

ACCOUNTING FOR BIOLOGICAL ASSETS

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Abstract

One of the most important and oldest economic activities is agriculture. The reflection in the accounting system and presenting the information regarding this activity were and are in the attention of the national and international accounting organizations. In comparison with other economic branches, the agricultural activity is characterized by specific activities that require appropriate accounting attitudes.

Keywords: *agriculture, biological assets, bearer plants, accounting treatment*

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1. Introduction

One of the most important and oldest economic activities is the agricultural activity. Accounting and financial information disclosures for this activity were and are a real concern for international and national accounting organizations.

In comparison with other economic branches, the agricultural activity is characterized by specific activities that require appropriate accounting attitudes.

The following tasks are set to achieve the aim of the article: to explain the definition of biological assets and its classification attributes; to study theoretical aspects of biological assets admission and evaluation methods; to explain the applied methods of biological assets evaluation in agricultural enterprises of Romania.

The research methods: The method of logical analysis and methods of comparison and generalization are used in the article. The research is done on legislative and regulatory enactments.

IAS 41 - AGRICULTURE

The International Accounting Standard IAS 41 – Agriculture prescribes accounting treatment, financial sheet drawing and information related to biological assets and agricultural activities. This standard does not treat the processing of produce obtained after harvesting, because this process is described by IAS 2 – Inventories.

Agricultural activity is represented by the management by an entity of the biological transformation and harvest of biological assets for sale or for conversion into agricultural produce or into additional biological assets.

The agricultural activity covers a diverse range of activities; for example: raising livestock, forestry, annual or perennial cropping, cultivating orchards and plantations, floriculture, and aquaculture (including fish farming). Certain common features exist within this diversity:

(a) *Capability to change*. Living animals and plants are capable of biological transformation;

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

(c) *Measurement of change*. The change in quality (for example: genetic merit, density, ripeness, fat cover, protein content, and fiber strength) or quantity (for example: progeny, weight, cubic meters, fiber length or diameter, and number of buds) brought about by biological transformation or harvest is measured and monitored as a routine management function.

The agricultural produce is the harvested product of the entity's biological assets.

The biological assets are living animals or plants who change qualitatively and quantitatively. These changes can be measured, assessed and monitored.

Biological transformation results in: growth (an improvement in quality or increase in quantity of animals or plants); deterioration in quality or decrease in quantity of animals or plants; creation of additional animals or plants; harvesting of agricultural produce.

A *group of biological assets* is an aggregation of similar living animals or plants.

Harvest is the detachment of produce from a biological asset or the cessation of a biological asset's life processes.

Costs to sell are represented by the incremental costs directly attributable to the disposal of an asset, excluding finance costs and income taxes.

According to IAS 41, an entity shall recognize a biological asset or agricultural produce when, and only when three conditions are met: 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.

Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

The fair value of an asset is based on its present location and condition. As a result, for example, the fair value of cattle at a farm is the price for the cattle in the relevant market minus the transport and other costs of getting the cattle to that market.

The problems in the assessment of the biological assets are related to the fact that agriculture depends on agro-climatic conditions and territorial remoteness of an enterprise from the sales markets to a great extent. This is especially acute when estimating long-term biological assets, the fair value of which has been created in a longer period of time in changeable market conditions. The value of perennial plants and food-producing animals considerably changes, depending on their location zones. This is closely related to the changes in the risk degree and production costs. It should be noted that with time, the initial plant and animal values differ from the values of similar physically young and more productive biological assets (Jesemčika, 2010).

The standard IAS 41 presumes that the assets fair value can be reliably determined during its whole lifetime in a company. It admits the only exception at the primary charge of an asset, when the price set by the market is not available and the alternative fair value estimations are apparently unreliable. In this case, it is possible to value biological assets by the purchase price cut by depreciation reserves and depreciation losses. (Sedláček J., 2010)

The fair value should reflect a common market, where a trade-willing buyer and seller can make deals (Ryska and Valder 2006). The listed price at an active market is a suitable base to determine the fair value. If an enterprise has access to several markets, it uses the price of a market that is relevant for the enterprise (the market which is intended to be used by the enterprise). If there is no active market, the company uses some of the below mentioned possibilities for the fair value determination:

