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Comparison of the forest accounting system in Slovakia and IAS 41

Vergleich des forstlichen Buchführungssystems der Slowakei mit IAS 41

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Summary

The harmonisation of financial accounting and reporting standards is seen as a means of facilitating the globalization of capital markets by enhancing investors' ability to make informed decisions regarding investment alternatives. By the comparison of the existing Slovak Republic accounting legislation with international accounting standards (IAS), a base for the assessment of the level of accounting harmonization process in Slovakia has been obtained. There are several companies that apply the International Financial Reporting Standards (IFRS), but none from the forest sector. Therefore, we focus on the information about biological assets presented in the fi-

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nancial statements of selected Slovak forest enterprises. The aim of this paper is to identify differences in the reporting of forest assets as part of biological assets in accordance with the Slovak national accounting system and international standards IAS/IFRS adjustments. The paper identifies the potential problems associated with the implementation of IAS 41 in the Slovak forest enterprises. The analysis of selected financial statements has shown the lack of information about biological assets, primarily the value of trees in a plantation forest. Therefore, the application of fair value in the valuation of biological assets seems to be a major barrier to the application of IAS 41 Agriculture in the practice of Slovak forest enterprises.

Zusammenfassung

Die Harmonisierung der Rechnungslegungs- und Berichtsstandards wird als Mittel zur Erleichterung der Globalisierung der Kapitalmärkte angesehen, indem die Anleger in die Lage versetzt werden, fundierte Entscheidungen über Investitionsalternativen zu treffen. Mit dem Vergleich der bestehenden Rechnungslegungsvorschriften der Slowakischen Republik mit internationalen Rechnungslegungsstandards (IFRS) wurde eine Grundlage für die Bewertung des Rechnungslegungsprozesses in der Slowakei geschaffen. Es gibt mehrere Unternehmen, die IFRS anwenden, aber keine aus dem Forstsektor. Daher konzentrieren wir uns auf die Informationen über biologische Vermögenswerte, die in den Jahresabschlüssen ausgewählter slowakischer Forstbetriebe dargestellt werden. Das Ziel dieser Arbeit ist es, Unterschiede in der Berichterstattung bezüglich der biologischen Vermögenswerte und der Waldproduktion nach dem slowakischen nationalen Buchführungssystem und internationalen Standards IAS/IFRS zu identifizieren. Der Beitrag identifiziert mögliche Probleme im Zusammenhang mit der Umsetzung von IAS 41 in den slowakischen Forstbetrieben. Die Analyse der ausgewählten Jahresabschlüsse zeigt, dass ein Mangel an Informationen über biologische Vermögenswerte, vor allem betreffend den Wert der Bäume in einem Wirtschaftswald, existiert. Daher scheint in der Praxis der slowakischen Forstbetriebe die Ermittlung des Zeitwertes bei der Bewertung von biologischen Vermögenswerten ein großes Hindernis für die Anwendung von IAS 41 zu sein.

1. Introduction

The harmonization of financial accounting and reporting standards is seen as a means of facilitating the globalization of capital markets by enhancing investors' ability to make informed decisions regarding investment alternatives. Any subsequent reduction in information asymmetry between preparers and users should be reflected in a lower cost of capital (Balman and Verrecchia, 1996). According to Horton et al (2013) more than 120 countries require or permit the use of International Financial

Reporting Standards (IFRS) by publicly listed companies on the basis of higher information quality and accounting comparability from IFRS application.

The content and form of external financial reports is regulated by accounting standards and, until recently, accounting standards have been the domain of national governments and accounting organizations within a particular country (Herbohn and Herbohn, 2006). The globalisation of capital markets commencing in the 1960ies and 1970ies however led to calls for the international financial reporting practices to be 'harmonised' (Henderson et al., 2013). In the 1990ies, the European Union began to realize the need for harmonization of accounting rules. However, it could neither use the existing European Directives (based on the large amount of permissible alternative accounting procedures), nor national regulations of other countries (e.g. US GAAP), since such a decision would limit EU institutions' actions in the case that these rules are contrary to their interests. The result was the decision that if the IASC was to achieve the declared EU objectives, the EU would consider the use of International Accounting Standards (IAS) for the preparation of financial statements in its Member States (Tumpach, 2006).

The legislative framework for the application of international accounting standards is a common regulation of the European Parliament and Council Regulation (EC) no.1606 / 2002 of 19 July 2002 on the application of international accounting standards. The regulation states that its purpose is to contribute to the cost-effective functioning of capital markets. Protecting investors and maintaining confidence in financial markets is also important.

