APPLYING FAIR VALUE TO REFLECT AND TO RECORD BIOLOGICAL ASSETS IN FORESTRY COMPANIES

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SUMMARY
This paper emphasizes the context and the method of fair value measurement according to International Financial Reporting Standards No 13 (IFRS 13). The term "fair value" is a new concept in Vietnam because of the dominant application of historical cost. Vietnam has gradually updated the fair value method, with historical cost method to assess each kind of asset at timing of financial statement. In addition, the historical cost is defined as basic concept in accounting, so that the role of fair value is quite faint. In forestry companies, plantation forest is considered as a special asset due to the value of forest varies as the growth of trees, which results in the using of historical cost approach to reflect and record biological value is unreasonable. Therefore, it is necessary to understand and apply fair value to measure plantation forest's value.
Keywords: Biological assets, financial statement, historical cost, IAS, IFRS 13.

I. INTRODUCTION

The International Financial Reporting Standard 13, which measures fair value, was officially released in early May 2011 and has been affected since 1st, January 2013 by the International Accounting Standards Board (IASB). It is the fact that the historical cost is used widely in Vietnam's accounting system. Nevertheless, in forestry companies, plantation forest is considered as a special asset due to the value of forest varies as the growth of trees, which results in the using of historical cost approach to reflect and to record biological value is unreasonable.

Fair value has been accepted and applied in many countries around the world for a long time. However, in Vietnam, this term is quite new approach and has not clearly defined in national accounting standards yet, resulting in the application of fair value to asset accounting object's value is not popular. In order to follow the International accounting method and match the nature of recording, it is necessary to understand profoundly and then use fair value to estimate plantation forest's value. The objective of the paper is to review the concept, substance, and utilization conditions of fair value according to IFRS 13; and to assess application of the fair value to record and reflect the value of biological assets in forestry companies.

II. METHODOLOGY

The research use sources from both secondary and primary data. The secondary data and information was gathered from several sources: International Accounting Standard; The International Financial Reporting Standard 13; Vietnam National Accounting System; the Circular Nr. 200/TT-BTC/2016 and Accounting Law Nr. 88, 2016. The primary data collected from Song Thao Forestry Company, Ha Hoa district, Phu Tho province as a case study to illustrate the application of fair value in a specific forestry company context.

For analyzing data, synthesis and comparative methods are used byaggregating the concepts of valuation in accounting and defining the process of formation and development of fair value during periods; comparison the different between the application of fair value and historical cost methods in Vietnam accounting system through the case of Song Thao Forestry Company.

III. RESULTS AND DISCUSSION

3.1. Fair value content in the International Financial Reporting Standards 13 (IFRS 13)

3.1.1. The main concepts

"Fair value as the price that would be received to sell an asset or paid to transfer aliability in an orderly transaction between market participants at the measurement date" (Deloitte).

A fair value measurement is for a particular asset or liability. There are several characteristics, decided by market participants at the measurement date, which can affect to assessing process of specific assets or liabilities such as: the condition and location of the subjects, limitations, ect. Thus it is better to consider these features when determining the fair value of such assets or liabilities. The influence of each characteristic to the measurement results are distinct depending on the way it is examined. The calculated subjects at fair value can be independent assets or liabilities or the group of assets or liabilities or even the combination group of them (Deloitte).

Historical cost is the amount of cash or cash equivalents paid or the fair value of asset at the time achieving. This cost is also considered as original cost or actual cost.

Market participants are buyers, sellers in the main market (or favorable markets) of assets or liabilities which are characterized by: (i) Independent with reporting units, so they are not stakeholders; (ii) Understand each other, have reasonable understanding about assets or liabilities and make transactions on available information; (iii) Have sufficient capacity for asset or liability transactions.

Main market (or more favorable market) is where the reporting enterprises are able to sell their assets or pay debts in highest value and flexibility level.

Advantageous market is market in which the reporting companies can sell their assets at maximum price that they can get from them or minimum value that they have to pay for creditors compared to transaction cost in other respective markets.

3.1.2. Valuation method used in identifying fair value

When determining fair value, company assumes that the measurement of assets or liabilities of market participants is based on the market conditions, including risk assumption. Therefore, the fair value of an asset will be related to the company's intention to hold an asset or return or completely pay a liability. Regarding to this issue, IFRS also releases the regulation that it is required for company to identify clearly: (i) What are assets or liabilities needed to determine fair value; (ii) For non-financial assets, it is indispensable for using in highest frequency and whether these assets are used together with the other ones or not; (iii) Voluntary market for assets and liabilities; (iv) Appropriate valuation techniques in determining fair value. These techniques should maximize the utilization of visible relevant inputs as well as minimize the non-visible ones. These inputs should be consistent with the factors, which are used by market participants to estimate assets or liabilities.

