest plantations with innovative technology. The company focuses on the reforestation of native Amazonian timber species, such as eucalyptus, capirona, mahogany, cedar, tornillo, etc. based on vegetative seed of plus trees in the Amazon jungle.

4.2. The Peruvian wood industry

Agriculture is one of the key components of Peru's GDP and it represents one of the most important sources of employment in the country. Although Peru is known as a "mining country" — mining accounts for 17,6% of Peru's GDP — in recent years massive anti-mining protest marches against mining companies have brought the country's impressive economic growth to a halt. Consequently, agriculture offers an alternative engine of growth for Peru's economy. Currently, the Peruvian government provides generous tax benefits to agricultural companies as it recognizes the importance of this sector as a source of employment and economic growth.

5. Resarch methodology

The case study method has gained considerable acceptance as a research methodology in recent decades. In case study research, when "the process has been given careful attention, the potential result is the production of a high-quality case study" (Yin, 2014, p. 99). Eisenhardt and Graebner (2007) posit that a major reason for the popularity and relevance of theory building from case studies is that it is one of the best (if not the best) of the bridges from rich qualitative evidence to mainstream deductive.

In their case study research in accounting, Cooper and Morgan (2008) illustrated four types of cases oriented to maximizing the information content of the study: extreme or deviant cases, maximum variation cases, critical cases, and paradigm cases. The extreme case can be powerful in communicating an idea. It works on the principle that much value can be learned by looking at outliers or even deviant cases. Maximum variation cases provide valuable insight into a specific problem or theory by selecting cases that are different with respect to some dimension, such as the type of accounting system. Critical cases have a strategic importance in relation to a general problem or theory, for example suggesting that if a theory is falsified for this case, then it is falsified for all cases. Paradigmatic or exemplar cases, which can provide vivid an important information about a situation, and often seek to demonstrate the value of new theories.

Sato (2016) states that case study research for theory construction can be evaluated according to the following three criteria. The first criterion is whether it produces a "good theory." A "good theory" is one that is parsimonious, testable, and logically coherent. The second criterion is whether there is a problem with the analytic process in relating the theory with the data. Just as in other empirical research, the case study must supply information about the process of gathering and analyzing data and samples. The third criterion is whether new knowledge has been produced. The goal of

theory construction research is to create new theories, so it must produce new knowledge and not merely reverify previous knowledge.

Regarding generalizing from case studies, Yin (2013) stated that the desired generalization should present an explanation for how an evaluated initiative produces its results (or not). The explanation can be regarded as a theory of sorts and therefore yield a better understanding of an intervention and its outcomes. Whether such an explanation is based on a theory that emerged for the first time from a case study or had been entertained in hypothetical form prior to the conduct of the case study, researchers need to connect the theory to the extant literature, or alternatively, to use their findings to explain the gaps and weaknesses in that literature. By doing so, the generalizations from a single case study can be interpreted with greater meaning and lead to a desired cumulative knowledge.

In the present case, a high level of diligence was taken in the interviews and observation methods. Interviews were conducted with the CEO and General Manager (a person with more than 30 years of experience in the field), the financial manager, the company accountant, forestry engineers, and other personnel. The average interview length was 40 minutes. The operations of the forestry staff were also observed.

6. Implementation of the IFRS

Accounting practice for forestry activities is special due to the nature of forest biological assets, which are subject to continuous transformation. Expectations of economic benefits derived from forest biological assets may vary not only because of changes in expected prices, but also due to physical changes in volume, whether the result of growth or of other transformations.

In accordance with IAS 41, forestry is understood as the management by a company of the biological transformation of trees, either for sale (seedlings), to generate forest products (wood logs), or to obtain additional forest assets (seedlings for reforestation). According to IAS 41 (paragraph 6), forestry activities share the following three characteristics.

(1) *Capability to change*: trees (forest assets) are called "biological" because they are capable of undergoing transformation. Biological transformation includes both qualitative or quantitative changes in the forest asset—growth, degradation, and procreation—and processing of forest assets to obtain forest products such as cut logs, latex, resin, seeds, and fruits (IAS 41.7). In the forestry activity covered by IAS 41, the following assets are listed:

- *Forest assets*: seedlings and live trees, which are recorded as non-current, are not amortizable without calculation of impairment losses.