- the last reached market price of a transaction if there has been no significant economic changes since the transaction date until the balancing day,
- market prices of similar assets with an adjustment considering differences (Damodaran 2001),
- sector criteria (benchmark), e.g. expressing the orchard's value by the quantity of the harvested fruit (measured by the amount of crates or baskets) or by the area in hectares; cattle values measured through the kilograms of meat,
- the present value of the anticipated future net cash flow of a particular asset discounted by the current market pre-tax interest rate (if the price set by the market is not available for a particular biological asset),
- expended primary purchase costs, if a small part of the biological transformation has proceeded since the costs were expended (e.g. fruit tree seedling planted out just before the balancing day) or a non-significant influence of the biological transformation into the price is assumed (e.g. in the early growth stages of a pine tree grown in a production cycle of 30 years),
- as far as the combined assets are concerned (e.g. a tree in a cultivated forest), the biological asset's fair value is found out by subtracting the fallow land fair value from the combined asset fair value (trees with a piece of land). (Sedláček J., 2010)

The purchase price or the factory costs cut by the depreciation reserves and depreciation losses can be used for the biological assets valuation in the only case – at their primary charge, when the price set by the market is not available and the alternative fair value estimations are apparently unreliable. Pursuant to the standard IAS 41, the agricultural production at harvest is always reliably measurable; hence it is evaluated by the fair value cut by the estimated retail costs at all events. (Sedláček J., 2010)

The gain on initial recognition of biological assets at fair value minus costs to sell, and changes in fair value minus costs to sell of biological assets during a period, are included in profit or loss.

If a biological asset does not have a quoted market price in an active market it must be measured at a cost less accumulated depreciation and impairment losses.

If circumstances change and fair value becomes reliably measurable, IAS 41 requires a switch to fair value less costs to sell.

BEARER PLANTS

In June 2014 the International Accounting Standard Board amended IAS 41 and IAS 16. Bearer plants were excluded from the scope of IAS 41 which applied to the annual periods starting from or after January 2016.

A *bearer plant* is a living plant that:

- is used in the production or supply of an agricultural produce;
- is expected to bear produce for more than one period; and
- has a remote likelihood of being sold as agricultural produce, except for incidental scrap sales.

Bearer plants will now be scoped in and will be subjected to all the requirements of IAS 16 instead of IAS 41. The agricultural produce of biological assets will continue to be accounted for under IAS 41.

IAS 16 requires elements of cost of Property, plants and equipment (PPE) to be measured at cost at initial recognition. As such, all costs incurred before maturity of bearer plants are accumulated, just like a self-constructed PPE, until the bearer plants become available for use. Subsequent to initial recognition, an entity has the option to measure bearer plants under either the cost or revaluation model. Under the cost model of IAS 16, the progressive decline in the earnings potential of a bearer plant is similar to other depreciable assets (e.g. buildings, machinery and equipment, etc.). Annual crops and other plants held solely for harvesting as agricultural produce are not expected to meet the definition of bearer plants. Plants that have dual use, that is, both bearing produce and the plant itself being sold as either a living plant or agricultural produce, also are not expected to meet the definition of a bearer plant. Moreover, bearer animals are excluded in the amendments to IAS 16. This means that the accounting for bearer animals is still under IAS 41. (Reginaldo B. Mundo, 2014)

2. Biological assets in romanian accounting system

Until 2014 the Romanian accounting system obliged the distinct reflection of the biological assets in the annual financial statements only for the listed companies.

OMPF 1802 that appeared in December 2014 and that takes effect starting from the financial year 2015 transposes into the national law several IFRS standards to the existing ones, including IAS 41 Agriculture. So starting with the financial year 2015, all companies, regardless of their size or their listing on a stock exchange will follow in accounting and report separately in the annual financial statements, their biological assets.

They appear in the annual financial statements in the category tangible assets named as productive biological assets. *The productive biological assets* (OMFP 1802) are any assets other than the biological assets such as stocks (eg dairy animals, grape-vines, fruit trees, and trees from which it is obtained firewood, but which are not cut).The productive biological assets are not agricultural produce but, rather, are self-regenerating assets.

The recognition of biological assets is made according to the criteria set out in IFRS, respectively the control criterion, the probability of future economic benefits and the possibility of their credible evaluation.

The productive biological assets are evaluated according to the general rules applicable to the tangible assets, meaning at cost minus amortization minus depreciation or at fair value. Sometimes, the fair value can be approximated by the cost, in particular if: there have been few biological transformations from the moment of the initial costs incurred (for example, for the fruit tree seedlings planted immediately prior to the end of the reporting period); or it is not expected that the biological transformation impact over the price to be significant.

In order to reflect the biological assets in the accounting system, the order introduces a series of new accounts: Account 217 – Productive biological assets, 2817 - Depreciation of productive biological assets, 2917 – Adjusting for the productive biological assets.