Commission Regulation (EC) No. 1725/2003 of 29 September 2003, adopted certain international standards and interpretations on 14 September 2002 that were extant. In the following years, there have been several amendments to each accepted standard. For this reason, Commission Regulation (EC) No. 1126/2008, containing the text of all existing applicable accounting standards was enacted. Agriculture plays an essential role in the global economy but accounting for its activities has attracted less attention from researchers and accounting standard regulators until the International Accounting Standard (IAS) 41 – Agriculture was adopted (Herbohn and Herbohn, 2006). IAS 41 represents the starting point of a consistent transition from the purchase historic cost principle towards a fair value accounting (Lefter and Roman, 2007).

The Slovak Republic is a part of the ongoing globalization processes in the EU and worldwide. Its current economy is characterized as open with high foreign investments. Several major companies are using foreign capital, which makes the need for unification, and thus clarification of economic information as accounting output even more critical. The harmonization process of accounting standards in the Slovak Republic also concerns forest enterprises. There is the possibility to transfer from national to international accounting standards especially in the group of large forest enterprises. At present no studies exist that would analyse differences between the Slovak forest ac-

counting system and IAS/IFRS, only studies aimed at the biological assets accounting in the Slovak Republic, but they focus only on the area of agriculture (e.g. Bohusova et al., 2011, Bednarova, 2012, Košovska et al., 2014). The aim of this paper is to outline the process of accounting legislation harmonization and the related use of international accounting standards in the Slovak Republic. It is focused on a specific area which is forestry. The paper approaches the process itself as well as the current harmonization level of Slovak accounting legislation in relation to the International Accounting Standards in general and then focuses on forestry, where the approach to the accounting for biological assets is analysed. The lack of research activities in the accounting of forestry in the Slovak republic, particularly in relation to the application of IAS/IFRS is the main reason, why the authors have selected that topic for research.

2. Material and Methods

Forests in Slovakia cover an area of 2170 thousand hectares, 40.9% of that is in state ownership (i.e., managed by state enterprises)¹. The remainder is split between private holdings, municipalities, with relatively large areas owned by the church. Spatially, the 78% of Slovak forest belong to little-differentiated single storey stands. The European beech (*Fagus sylvatica* L.) is the most common forest tree species with 31.6% coverage. The next most common forest tree species are Norway spruce (*Picea abies*), oaks (*Quercus* spp.), pines (*Pinus* spp.) and silver fir (*Abies alba*) with the coverages of 25.5%, 10.7%, 7.0% and 4.1%, respectively.

State forestry administration is separated from state management organizations and performs administration and controls forest management. Slovakia has a long tradition of forestry and silviculture. Currently, there are several levels of forest management planning in the Slovak Republic. The most complex strategic national planning instrument is the National Forest Program SR at the political level. Lower level planning is represented by Forest Management Plans which are elaborated for forest management units (minimum forest area is 1000 hectares) for the period of 10 years². Professional level of forest management is ensured by the Authorized Forest Manager who is a licensed individual guaranteeing expert treatment of forest property for the forest owner in accordance with the law (Sarvašová et al, 2014).

The research is based on the information obtained from the public sources, as from the Ministry of Finance of the Slovak Republic, Ministry of Agriculture and Rural development of the Slovak Republic, Statistical office of the Slovak Republic, and other public institutions and organizations.

To analyse the impact of Slovak legislation harmonization with IAS a comparative analysis of currently applied rules was used. The analysis was based on the documents that are presented in Table 1.

¹ Report on the status of forestry in the Slovak Republic of 2014 (Green report - 1st edn). Ministry of Agriculture and Rural Development of SR in cooperation with National Forest Centre Research Institute, Zvolen, Slovakia, pp.86

² All forest owners (users), regardless the area of forest land, are obliged to manage their forests according to a valid forest management plan.