- *Forest product collected*: harvest from the company's forest assets is recorded as stock under the criteria of IAS 41, the general criteria of IAS 2, Inventories not being applicable. For wood products produced by processing wood logs, the accounting treatment that must be applied is that under IAS 2, Inventories.

Thus, if a non-current forest asset is cut down and its vital processes cease, it is considered a forest product. In order to establish whether an asset is a forest asset (non-current) or a forest product (inventory), the purpose for which the asset is maintained (harvest vs. reforestation vs. sale) must be taken into account. Consequently, forest plantations whose purpose is to provide timber are called forest assets for the purposes of IAS 41 and counted as non-current assets, since they are harvested to extract sawn timber in the periods proposed by the plantation managers.

(2) *Management of change*: management facilitates biological transformation by enhancing, or at least stabilising, the conditions—e.g., nutrient levels, moisture, temperature, fertility, and light—necessary for the change process to take place. Such management distinguishes agricultural activity from other activities. For example, harvesting from unmanaged sources (such as ocean fishing and deforestation) is not agricultural activity.

(3) *Measurement of change* resulting from forest biological transformation. Both qualitative change produced by the forestry company (e.g., adoption of science and technology, improvement of growth and density standards) and quantitative change (e.g., number of seedlings, quantity collected, weight, volume) are subject to measurement and control as a routine function of the forest industry. The IFRS standards that are most relevant for this research paper are (I) IAS 41 and (II) IFRS 13.

6.1. IAS 41 (Agriculture)

In the case of forest plantations (forest assets), IAS 41 states following criteria for recognition of biologist assets:

a) The company controls the asset as a result of past events. As evidence of control, the company has legal ownership of the asset.

b) Future economic benefits associated with the asset are likely to flow to the company. Future benefits are normally assessed by physical attributes where

forest assets could be sold as sawn timber; therefore, it is likely that the company will generate future economic benefits from sale of the asset.

c) The fair value or cost of the asset can be reliably verified.

6.2. International Financial Reporting Standard 13 (IFRS 13) – Fair value easurement

IFRS 13 prescribes fair value determination treatment, giving three widely-used valuation techniques: the market approach, the cost approach, and the income approach. The appropriate valuation technique for forest plantations (forest assets) is the income approach, according to paragraphs B10–B11 of IFRS 13. The market approach is not appropriate because it requires identical or comparable market data, and such data do not exist for forest assets. The cost approach is not appropriate because it requires current replacement cost (the cost of an asset to replace the service capacity of the existing asset), and this value would only become known in the future. Therefore, the most suitable technique for determining the fair value of forest assets is the income approach, because it converts future cash flows of income and expenses into a single (discounted) present amount. When the income approach is used, the fair value measurement reflects current market expectations of the value of those future cash flows.

As stated by Bohušová and Svoboda (2017), the measurement at fair value using the discounted cash flows method is based on the estimation which requires a relatively large source of input data for this estimation over the useful life of bearer plants. On the other hand, the effect on the value of the assets could be controversial and the eff ect on the profi t or loss during the useful life could be volatile.

Future income and cost flows related to the reforestation of forest assets were projected for the Peruvian SME focused on in this study. Three scenarios were considered: optimistic, most likely, and pessimistic. The probability of occurrence of these was 30%, 60%, and 10%, respectively, and they were weighted accordingly to obtain discounted expected cash flows. These discounted cash flows were estimated based on growth, logging plan, sale price, and costs. To determine fair value, the following was taken into account:

1. In the present research case, two species were considered: eucalyptus and capirona. Information on the number of plantations owned by the forestry company by geographic area and species, as well as specific costs (current and estimated

future), was collected from the company's managers and other employees and through observation.

2. The metric volumes of trees to be harvested according to a harvest plan established by company management.

3. Market prices of forest plantations in cubic meters and by species, current and future estimates. For this purpose, it was necessary to project prices based on three scenarios: optimistic (a constant growth level of 2% per year), most likely (1,5% per year), and pessimistic (1% annual growth). As prices are usually in foreign currency (US dollars: USD$), Bloomberg financial software was used to forecast the exchange rate through 2023 and convert prices into the Peruvian currency (nuevo sol: S/).

4. Regarding the costs of forest plantations, various assumptions were made concerning forestry industry indicators. An annual increase of 2% in the price of sawn timber was assumed in the projections. Other factors considered in the projections were the economic growth rate and inflation rate as forecast by Peru's central bank, The annual costs of camp construction, road construction, biomass cleaning, land preparation, planting, pest control, weed control, drainage, bridges, sewers, fire fighting system, and maintenance were also taken into account.