IFRS 13 also provides three levels of fair value determination, including:

Level 1: Reference data is the posted listing price of assets or liabilities collected by organizations that are identified in the markets at the measurement date;

Level 2: Reference data can be collected for assets or liabilities directly (market price) or indirectly (derived from market prices), which are different from the listed price in level 1;

Level 3: The reference data is not available at the measurement date. Company has to improve them by using the best available information which may includes its specific data.

IFRS 13 has developed consistently and reduced the complicacy by providing the official concept, combing measurement method of fair value as well as information disclosure required for usage in international financial reporting standard.

According to the International Accounting Standard Board (IASB) and the Financial Accounting Standard Board (FASB), the definition of fair value is based on three methods: Market Approach, Income Approach and Cost Approach.

Market Approach: Observed market price and actual market transaction information will be used to estimate fair value of an asset or liabilities. This method is based on the premise that a market participant will not pay more than the cost of purchasing a similar good.

Income Approach: The fair value of an asset or a liability will be determined by applying several techniques to convert future cash flows into current value (cash flows from the exploitation, utilization of assets or output cash flows to pay debt). The basis of this method is premise that a market participant is willing to pay the present value of asset benefits gained in the future.

Cost Approach: The clarification of the fair value of an asset is derived from analyzing costs incurred to achieve an alternative asset with equivalent production capacity (cash flows is spent to purchase, produce assets). This method usually doesn't put market conditions as its consideration, so it isn't used generally in practice, but in the case to determine the fair value of machinery part or basic construction.

The financial accounting standard also introduces a hierarchy system of fair value, which is used to classify information sources in fair value measurement, both market - based or non - market based. These sources are prioritized according to the principle: Using selling price (the price at which asset is sold-or the bid price) rather than the purchase price (the price at which asset is bought) regardless of whether this asset is considered as long-term investment or immediate sale and using price based on the market, not for a particular subject.

The hierarchy system ranks the quality of information used to identify fair value in descending order of reliability. At level 1, information based on direct observation the transaction of assets and liabilities is high preciseness compared to the least quality at level 3 which the input derived from unobserved data or market assumption. The fair value determined bythis principle is at the highest level of use and the most effective.

3.2. Application of IFRS 13 - Determination fair value to record and reflect the value of biological assets in forestry companies

3.2.1. Biological products in forestry companies

According to International Accounting Standard 41 - Agriculture, the concept of some terms related to biological and agricultural products is as follows:

Agricultural activities are controlled by a company for biological development and harvesting biological products for sale or convert them into agricultural products or as secondary biological assets.

Biological assets are livestock and plants.

Agricultural products are harvested from the biological assets of the company.

Biological transformation includes the process of growth, degradation, production and reproduction that creates qualitative or quantitative changes in biological assets (IASB).

Table 1. Examples of biological assets, agricultural products and products derived from post-harvest processing

Biological assets	Agricultural products	Products derived from post-harvest processing
Tree in plantation forest	Cut trees	Log, saw wood
Rubber plant	Fresh latex	Finished rubber products

3.2.2. Applying fair valueto measure and to record biological assets in forestry companies

Firstly, forest companies should apply fair value method to assess the value of plantation forest in the age of harvesting and record it as a finished product.Specifically, these companies should use this method to estimate the timber volume of each harvested-age forest stand and base on the market value to determine fair value of plantation forest as following:

Fair value= Market price- Reasonable costs for consuming product

When trees reach the age to harvest, accountants consider fair value of plantation forest as a basis to record in the following cases:

1. In cases when exploiting planted forests for sale or as raw materials for the next period, the value of planted forests has not been recorded as initial value. The accountant records initially the forest value (following fair value) when exploiting planted forests with two considerations: (i) Value of plantation forest will be recorded by fair value in case the harvesting of forest to sell or supply as raw materials for next steps; (ii) The difference between fair value and the historical cost of plantation forests is recognized as benefit or loss in the accounting period.

2. For plantations reach the age to be harvested, the accountant records initially the forest value (following fair value) in the date of making balance sheet: (i) The difference between fair value and historical cost is mentioned as benefit or loss in accounting period; (ii) After initial recording, when the trees are harvested to sell, the cost of plantation forest sold will be identified according to fair value at the time of sale; (iii) The difference of fair value at the selling time and initial recording is recorded as benefit or loss in this accounting period.