Table 1: List of analysed acts and decrees

Tabelle 1: Liste der analysierten Gesetze und Verordnungen

Name	Short name (as hereafter referred to)	Short description
Act no. 431/2002 of the Coll. on accounting and its amendments ³	Act on Accounting	General legal norm governing accounting - defines basic terms, states the obligations of accounting entities in accounting and presenting accounting information, defines accounting systems
Decree of the Ministry of Finance of the Slovak Republic No. 23054/2002-92 of 16 December 2002 and its amendments	Decree on Accounting Procedures for Entrepreneurs	lays down details of the accounting procedures and the framework for the chart of accounts for entrepreneurs maintaining accounts under the system of double entry bookkeeping
Decree of the Ministry of Finance of the Slovak Republic No. 4455/2003-92 and its amendments	Decree on Financial Statements	lays down details of the structure, description and content of items of individual financial statements and the extent of data contained in individual financial statements to be published by entrepreneurs maintaining accounts under the system of double entry bookkeeping
Act No. 595/2003 of the Coll. on Income tax and its amendments	Income Tax Act	regulates corporate income tax, define the provisions applicable to the determination of the tax base
Decree of the Ministry of Justice No. 492/2004 Coll. on Determination of General Property Value and its amendments	Decree on Determination of General Property Value	classifies particular methods of determination of a general property value (a property method, business method, combined method, liquidating method and a comparative method)
Commission Regulation (EC) No 1126/2008		adopts certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council, includes a consolidated text of all IAS/IFRS standards that EC had endorsed between 29 September 2003 and 15 October 2008.

Note to table 1:

³This Act has been amended 29 times, important amendments to its scope and importance are: Act no. 561/2004 of the Coll., Act no. 198/2007 of the Coll., Act no. 333/2014 of the Coll.

The second part of the paper is represented by the analysis of accounting methods applied for biological assets in Slovak forest enterprises. For the analysis accounting outputs of the most significant entities operating in forestry were used. The accounting outputs consisted of the financial statements (balance sheet, income statement and notes), annual reports and auditor's report for the time period from 2010 to 2015. The structure of analysed enterprises is presented in Table 2. The aim of the analysis was to evaluate applied methods of financial statements creation and their eventual changes in the reporting period. We focus on the identification of biological assets components that are forestland, forest stand, resp. wood stock in forest stand. The time frame for the analysis was selected to reflect main changes in Slovak legislation seeking to approximate the international standards.

Forest enterprises for the analysis were selected in order to present a representative selection set covering the different legal forms of enterprises, ownership structure and their main source of income that was forestry. The results of the analysis are presented in chapter 3.2.

The information obtained was further supplemented by personal interviews with selected employees responsible for accounting. In total 12 interviews were undertaken. The questions asked were:

- How do you determine the value of forestland in your financial statements?
- Do you update (revalue) the value of forestland? If yes, how often and based on which circumstances (e.g. change in land use, change in market prices, etc.).
- Do you keep records in your accounting about the biological assets value – standing forest stands?
- If yes, in which manner? How do you value this asset? Do you update (revalue) its value?

Information obtained from the interviews was complemented by the analysis of accounting reports and are presented in chapter 3.2.

The analysis focused on:

- Biological assets identification and recognition in the financial statements
- Biological assets measurement
- Identification of the main differences between the current state and IAS 41

Table 2 :Analysed forest enterprises

Tabelle 2: Untersuchte Forstbetriebe

Slovak name	English equivalent	Managed area of forest land in ha
LESY SR, š.p.	Forests of the Slovak republic, state enterprise	893 017
Vojenské lesy a majetky SR, š.p.	Military forests and assets, state enterprise	65 431
Mestské lesy Košice, a. s.	Municipal forest Košice, inc.	19 432
Mestské lesy Kremnica, s.r.o.	Municipal forest Kremnica, ltd.	9 702
GELNICKÉ LESY, s.r.o.	Gelnica Forests, ltd.	4 640
Lesný podnik mesta Zvolen, s. r. o.	Forest enterprise of the city Zvolen, ltd,	1 560
WH Danubius s.r.o.*	WH Danubius ltd.	3 000
Lesné hospodárstvo Inovec, s.r.o.	Forest Economy Inovec, ltd.	2 234
PRO POPULO Poprad, s.r.o.	PRO POPULO Poprad, ltd.	12 900
Vysokoškolský lesnícky podnik vo Zvolene	Forest Enterprise of the Technical University in Zvolen	9 724

* Subsidiary of the WERTHOLZ Holding GmbH

3. Results

3.1. Harmonization of Slovak accounting legislation

An important step in the approximation of Slovak legislation with EU law (the Fourth and Seventh Council Directive of the European Community), creating the conditions for the application of IAS/IFRS, was the adoption of Act on Accounting in 2002. The law contains for the first time definitions of basic terms used in accounting requirements based on IAS/IFRS, adjusted to meet the demands of accounting entities in Slovakia and suitable for the preparation of consolidated financial statements.