5. Projected income and cost flows were discounted at a rate of 12%. In general, the discount rate should be based on the weighted average cost of financing. As explained above, the present value of the income and cost flows was obtained considering three scenarios, optimistic, most likely, and pessimistic, with a probability of 30%, 60% and 10% respectively.

7. Results

As mentioned at the top, the Peruvian SME in question applied IFRS so that its financial statements would more accurately its financial position. The appendices show the calculations of the value of biological assets using both the historical cost approach (most commonly used by Peruvian SMEs for preparing financial statements) and the fair value approach (prescribed by IAS 41–Agriculture complemented by IFRS 13–Fair Value Measurement). For comparison, the figures for three years are presented below. For 2018, for example, there is an enormous difference between the value of the biological assets using historical cost (S/637.279) and the value using the fair value approach (S/2.225.170. In USD: $193.115 vs. $674.294.).

Table 2. *Comparison of the biological assets using historical-cost and fair value per year*

	2016	2017	2018
Fair value of the biological assets	S/1.711.877	S/1.942.682	S/2.225.170
Value (historical cost) of the biologial assets (1)	S/556.959	S/598.414	S/637.279
Difference	S/1.150.324	S/1.339.195	S/1.566.008

(1) Without projection incomes, trees don't have expected value in the year only its own cost. See appendices for details of the calculations.

8. Discussion and analysis

As mentioned above, although the official accounting standards in Peru are the IFRS (full IFRS and IFRS for SMEs), most Peruvian SMEs actually follow Peru's domestic tax rules (which value biological assets using the historical cost approach) when they prepare their financial statements. This has been the case for over a decade, since the Peruvian tax rules were established.

In 2018, as part of its expansion plan, the SME studied decided to raise capital to finance future operations. In doing so, based on advice from consultants, the company's CFO decided to implement IFRS so that its financial statements would more accurately reflect the financial and economic position of the company. As explained above, according to current accounting regulations, the IFRS are the official accounting standards for Peruvian companies. But since there are no penalties for non-compliance with IFRS (except in the case of listed non-financial companies), and because accountants with IFRS expertise are in short supply, the overwhelming majority of companies prepare their financial statements following the (simpler) domestic tax rules. For this reason, the SME in question had to hire an outside expert to do the calculations for computing fair value.

After completing the preparation of its financial statements, the SME in question applied for a long-term loan from a bank, presenting, among other documents, its financial statements according to IFRS for SMEs. It is important to mention that the SME presented not just its IFRS-compliant financial statements, but also the details of its calculations (although this is not mandated by IAS 41). However, after several weeks of discussions, the bank rejected the loan request, choosing to stick with its general policy of only approving loans with fixed-asset collateral.

Although this paper presents only one case, it can be inferred that in Peru, even the submission of complementary data for the calculation of the fair value of biological

assets carries little weight for financial institutions in their considerations of whether or not to extend a loan. A likely explanation for this is that banks and other financial institutions are very risk-averse, and that they use very inflexible tools for the approval of loans.

The SME in question continued to seek funding. It contacted a number of potential investors, presenting not only its strategic plans but also financial and economic information, including audited financial statements. Finally, the company succeeded in securing a strategic partner which, after reviewing the SME's plans and its IFRS-compliant financial statements, decided to invest in the company via a joint venture. This finding is consistent with Argilés et al. (2011) but contradicts Bohušová and Svoboda (2016), as the new strategic partner's investment decision attests to the additional predictive power it found in the application of fair value accounting.

In general, although the implementation of IAS 41 allows companies to value their biological assets at fair value — which for some companies means significantly higher value of those assets — some stakeholders (such as the financial institution in the present case) find fair value calculations irrelevant because of a lack of detail in the information provided in loan applications. As explained above, in the present case, one type of stakeholder (a financial institution) found IAS 41 implementation to be meaningless, even though complementary detailed information (beyond what was required by IAS 41) was provided to allow re-assessment of the valuations. However, for another type of stakeholder (the investor) the complementary information — which included details of the fair value calculations — was extremely relevant for his decision to become a strategic partner.