3. When preparing financial statement, the value of plantation forests, which reach the age of harvesting will be reflected in the inventory value calculated based on fair value. The difference between historical cost and fair value minus the sale expenses will be recorded as benefit or loss from biological assets in the period.

Secondly, regarding to the accounting of the cost of forest tending and protection after original recognition:

For material planted forests, the growing time depends on type of trees and usually is from 3 to 8 years. After that, the trees are matured and reached the age of harvesting. The value of this plantation forest should be considered as finished products and determined according to fair value.

However, plantation forest is biological asset. The value of products change during the time and growing processed of trees. In addition, when trees have matured, if they have not been harvested or sold, the company has to pay costs for forest tending and protection,

although such expenses may not be appropriate for the added value of biological assets. Therefore, this incurred expenseshould be included into production price according to fair value and corresponding to growing value of tress, as described below:

1. Expenses for forest tending and protection in waiting time for sale or harvesting will be accounted into work in progress items;

2. At the end of period, accountant transfers such kind of cost to the value of finished product;

3. The difference between fair value at the time of making financial statement, selling, or harvesting and fair value at the beginning period pluses tending and protection expenses will be recorded as benefit or loss in this period.

Thirdly, regarding to the recognition of plantation forest's value at the time of making accounting balancesheet: (i) In case of plantation forest is below the age of harvesting, the value of plantation forest will be recorded in long-term cost for work in progress item; (ii) In case of plantation forest have reached the age but still not harvested, the value of this forest will be estimated according to fair value and recorded in inventory item of current assets.

3.2.3. Example for the difference between historical cost and fair value in aforestry company

Song Thao Forestry Company is a state-owned enterprise under the Vietnam Paper Corporation. The company's business is afforestation to supply material wood. The total land area of the Company is 2,223.5 ha in Ha Hoa district, Phu Tho province.

Song Thao Forestry Company has aggregation cost situation from 01/01/2015 to 31/12/2015 as follows (Song Thao Forest One Member Limited Company, 2015).

Table 2. Production cost according to cost items (historical cost method) forwhole productionperiod

Year: 2015 *Unit: VND*

Nr.	Indicators	Price	Volume (ha)	Value
Aggregation actual cost				
I	**Cost for work in progress at the beginning**	**20,224,615**	**1,030.70**	**20,845,511,051**
1	Direct material cost	677,939		698,751,815
2	Direct labor cost	7,814,791		8,054,705,470
3	General management cost	2,333,921		2,405,571,975
4	Interest rate	9,397,964		9,686,481,791
II	**Cost for work in progress at the end**	**22,978,113**	**965.8**	**22,192,261,510**
1	Direct material cost	1,446,991		1,397,503,630
2	Direct labor cost	10,248,058		9,897,574,701
3	General management cost	2,966,626		2,865,167,800
4	Interest rate	8,316,438		8,032,015,379
III	**Production cost during period**	**34,067,560**	**139.3**	**4,745,611,108**
1	Direct material cost	5,016,165		698,751,815
2	Direct labor cost	14,040,932		1,955,901,778
3	General management cost	3,299,324		459,595,825
4	Interest rate	11,711,139		1,631,361,690

Nr.	Indicators	Price	Volume (ha)	Value
Cost of plantation forest at the age of harvesting (I+III-II)			**204**	**3,398,860,649**
	Selling price of plantation forest at the age of harvesting (market price)			5,513,400,000
	Cost for sale			1,531,500,000
	Benefit (loss) = Price – cost of production – cost for sale			583,039,351
Expression indicators in Financial statement				
1	Inventory			22,192,261,510
2	Undistributed benefit			583,039,351

Apply historical method to determine the value of plantation forest:

Cost of plantation forest at the age of harvesting = Cost for work in progress at the beginning + Production cost during period - Cost for work in progress at the end

Final benefit is calculated as: Benefit (loss) = Price - Cost - Selling price.