On 9 September 2004 the National Council adopted an amendment to the act on accounting which came into effect on the 1st January 2005. The Act introduced ap-

plication of true and fair view principles - accounting entities are required to account for transactions so that the financial statements give a true and fair view of the entity's underlying substance and financial situation. Financial reporting is true if the content of the financial statements corresponds to reality and is in accordance with established accounting policies and methods. Financial reporting is fair if the applied accounting policies and methods lead to a fair presentation of the underlying substance in the financial statements. The accounting period is no more only calendar year but also a financial year. Financial year is defined as a period of 12 successive calendar months, not necessarily identical with the calendar year. The Act introduced the materiality concept for information in the financial statements - information in the financial statements must be useful to their user, is judged based on materiality, and must be understandable, comparable and reliable. Assets, liabilities, revenues and costs or expenses are defined similar to IAS. These basic terms were not defined before. Classification was based on a decision of the entity or in accordance with the present Decree on Accounting Procedures for Entrepreneurs. Notes have become an integral part of financial statements; their importance was reinforced. The act introduced for the first time that certain accounting entities, called "big accounting units", are obliged to compile individual financial statements in accordance with International Financial Reporting Standards. Big accounting units are those who meet at least two of following requirements in at least two consecutive accounting periods:

- The total amount of assets exceeded 165 969 594,40 €, where the amount of assets is present in the balance sheet in valuation not adjusted by items according to § 26 (3) of Act on Accounting,
- Net sales exceeded 165 969 594,40 €,
- Average recalculated number of employees in one accounting period exceeded 2 000.

Such individual financial statements had to be elaborated for the first time in the accounting period beginning on 1st January 2006.

Another important "harmonization" amendment to the Act on Accounting is Act no. 198/2007 of the Coll. Most of the provisions of the amendment came into force on 1st January 2008. In relation to the accounting entities obliged to prepare individual financial statements according to IAS/IFRS, there was only the extension to Slovak Railways. With this change in legislation the state enterprise 'Forests of the Slovak Republic' become the last large enterprise with state ownership that is not obliged to implement IAS/IFRS.

The harmonization process of Slovak accounting standards is not yet completed. The analysed Act on Accounting was since its first approval in 2002 amended a total of 29 times. From the last amendments from 2014, the accounting practice draws a dis-

inction between entities in size classes as to the required level of information to be reported in the financial statements. New, simplified financial statements for the so-called micro entities (e.g. the balance sheet has 45 lines instead of 145) were introduced. One of the benefits is also extending the application of fair value which brought the Slovak accounting standards again closer to IAS/IFRS.

Despite the long term efforts of the Slovak Republic to move closer to international standards, some differences between the two accounting systems still exist. The main differences are presented in Table 3.

Table 3: Main differences between Slovak Accounting Standards and IAS/IFRS

Tabelle 3: Hauptunterschiede zwischen dem forstlichen Buchführungssystem der Slowakei und IAS/IFRS

Slovak Accounting Standards	IAS/IFRS
Legislation established accounting procedures and the content and form of financial statement	Not limited to a particular legal framework, they do not prescribe specific formats for financial statements
3 components of the financial statements (balance sheet, income statement, notes)	4 components of the financial statements (balance sheet, income statement, cash flow statement, statement of changes in equity)
Different reporting of income tax	
There is a growing emphasis on fair value, although not yet in such extent as in IFRS.	Focus on fair value measurements

3.2. Forest accounting in the Slovak Republic

According to the Slovak legislation, forest enterprises have to choose between Slovak accounting standards and IAS/IFRS.

Several IAS/IFRS standards apply for forestry (e.g., IAS 16 in the case of land related to forestry activity, IAS 38 for intangible assets, IAS 20 in the case of state subsidies). However, the dominant position is occupied by IAS 41 Agriculture. This standard determines the recognition of biological assets, agricultural produce at the point of harvest and agricultural government grants. Biological assets include living animals or plants such as sheep, trees in a plantation forests, dairy cattle, fruit trees, etc.. IAS 41 defines

the agricultural production as the product obtained from an entity's biological asset during harvest; and the agricultural activity as the management by the entity of the biological transformation process of living animals or plants (biological assets) up to their sale as agricultural produce or subsequent biological assets. According to this international standard, biological asset or agricultural produce at the point of harvest shall be recognized when the entity controls the asset as a result of past events, it is probable that future economic benefits associated with the asset will flow to the entity and the fair value or cost of the asset can be measured reliably. As presented in Figure 1, the application of the standard depends on the type of activities carried out by the entity.