This finding is in line with Ramanna's (2013) statement that "investment banks and asset managers are accustomed to using the fair value in their day-to-day business to prepare in-house balance sheets for risk-management purposes" (p. 4). According to the Cooper and Morgan (2008) classification, this case would be included in the "Maximum variation cases" because it shows an example of a company which implemented the "new" accounting standards (IFRS) and thus, it was able to access financing for its operations and expansion. Moreover, it followed Sato (2016) three criteria for theory construction based on case study research.

The case presented in this paper is significant as it provides evidence supporting the use of IFRS in a country where tax rules are traditionally applied for accounting purposes, even when the accounting standards set by the local accounting standards board mandate compliance with IFRS and IFRS for SMEs. As noted above, there are no penalties in the Peruvian case for companies that do not comply with IFRS or IFRS

for SMEs. (There are two important exceptions to this: financial institutions, to which which IFRS does not apply, and listed non-financial companies, which may be penalized by the SMV.) Nevertheless, based on this case research, it is strongly recommended that companies complement the information they provide in their financial statements with detailed data regarding the fair value calculations for their biological assets (even though IAS 41 does not require this). Finally, this case study presented a detailed explanation for how an evaluated initiative produces its results so it can be concluded that this study can be used for generalization in the agricultural industry.

8.1. Implications

This Peruvian SME's successful raising of capital could serve as a model for other agricultural companies, with implications for not only the accounting field but also for the broader economy and society. In the accounting field two scenarios are possible:

- **Scenario 1:** in this scenario, the CNC (Peru's accounting regulator) adopts a proactive attitude after realizing that actual compliance with IFRS (and IFRS for SMEs) would have a positive economic and social impact in Peru. That is, it would try to enforce compliance with IFRS more rigorously. Such an "enforcement plan" could involve two stages. The first is educating companies, via seminars and forums, regarding the advantages of complying with IFRS; this stage could last for several years. The second stage would be penalizing companies that do not comply with IFRS. Scenario 1 can be considered likely in the Peruvian case as the Peruvian government has a clear interest in supporting and promoting the agricultural sector; as noted above, the government provides generous tax benefits to agricultural firms.

- **Scenario 2:** should the CNC *not* adopt a more proactive attitude regarding enforcement of IFRS compliance, then it is likely that some Peruvian agriculture companies — especially those that want to raise capital — will feel motivated to adopt IFRS (and IFRS for SMEs) on their own, in order to upgrade the quality (accuracy) of their financial statements. This means that they would "voluntarily" value their biological assets at fair value. Should more agriculture companies adopt IFRS — either due to increased enforcement or voluntarily — then a positive impact on the agriculture sector can be expected. And this, in turn, would have a positive impact on economic growth and social development in Peru.

9. Conclusions

This paper has presented a real-world case of a company that implemented IAS 41 to value its biological assets. Before it implemented IAS 41, this SME complied with tax regulations to prepare its financial statements, a common practice by Peruvian SMEs even though the Peruvian Accounting Standards Board (CNC) mandates compliance with IFRS for SMEs. In Peru, the tax regulations call for companies to value their assets at historical cost. The forestry SME studied found fair value accounting to be an alternative that more realistically values its biological assets, and this enabled the company to obtain external financing.

This paper supports the argument that companies (specifically agriculture companies) should comply with IFRS in a country where historical cost is traditionally applied in preparing financial statements. The company studied benefited greatly from the application of IFRS: this allowed it to achieve its goal of raising capital to fund growth. This model could be replicated by other forestry companies, resulting in significant benefits for both company and country.

Contribución de autores:

Tanaka, G.: Conceptualización, Metodología, *Software*, Validación, Análisis formal, Investigación, Recursos, Curación de datos, Escritura – borrador original, Escritura, revisión y edición, Visualización, Supervisión, Administración del proyecto, Adquisición de fondos. **Castillo, C.:** Conceptualización, Metodología, *Software*, Validación, Análisis formal, Investigación, Recursos, Curación de datos, Escritura – borrador original, Escritura, revisión y edición, Visualización, Supervisión, Administración del proyecto.

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Declaración de conflicto de intereses

El (los) autor(es) declara(n) que, durante el proceso de investigación, no ha existido ningún tipo de interés personal, profesional o económico que haya podido influenciar el juicio y/o accionar de los investigadores al momento de elaborar y publicar el presente artículo.