Table 3. Determination the value of plantation forests according to fair value method for whole production period

Year: 2015 *Unit: VND*

Nr.	Indicators	Price	Volume (ha)	Value
I	**Fair value on 01/01/2015**			**19,583,300,000**
1	Fair value at the beginning		1,030.70	19,583,300,000
2	Market price	22,000,000	1,030.70	22,675,400,000
3	Estimated cost for sale	3,000,000	1,030.70	(3,092,100,000)
II	**Fair value on 31/12/2015**			**21,366,300,000**
1	Fair value of plantation forest at the age of harvesting		204.20	3,981,900,000
a	- Market price	27,000,000	204.20	5,513,400,000
b	- Estimated cost for sale	7,500,000	204.20	(1,531,500,000)
2	Fair value of plantation forest under the age of harvesting		965.8	17,384,400,000
a	- Market price	23,000,000	965.8	22,213,400,000
b	- Estimated cost for sale	5,000,000	965.8	(4,829,000,000)
III	**Benefit (Loss) = Fair value at the end - Fair value at the beginning**			**1,783,000,000**
	Expression indicators in Financial statement			
1	Inventory			17,384,400,000
2	Undistributed benefit			**1,783,000,000**

Method to calculate the plantation forest' value according to fair value:

Fair value at the beginning (end) = Market price at the beginning (end) - Estimated cost for sale at the beginning (end)

Benefit (Loss) = Fair value at the end - Fair value at the beginning

Table 4 shows the comparison of the two valuation methodsapplied (historical cost and fair value) in a forestry company.

Table 4. Comparison of the two valuation methods (historical cost and fair value)

Year: 2015 *Unit: VND*

Nr.	Indicators	According to historical cost method	According to fair value method	Comparison
1	Inventory	22,192,261,510	17,384,400,000	(4,807,861,510)
2	Undistributed benefit	583,039,351	1,783,000,000	1,199,960,649

The value of inventory according to fair value decreased by 4,807,861,510 VND, while undistributed benefit increased by 1,199,960,649 VND.

Using example above shows that there are some advantages of applying fair value for recording biological assets in forestry companies: (i) The value of recorded assets is more close to market price, resulting in reflecting the assets' value more accurate. This is also helpful for information users to estimate exactly about company's situation; (ii) Application of fair value method not only expresses the results of business of companies (benefit/loss) more comprehensively but also reflects their added value to operation outputs.

This also indicates that using fair value in asset recording of a forestry company can demonstrate closely to the real value of these assets, from which help investors to assess the financial situation of company appropriately.

IV. CONCLUSION

Fair value has been gradually asserting its advantages in valuation. Using fair value is also supported by IASB, FASB and prepared important facilities for applying widely in different countries. The process of international integration in economics and accounting has put pressure on the research and utilization of fair value in Vietnam accounting system. Nevertheless, it is necessary to have a suitable process to apply this method as essential valuation basis. By carrying out appropriate recommendations synchronously and efficiently in specific periods, it is hopeful that, in the near future, fair value will become main valuation technique in Vietnam accounting system to satisfy the requirement of global integration. Forestry companies should use a fair value method to recognize the value of biological assets as it more reasonable than the historical cost method.

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VẬN DỤNG GIÁ TRỊ HỢP LÝ TRONG PHẢN ÁNH VÀ GHI NHẬN GIÁ TRỊ TÀI SẢN SINH HỌC Ở CÁC CÔNG TY LÂM NGHIỆP

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TÓM TẮT

Bài báo đề cập đến nội dung, phương pháp xác định giá trị hợp lý (GTHL) theo chuẩn mực Báo cáo tài chính quốc tế số 13 (IFRS 13). Khái niệm GTHL là một khái niệm mới tại Việt Nam trong điều kiện áp dụng giá gốc là chủ yếu. Việt Nam đã từng bước được cập nhật theo phương pháp GTHL, kết hợp kế toán theo giá gốc để đánh giá từng loại tài sản tại thời điểm lập báo cáo tài chính. Bên cạnh đó, trong kế toán, giá gốc được quy định là một nguyên tắc cơ bản, vì thế vai trò của GTHL còn khá mờ nhạt. Với công ty lâm nghiệp, tài sản sinh học là cây rừng, rừng trồng là các tài sản đặc biệt, giá trị của các tài sản này thay đổi theo sự sinh trưởng của cây rừng. Áp dụng giá gốc trong việc phản ánh và ghi nhận giá trị tài sản sinh học là không phù hợp. Do vậy tìm hiểu về GTHL và áp dụng GTHL để đánh giá tài sản sinh học là cây rừng, rừng trồng trong các công ty lâm nghiệp hiện nay là cần thiết và phù hợp với thông lệ kế toán quốc tế.

Từ khóa: Báo cáo tài chính, giá gốc, IAS, IFRS 13, sản phẩm sinh học.

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