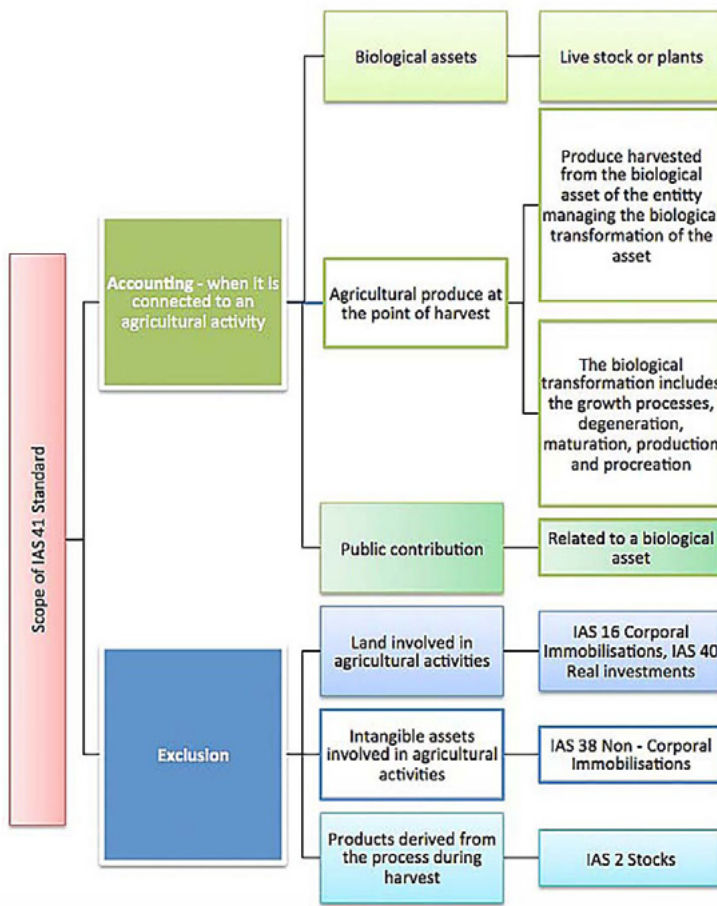


Figure 1: Scope of the IAS 41 standard (adapted from Mates et al., 2015)

Abbildung 1: Der Anwendungsbereich von IAS 41 (verändert nach Mates et al., 2015)

Standard IAS 41 Agriculture introduces fair value valuation of the biological assets in forest enterprises. According to this value, biological assets are valued at first recording and subsequently always at the date of financial statement elaboration. Fair value is reduced by the estimated costs of sale (selling costs)⁴. As a basis for fair value estimation the standard enables to use⁵:

- quoted price on active market – commodity and crop stock market (priority),
- last transaction price, if there have not been rapid economic changes,
- market prices of similar assets, for example for the trees planted in the forest and which are physically attached to land cannot be a separate market, but there may exist a market for the combined assets, that is, for the trees in the forest, raw land, and land improvements, as a package. The company may use information regarding the combined assets to determine fair value for standing timber, for example, to distinguish the value of land from the total forest property thus obtaining the true value of the standing timber. The entity has to find two identical properties with the same timber stock, infrastructure, location, etc.
- sectoral criteria,
- present value of expected net cash flow discounted at the current market rate – in the case no market price or value exists,
- cost price – in exceptional, specific cases when costs may approximate the fair value (for example when the impact of the biological transformation on price is not expected to be material, particularly when the tree crops are young).

The applied method of biological assets valuation subsequently affects the way the disclosure of the enterprises' financial condition and changes in the notes. The Standard also states that the fair value of a biological assets (trees in a plantation forests) can change due to both physical changes and price changes in the market. Forestry is exposed to climatic, disease and other natural risks. If such an event occurs, it must be disclosed in financial statements, for example, an outbreak of a virulent disease, insect damage, storm, etc.

Slovak Accounting Standards do not yet contain the concept of biological assets. Within current assets, it is possible to identify two accounts that are associated with biological assets. It is the item of Property, Perennial crops with fertility period longer than three years and Livestock and draft animals.

The accounting entity accounts for the land to which it has ownership or, in the case of state lands, property rights⁶. This group includes all land, agriculture, forestry, and the other, regardless of the type and method of use. In relation to forestry an import-

⁴Selling costs can include commissions, fees, transfer tax and duties. They cannot include financial cost and income tax.

⁵See also IFRS 13 Fair Value Measurement

⁶This means that if the company manages lands leased from private owners or from another companies, the company does not record them in its balance sheet.

ant provision defines the obligation to include in the cost of land also the value of the purchased forest if bought for the purpose of forest management. Cost of purchased land planted with trees or bushes that are not perennial crops, is the price including the cost of planting.

The group of perennial crops with a fertility period longer than three years includes hop fields, vineyards and orchards. It excludes, however, for example stands of fast-growing trees cultivated for energy purposes (willow, poplar, pine, etc.) and forest stands. The value of forest stands is a part of the entity assets only if it has been included in the purchase price of the land. It is not possible to classify forest stands as perennial crop.