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APPENDICES

Appendix 1. Calculations of the value of biological assets – IFRS 13 incomes appliance

ASSUMPTIONS:

For the fair value determination and the future income projection, the IFRS 13 allows the possible occurrence scenarios: average.

	Scenarios		
Occurrence probability	Optimist	Conservative	Pessimist
	30%	60%	10%

Growth rate		
Optimist	Conservative	Pessimist
2%	1.50%	1%

OTHER ASSUMPTIONS:

Number of trees		Standing tree price [1] US $
EUCALYPTUS	10,000	300
CAPIRONA	5,000	180

(1) To determine the annual price, the logging cost is reduced (USD 50), in proportion to the tree age.

Discount rate	12%	(*)

Average exchange rate (*)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	3.290	3.300	3.310	3.330	3.380	3.440	3.510	3.363	3.364	3.366	3.363	3.369	3.371	3.373	3.374	3.376

Inflation rate S/.	2.50%	(*)
Devaluation rate UD $	0.50%	(*)

(*) Exchange rate USD / PEN bellowing to the years in which it is projected to harvest - Source: Bloomberg.

Tree costs S/.	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Installation 1st year	10.00																
Maintenance 2nd year	4.00	4.10															
Maintenance 3rd year	4.00		4.20														
Maintenance 4-7 year	3.00			3.23	3.31	3.39	3.48										
Maintenance 8-11 year	4.00							4.75	4.67	5.00	5.12						
Maintenance 12-16 year	5.00											6.56	6.72	6.89	7.06	7.24	7.42

	2015								2023				2027				2031
Harvest price / m3 sawn timber	75								78.05				79.63				81.23
Harvest t m3									348.80				814.92				3077.38

(*) Maximum assumptions, based on the Peruvian Central Reserve Bank information
Source: "Reporte de Inflación Junio 2019 - Panorama actual y proyecciones macroeconómicas 2019-2020". Banco Central de Reserva del Perú
http://www.bcrp.gob.pe/docs/Publicaciones/Reporte-Inflacion/2019/junio/reporte-de-inflacion-junio-2019.pdf

Appendix 2. *Calculations of the value of biological assets – Scenarios evaluation*

OPTIMISTIC SCENARIO Occurrence probability : 30%					
YEARS	2019	2023	2027	2031	
VARIETY (/1,000)	Year 4	Year 8	Year 12	Year 16	Total
EUCALYPTUS					
Harvest (tress)	-400	-150	-150	-300	-1,000
Standing tree volume (m3/foot)	-	80	150	470	700
CAPIRONA	2019	2023	2027	2031	
Harvest (tress)	-385	-150	-150	-315	-1,000
Standing tree volume (m3/foot)	-	50	80	110	240

For 1,000 tree

YEAR 2016

Calculation of the price Increase of the sawn timber US$	2016	2023	2027	2031		YEAR/ INCREASE	Standing tree price US$
	1	8	12	16			
EUCALYPTUS	300	345	373	404		2%	300
CAPIRONA	180	207	224	242		2%	180

REVENUE (SAWNS TIMBER SALES)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	275,685	559,518	1,897,674	2,732,877	10,000
CAPIRONA	51,691	89,523	133,241	274,455	5,000
TOTAL REVENUE USD$	327,375	649,041	2,030,915	3,007,332	
TOTAL REVENUE S/.	S/. 1,100,818	S/. 2,186,754	S/. 6,856,073	S/. 10,143,645	

Annual income (Current value)	S/ 497,954.31	S/ 628,639.41	S/ 1,252,578.96		i
TOTAL INCOME TO 31/12/2016	S/2,379,172.68				12%

YEAR 2017

Calculation of the price Increase of the sawn timber US$	2017	2023	2027	2031		YEAR/ INCREASE	Standing tree price US$
	2	8	12	16			
EUCALYPTUS	306	345	373	404		2%	300
CAPIRONA	184	207	224	242		2%	180

REVENUE (SAWNS TIMBER SALES)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	275,685	559,518	1,897,674	2,732,877	10,000
CAPIRONA	51,691	89,523	133,241	274,455	5,000
TOTAL REVENUE USD$	327,375	649,041	2,030,915	3,007,332	
TOTAL REVENUE S/.	S/. 1,100,818	S/. 2,186,754	S/. 6,856,073	S/. 10,143,645	

Annual income (Current value)	S/ 557,708.83	S/ 704,076.14	S/ 1,402,888.43		i
TOTAL INCOME TO 31/12/2017	S/2,664,673.40				12%

YEAR 2018

Calculation of the price Increase of the sawn timber US$	2018	2023	2027	2031		YEAR/ INCREASE	Standing tree price US$
	3	8	12	16			
EUCALYPTUS	312	345	373	404		2%	300
CAPIRONA	187	207	224	242		2%	180

INGRESOS (VENTA DE MADERA ASERRADA)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	275,685	559,518	1,897,674	2,732,877	10,000
CAPIRONA	51,691	89,523	133,241	274,455	5,000
TOTAL REVENUE USD$	327,375	649,041	2,030,915	3,007,332	
TOTAL REVENUE S/.	S/. 1,100,818	S/. 2,186,754	S/. 6,856,073	S/. 10,143,645	

Annual income (Current value)	S/ 624,633.89	S/ 788,565.28	S/ 1,571,235.05		i
TOTAL INCOME TO 31/12/2018	S/2,984,434.21				12%

MOST LIKELY SCENARIO				
Occurrence probability : 60%				
YEARS	2019	2023	2027	2031	
VARIETY (/1,000)	Year 4	Year 8	Year 12	Year 16	Total
EUCALYPTUS					
Harvest (tress)	-400	-150	-150	-300	-1,000
Standingtree volume (m3/foot)	-	80	150	470	700
CAPIRONA	2019	2023	2027	2031	
Harvest (tress)	-385	-150	-150	-315	- 1,000
Standingtree volume (m3/foot)	-	50	80	110	240

YEAR 2016

Calculation of the price Increase of the sawn timber US $	2016	2023	2027	2031		YEAR / INCREASE	Standing tree price US$
	1	8	12	16			
EUCALYPTUS	300	333	353	375		2%	300
CAPIRONA	180	200	212	225		2%	180

REVENUE (SAWNS TIMBER SALES)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	266,363	530,077	1,762,827	2,559,267	10,000
CAPIRONA	49,943	84,812	123,773	258,528	5,000
TOTAL REVENUE USD $	316,306	614,889	1,886,600	2,817,795	
TOTAL REVENUE S/.	S/. 1,063,596	S/. 2,071,688	S/. 6,368,886	S/. 9,504,171	

Annual income (Current value)	S/481,116.88	S/595,560.90	S/1,163,571.75	i
TOTAL INCOME TO 31/12/2016	S/2,240,249.53			12%

YEAR 2017

Calculation of the price Increase of the sawn timber US $	2017	2023	2027	2031		YEAR / INCREASE	Standing tree price US$
	2	8	12	16			
EUCALYPTUS	305	333	353	375		2%	300
CAPIRONA	183	200	212	225		2%	180

REVENUE (SAWNS TIMBER SALES)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	266,363	530,077	1,762,827	2,559,267	10,000
CAPIRONA	49,943	84,812	123,773	258,528	5,000
TOTAL REVENUE USD $	316,306	614,889	1,886,600	2,817,795	
TOTAL REVENUE S/.	S/. 1,063,596	S/. 2,071,688	S/. 6,368,886	S/. 9,504,171	

Annual income (Current value)	S/538,850.90	S/667,028.21	S/1,303,200.36	i
TOTAL INCOME TO 31/12/2017	S/2,509,079.48			12%

YEAR 2018

Calculation of the price Increase of the sawn timber US $	2018	2023	2027	2031		YEAR / INCREASE	Standing tree price US$
	3	8	12	16			
EUCALYPTUS	309	333	353	375		2%	300
CAPIRONA	185	200	212	225		2%	180

REVENUE (SAWNS TIMBER SALES)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	266,363	530,077	1,762,827	2,559,267	10,000
CAPIRONA	49,943	84,812	123,773	258,528	5,000
TOTAL REVENUE USD $	316,306	614,889	1,886,600	2,817,795	
TOTAL REVENUE S/.	S/. 1,063,596	S/. 2,071,688	S/. 6,368,886	S/. 9,504,171	

Annual income (Current value)	S/603,513.01	S/747,071.60	S/1,459,584.41	i
TOTAL INCOME TO 31/12/2018	S/2,810,169.01			12%