In the case of current assets, biological assets are mentioned only in connection with specific inventory items - animals. According to the Accounting Procedures for Entrepreneurs these are young animals, animals for fattening, flocks of hens, ducks and turkeys, fish, hives and the like. Included here can be bred herd of fallow deer, mouflon and deer when their usefulness in the breeding is less than four years.

For the valuation of biological assets three alternative values can be used:

- acquisition cost,
- conversion cost,
- fair value.

The results of analyses show that the majority of Slovak forest enterprises apply the existing accounting provisions of the Act of Accounting and Accounting Procedures for Entrepreneurs and they account only the value of forest land without taking into account the present value of trees in a plantation forest. In the accounting only the information on already harvested wood can be found (felled trees). Wood for sale is considered as stock – product because it is the subject of own production and is intended for sale outside the accounting entity. The increment of harvested wood is indicated as an increase in current assets in the balance sheet and at the same time an increase of revenues in the income statement. This approach in reporting harvested wood meets the requirements of IAS/IFRS. Standard IAS 41 defines biological assets only until the point of harvest. Felled trees are treated as agricultural produce therefore IAS 2 Inventories or another applicable standard is applied.

Table 4: Recognition and measurement of forest land

Tabelle 4: Berücksichtigung und Bemessung von Waldböden

English equivalent	Managed area of forest land in ha	The value of land in the balance sheet at 31.12.2015 in EUR	Measurement - used principles	Revaluation
Forests of the Slovak republic, state enterprise	893 017	523 041 412	Replacement cost	YES, per year, on the date of financial statements preparation
Military forests and assets, state enterprise	65 431	54 614 513	Acquisition cost	NO
Municipal forest Košice, inc.	19 432	81 126	Acquisition cost	NO
Municipal forest Kremnica, ltd.	9 702	44 764	Acquisition cost	NO
Gelnica Forests, ltd.	4 640	28 479	Acquisition cost	NO
Forest enterprise of the city Zvolen, ltd.	1 560	0	-*	-*
WH Danubius ltd.	3 000	5 238 056	Acquisition cost	NO
Forest Economy Inovec, ltd.	2 234	0	-*	-*
PRO POPULO Poprad, ltd.	12 900	37 803	Acquisition cost	NO
Forest Enterprise of the Technical University in Zvolen	9 724	0	-**	-**

* This enterprise manages forest lands owned by the city. Therefore, according to the Slovak accounting principles, the value of forest lands is not listed in its financial statements.

** This is a special-purpose facility at the Technical University of Zvolen, the value of forest land is presented in the financial statements of the Technical University.

Based on the analysis of forest land value reporting in the financial statements, selected enterprises can be divided into three groups:

1. enterprises reporting forest land value in their balance sheet, the value is updated during time - Forests of the Slovak republic, state enterprise
2. enterprises reporting forest land value in their balance sheet but in historical prices - Military forests and assets, state enterprise, Municipal forest Košice, inc., Municipal forest Kremnica, ltd., Gelnica Forests, ltd., WH Danubius ltd., PRO POPULO Poprad, ltd.
3. enterprises not reporting forest land value in their balance sheet - Forest enterprise of the city Zvolen, ltd., Forest Economy Inovec, ltd., Forest Enterprise of the Technical University in Zvolen

Among the Forests of the Slovak republic, state enterprise accounting practices are closest to the provisions of IAS/IFRS. However, for the valuation of forests stands not fair value is used but only replacement cost. Replacement cost is the price that an entity would pay to replace an existing asset at current market prices with a similar asset. The enterprise made consistent valuation of forest land using replacement cost for the first time in 2010, following an annual revaluation at the balance sheet date. Valuation is made in accordance with the Decree on Determination of General Property Value. Differences that arise from the revaluation will be reflected into the basic (stock) capital base.

The value of the property determined in the Decree on Determination of General Property Value cannot be identified with fair value. It is based on the construction of calculating the forest land value. The calculation includes the following factors:

- species composition - the target tree species
- property value – is the production capacity of forest land
- basic value – stated in the Decree for each species and property value separately in EUR/ha
- location factor – forwarding distance, removal distance
- coefficient of location differentiation - reflects the factors as forest category, level of environmental protection, population density and forest cover of the region.