PESSIMISTIC SCENARIO				
Occurrence probability: 10%				
YEARS	2019	2023	2027	2031	
VARIETY (/1,000)	Year 4	Year 8	Year 12	Year 16	Total
EUCALYPTUS					
Harvest (tress)	-400	-150	-150	-300	-1,000
Standing tree volume (m3/foot)	-	80	150	470	700
CAPIRONA	2019	2023	2027	2031	
Harvest (tress)	-385	-150	-150	-315	-1,000
Standing tree volume (m3/foot)	-	50	80	110	240

YEAR 2016

Calculation of the price Increase of the sawn timber US $	2016	2023	2027	2031		YEAR/ INCREASE	Standing tree price US$
	1	8	12	16			
EUCALYPTUS	300	322	335	348		1%	300
CAPIRONA	180	193	201	209		1%	180

REVENUE (SAWNS TIMBER SALES)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	257,312	502,051	1,636,966	2,396,329	10,000
CAPIRONA	48,246	80,328	114,936	243,510	5,000
TOTAL REVENUE USD$	305,559	582,379	1,751,902	2,639,840	
TOTAL REVENUE S/.	S/. 1,027,458	S/. 1,962,154	S/. 5,914,166	S/. 8,903,778	

Annual income (Current value)	S/464,769.81	S/564,072.37	S/1,080,495.95	i
TOTAL INCOME TO 31/12/2016	S/2,109,338.13			12%

YEAR 2017

Calculation of the price Increase of the sawn timber US $	2017	2023	2027	2031		YEAR/ INCREASE	Standing tree price US$
	2	8	12	16			
EUCALYPTUS	303	322	335	348		1%	300
CAPIRONA	182	193	201	209		1%	180

REVENUE (SAWNS TIMBER SALES)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	257,312	502,051	1,636,966	2,396,329	10,000
CAPIRONA	48,246	80,328	114,936	243,510	5,000
TOTAL REVENUE USD$	305,559	582,379	1,751,902	2,639,840	
TOTAL REVENUE S/.	S/. 1,027,458	S/. 1,962,154	S/. 5,914,166	S/. 8,903,778	

Annual income (Current value)	S/520,542.19	S/631,761.05	S/1,210,155.46	i
TOTAL INCOME TO 31/12/2017	S/2,362,458.70			12%

YEAR 2018

Calculation of the price Increase of the sawn timber US $	2018	2023	2027	2031		YEAR/ INCREASE	Standing tree price US$
	3	8	12	16			
EUCALYPTUS	309	333	353	375		2%	300
CAPIRONA	185	200	212	225		2%	180

REVENUE (SAWNS TIMBER SALES)	2023	2027	2031	TOTAL	Trees number
	8	12	16		
EUCALYPTUS	266,363	530,077	1,762,827	2,559,267	10,000
CAPIRONA	49,943	84,812	123,773	258,528	5,000
TOTAL REVENUE USD$	316,306	614,889	1,886,600	2,817,795	
TOTAL REVENUE S/.	S/. 1,063,596	S/. 2,071,688	S/. 6,368,886	S/. 9,504,171	

Annual income (Current value)	S/603,513.01	S/747,071.60	S/1,459,584.41	i
TOTAL INCOME TO 31/12/2018	S/2,810,169.01			12%

Appendix 3. *Calculations of the value of biological assets – IFRS 13 cost appliance*

COSTS

YEARS	HARVEST				
	2019	2023	2027	2031	Total
VARIETY	Year 4	Year 8	Year 12	Year 16	Total
EUCALYPTUS	4,000	1,500	1,500	3,000	10,000
CAPIRONA	1,925	750	750	1,575	5,000

Trees number	
EUCALYPTUS	10,000
CAPIRONA	5,000
Total	15,000

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
TOTAL TREES	15,000	15,000	15,000	15,000	9,075	9,075	9,075	9,075	6,825	6,825	6,825	6,825	4,575	4,575	4,575	4,575	4,575
Maintenance Cost (unit)	S/10.00	S/4.10	S/4.20	S/3.23	S/3.31	S/3.39	S/3.48	S/4.75	S/4.87	S/5.00	S/5.12	S/6.56	S/6.72	S/6.89	S/7.06	S/7.24	S/7.42
MAINTENANCE COST S/.	S/150,000	S/61,500	S/63,038	S/48,460	S/30,051	S/30,803	S/31,573	S/43,149	S/33,262	S/34,094	S/34,946	S/44,775	S/30,764	S/31,533	S/32,322	S/33,130	S/33,958
Harvest price each m3 US$	75								78.05				79.63				81.23
m3 to harvest									348.80				814.92				3077.38
HARVEST COST									S/27,225				S/64,889				S/249,977
TOTAL COSTS	S/150,000	S/61,500	S/63,038	S/48,460	S/30,051	S/30,803	S/31,573	S/43,149	S/60,487	S/34,094	S/34,946	S/44,775	S/95,653	S/31,533	S/32,322	S/33,130	S/283,935

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	COST (Present Value) to:
2016	S/150,000	S/61,500	S/56,283	S/38,632	S/21,390	S/19,576	S/17,915	S/21,861	S/27,361	S/13,770	S/12,602	S/14,416	S/27,498	S/8,094	S/7,407	S/6,779	S/51,874	S/556,959
2017	S/150,000	S/61,500	S/63,038	S/43,268	S/23,957	S/21,925	S/20,065	S/24,484	S/30,645	S/15,422	S/14,114	S/16,146	S/30,798	S/9,065	S/8,296	S/7,592	S/58,099	S/598,414
2018	S/150,000	S/61,500	S/63,038	S/48,460	S/26,832	S/24,556	S/22,473	S/27,422	S/34,322	S/17,273	S/15,808	S/18,084	S/34,493	S/10,153	S/9,292	S/8,504	S/65,070	S/637,279

TO CONSIDER:

Thinning harvest (4th year) has no commercial value, the thinning harvest of the 8th, 12th and 16th year have commercial value

Tree born year   2015
Tree sowing year   2016

Appendix 4. *Exchange rates*

Contributor		Spot	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
As of 8/1/18	Bloomberg Composite																									
Argentinian Peso	USDARS																									
Forecast			28	28.5	29.5	30	31				18.40	18.41	18.42	18.43	18.44	18.45	18.46	18.47	18.48	18.48	18.49	18.50	18.51	18.52	18.53	18.54
Forward		27.68	29.24	31.7	33.91	36.07	39.27				21.31	21.32	21.33	21.34	21.35	21.36	21.37	21.38	21.39	21.40	21.41	21.42	21.43	21.44	21.45	21.46
Brazilian Real	USDBRL																									
Forecast			3.85	3.7	3.64	3.6	3.42	3.67			2.74	2.74	2.74	2.74	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.76	2.76	2.76	2.76
Forward	3.74		3.77	3.8	3.83	3.87	3.98	4.2	4.49	4.81	4.10	4.11	4.11	4.11	4.11	4.11	4.12	4.12	4.12	4.12	4.12	4.13	4.13	4.13	4.13	4.13
Chilean Peso	USDCLP																									
Forecast			634	630	625	620	622				392	392	392	393	393	393	393	393	394	394	394	394	394	394	395	395
Forward		641	641	641	641	641	642	648	658	668	649	649	650	650	650	651	651	651	652	652	652	652	653	653	653	654
Colombian Peso	USDCOP																									
Forecast			2890	2880	2866	2868	2850				1,796	1,797	1,797	1,798	1,799	1,800	1,801	1,802	1,803	1,804	1,805	1,805	1,806	1,807	1,808	1,809
Forward	2892		2899	2912	2926	2940	2964	3035	3121	3224	3,009	3,011	3,012	3,014	3,015	3,017	3,018	3,020	3,021	3,023	3,024	3,026	3,027	3,029	3,030	3,032
Mexican Peso	USDMXN																									
Forecast			19.6	19.5	19.46	19.06	18.75	17.95			14.31	14.32	14.33	14.34	14.34	14.35	14.36	14.36	14.37	14.38	14.39	14.39	14.40	14.41	14.41	14.42
Forward	18.58		18.76	19.04	19.3	19.56	20.08	21.02	22.09	23.1	20.42	20.43	20.44	20.45	20.46	20.47	20.48	20.49	20.50	20.51	20.52	20.53	20.54	20.55	20.56	20.57
Peruvian Sol	USDPEN																									
Forecast			3.28	3.28	3.29	3.29	3.28																			
Forward		3.270	3.280	3.290	3.300	3.310	3.300	3.360	3.440	3.510	3.363	3.364	3.366	3.368	3.369	3.371	3.373	3.374	3.376	3.378	3.379	3.381	3.383	3.384	3.386	3.387