The value of forest land set in the Decree on Determination of General Property Value does not satisfy real market prices. According to data of the Slovak Static Office in 2015 the cost of forest land on the market ranged from 0.30 to 1.80 EUR per m² (3 000-18 000 per ha). Based on the existing rules, the sale price of forest land encompasses the value of standing trees. This approach is contrary to the requirements of IAS that require the separation of biological assets from bare land. Additionally, there are practical difficulties in valuing biological assets separately from related assets such as the land on which they are located.

Another deviation from the requirements of IAS to valuation of fair value is resulting from the use of the methodology for establishing the general value of forest land under the Decree on Determination of General Property Value. Multiple input variables are the result of a subjective assessment of a certified expert, problematic is also the use of tabulated values in the annex to the decree that remained unchanged since 2008.

The situation is further complicated in meeting the IAS 41 requirements for the biological assets reporting. In our analysis we focused on one part of the property defined as trees in a plantation forest. The analysis of the accounting procedures in selected enterprises showed that apart from the enterprise Forests of SR, none of the entities stated in its financial statements the value of forests. For the entity LESY SR, the value of forests is since 2010 listed on the off-balance accounts. Off-balance sheet monitor evidence which is not accounted in the books, but which is important for the assessment of the entity property situation in terms of economic resources at its disposal (Hajduchova et al., 2014). The value of forests is then not transmitted to the information provided in the balance sheet, it becomes just a part of the notes. The determined value is updated annually on the basis of valuation experts at the National Forest Centre in Zvolen. The value of forest stands and its development from 2010 is shown in Table 5.

The valuation of the analysed biological assets is based on the general value of forest stands established under the guideline set out in the Decree 492/2004 of the Coll. establishing a general value of assets. The measurement reflects the actual characteristics of the stand, as provided by the existing forest management plans: stand age and the planned rotation, actual tree species, the actual standing timber stock, crop density. Mentioned input parameters are supplemented by others as tabulated basic forest stand value (schedules are annexed to the Act), forest stand damage (starting from the level of assimilation organs damage on which basis percentage of damage to standing timber is estimated) and positioning and location differentiation factor (assessment procedure is the same as when determining the general value of land). The advantage of this calculation is that a considerable part of the required inputs can be obtained from existing forest management plans.

As stated in the interview, LESY SR, s.e. strictly keeps the procedures established by the Decree on Determination of General Property Value, and is using historical prices set in 2004 in valuation. The change in the reported value of biological assets do not reflect the price development of raw wood in Slovakia. The enterprise in determining the value of standing trees fails to reflect the fair value, as evidenced from the development of prices of the main timber assortments in Slovakia (Table 6).

Table 5: Indicators of the of biological assets value reported by the Forests of the Slovak republic, state enterprise

Tabelle 5: Indikatoren für den biologischen Vermögenswert; Werte entstammen den Berichten der slowakischen Staatsforstbetriebe.

Year	2009	2010	2011	2012	2013	2014	2015
Managed land in ha	943 2722	938 617	930 249	921 051	904 745	897 883	893 017
The share of managed area on the stand soil in Slovakia	49%	48%	48%	47%	47%	46%	46%
Value of forest stands in EUR		3 490 006 758	3 699 916 599	3 826 497 827	3 842 197 899	3 906 496 350	3 953 635 538
Value in forest land in EUR	1 187 973 816	519 113 517	521 845 358	523 826 634	521 336 665	521 541 375	523 041 412
Wood stock in m ³	223 555 464	224 329 463	224 190 009	221 973 291	222 567 270	220 879 218	n

Note. n – Data not available

Table 6: Annual change in selected indicators of biological assets

Tabelle 6: Jährliche Änderungen ausgewählter Indikatoren für das biologische Vermögen

	2011/2010	2012/2011	2013/2012	2014/2013	2015/2014
Change in the stand value	1,06	1,03	1,00	1,02	1,01
Change of the average wood price*	1,18	1,05	1,04	0,99	1,02
Change in managed area	1,00	0,99	1,00	0,99	-
Change in value for m ³ trees in a plantation forest	1,06	1,04	1,00	1,02	-
Change in value per ha	1,07	1,04	1,02	1,02	-

* Source: Statistical Office of the Slovak republic (http://www.statistics.sk/pls/pls/elisw/casovy_Rad.procDlg.)

4. Discussion

The Slovak accounting standards are converging to a number of issues with IFRS referential. There is a certain number of companies which apply the IFRS, but none of them is a forest enterprise. In connection with the application of international accounting standards IAS/IFRS in terms of forest management, the most important is IAS 41 Agriculture. The most significant change the standard provides is the application of fair value in the valuation of so called biological assets. Fair value valuation seems to be a major barrier to the application of IAS 41 Agriculture in practice of Slovak forest enterprises. In the Slovak accounting system, no attention has been paid to the problems associated with accounting for and the valuing of biological assets.

IAS/IFRS could be presumably applied by the biggest forest enterprise in Slovakia, which is the Forests of the Slovak Republic, state enterprise. The state forest enterprise is the biggest forest land management company, in 2014 they managed 44,59% of the total forest cover in Slovakia and their share on the wood market was 50,8%.

At present, the accounting legislation stipulated in the Act on Accounting applies most of the important procedures defined by IAS/IFRS. Compared to the currently applied procedure of the company's assets disclosure, the change is that the value of forests is taken into account as the biological asset of the company. Applicable accounting legislation only requires the valuation of forest land as a part of the fixed assets. The valuation of forest stands / the growing stock for accounting purposes is not performed. The stocks of wood are recognized in the balance sheet only after logging and only during the storage period.

When applying the provisions of IAS/IFRS standards at forest enterprises, the following major problems can be identified in Slovakia: Forest land owned by the state cannot be sold and cannot be a subject of hedging. The guarantee of future economic benefits is therefore limited because this asset cannot be exchanged for other property, it cannot be accepted by creditors for obligation settlement, and it cannot be split between the company's owners. Due to the limited market with forest land in Slovakia, determining its real market value is problematic.

The final value of forests stands obtained by different methods varies significantly, causing disturbed objective valuation of the enterprise assets as a whole. The best alternative seems to be using the cost prices for young forest stands (approx. until the growth phase coppice) and for older stands the most precise methods is the present value of expected net cash flow. Due to the turbulent environment of the timber market, market valuation of these biological assets can be recommended only for stands ready for logging. There are also some computer – supported valuation procedures based on the single-tree growth simulator, Sibyla, which have been tested for forest insurance purposes (see e.g. Holec and Hanewinkel, 2004, Brunette et al., 2015).

Valuation procedures are still not consistent even in other countries. Grege-Staltmanne (2010) identified a number of differences in estimating of the fair value among

international forestry companies. They interpret the IAS 41 differently. The most common method among forest companies for determining fair value according to IAS 41 is the discounted cash flow approach.

Reporting the value of forestland and forest stands in protective forests and special purpose forests can become a problem, too. The main management goal in these forests is not timber production but ensuring the continuous provision of the protective function. Their total share on the forest land was 28,5% in 2014, which represents a notable area of forests.

There is an increasing prevalence of hurricanes, windbreaks, tornadoes, forest fires and other catastrophes affecting timber markets. Despite the results of some studies (see for example. Alvarez-Diaz et al., 2015) that confirm the impact of damaged timber on timber price, it is necessary to take into account the increasing volume of the incidental felling. Commercial timber production is prone to various risks, those affecting the growth of trees or the timber markets being the most obvious ones. According to Mutenthaler and Sekot (2016) the long production periods (which may well exceed a century) implies great uncertainty in regard to future demand patterns but also in terms of changing site conditions as well as the economic and political framework.

The application of the requirements of IAS 41 demands a lot of extra work and is associated with additional cost. The same conclusions were reached also by Feleaga et al. (2012), Burnside and Schiller (2005) or Elad and Herbohn (2011).

In general, it can be stated that the application of IAS standard 41 in Slovakia will confront forest enterprises with increased demands for compiling financial statements. At the same time, it will improve the overall view of this type of accounting entities. As Forst (2014) states, Slovakia can be integrated into IFRS integrated group, which have greatly expanded the use of IFRS beyond the limited mandate of the IAS Regulation.

5. Conclusions

The process of harmonization simplifies accounting procedures for a wide range of accounting entities. The harmonization of accounting becomes a tool which can achieve cross-country comparability of financial statements in transnational terms. With the accession of the Slovak Republic to the European Union, the country assumed a number of commitments related to the implementation of European law. One of them is the gradual harmonization of accounting. This is carried out by various amendments to the Act on Accounting, which brought national accounting standards closer to international accounting standards IAS/IFRS. However, the problem

remains in the access to the accounting system, which can be characterized as government driven and tax dominated. The high value of the forests of the Slovak forest companies indicate that IAS 41 is a potentially important issue for reporting entities with biological forestry assets, but the implementation of the standards incorporates a number of problems. Tools for evaluation of forest stands are available, it is necessary to evaluate their usability and consistency with IAS/IFRS requirements. Based on the personal interviews, we can say that the forest entities are not yet interested in applying the provisions of IAS 41. Therefore, a wider application among Slovak forest enterprises will be problematic; it will require a change in the overall perception of this type of accounting entities.

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