Companies that until 2014 had biological assets reflected in the account 2134 Animals and plantations will proceed to their restatement and transfer into the biological assets account.

a) The recognition of biological assets:

217 Productive

2134 Animals

biological assets

and plantations

b) Transfer related depreciation:

2813 Amortization of
animals and plantations
/analytically distinct

2817 Amortization
of the productive
biological assets

c) Transfer adjustments for the depreciation, if there are any:

2913 Adjustments for
the depreciation of animals
plantations / analytically
distinct

2917 Adjustments
for the depreciation
productive biological
assets

The recognition of the biological assets acquired (valued at acquisition cost):

217 Productive
biological assets

404 Suppliers of
property

The recognition of biological assets made from own production (valued at cost of production):

217 Productive
biological assets

231 Fixed assets
under execution

Registering the recognition of the biological assets from their own production is performed after they were previously recorded (recognized) the costs of the production.

6xx Spending accounts = 3xx Inventories
or
6xx Spending accounts = 4xx Debt accounts

And it was registered the current production

231 Fixed assets
under execution

722 Revenues
from the production
of tangible assets

In the course of their useful life it is proceeding to their damping:
6811 Exploitation expenses = 2817 Amortization of
regarding the amortization of fixed assets productive biological assets

Example: Company A plants in March “N” a number of vine for which are performed and recorded the expenses:

- 1) Purchase and planting of vines in March year N 50.000 lei
- 2) Fertilizers 4.000 lei
- 3) Monthly amortization of agricultural machinery 2.000 lei
- 4) Monthly salaries of staff 4.800 lei
- 5) Contributions: CAS 15.8%, health fund 5.2% ; unemployment fund 0.5% ; contribution for holidays and health insurance benefits 0.85%; contribution to the guarantee fund of outstanding claims 0.25 % ; insurance contribution for work accidents and occupational diseases 30 lei.
- 6) Jobs provided by third parties 2.000 lei

For the coming months April N - August N the total expenditure is of 70,000 lei. The vine is depreciated over 20 years.

Solution:

a) The acquisition of vine:

50.000 lei	301 Raw materials	401 Suppliers	50.000 lei
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b) Planting:

50.000 lei	601 Expenses with raw materials	301 Raw materials	50.000 lei
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c) The acquisition of fertilizer:

4.000 lei	302 Raw materials	401 Suppliers	4.000 lei
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d) Fertilizer consumption:

4.000 lei	602 Expenditure on consumable materials	302 Consumable materials	4.000 lei
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e) Monthly amortization of agricultural machinery:

2.000 lei	6811 Exploitation expenses regarding the amortization of	281 Depreciation of tangible assets	2.000 lei
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fixed assets

f) Salaries:

4.800 lei	641	421 Staff,	4.800 lei
	Expenditure on	due salaries	
	staff salaries		

g) Contributions related to salaries:

g1) CAS = 4.800 lei x 15,8% = 758,4 lei:

758,4 lei	6451	4311 Social	758,4 lei
	Expenditures on social	security contribution	
	security contribution	unit	
	unit		

g2) Health Fund: 4.800 lei x 5,2% = 249,6 lei:

249,6 lei	6453	4313 Employer	249,6 lei
	Expenditure	contribution for	
	concerning the	health insurance	
	employer's		
	contribution for health		
	insurance		

g3) Unemployment fund: 4.800 lei x 0,5% = 24 lei:

24 lei	6452 Expenditure	4371 Unit	24 lei
	concerning the unit	contribution to th	
	contribution to the	unemployment fu:	
	unemployment fund		

g4) Contribution for holidays and health insurance benefits: 4.800 lei x 0,85% = 40,8 lei:

40,8 lei	6453 Expenditure	4313 Employer	40,8 lei
	concerning the	contribution for health	
	employer's contribution	insurance / analytical	
	for health insurance		

g5) Contribution to the guarantee fund of of wage claims: 4.800 lei x 0,25% = 12 lei

12 lei	635 Other taxes,	447 Special	12 lei
	duties and similar	funds, taxes and	
	expenses	similar expenses	

g6) Insurance contribution for work accidents and occupational diseases:

30 lei	6451 Expenses	4311 The	30 lei
	related to the contribution	contribution of the	
	of the unit to social	unit at the social	

	insurances	security / analytical	
h) Jobs provided by third parties:			
2.000 lei	628 Other expenses with third party services	401 Suppliers	2.000 lei

i) At 31.03. N registering the current production = 50.000 lei + 4.000 lei + 2.000 lei + 4.800 lei + 758,4 lei + 246,9 lei + 24 lei + 40,8 lei + 12 lei + 30 lei + 2.000 lei = 63.912,1lei

63.912,1 lei	231 Tangible assets under execution	722 Revenues from the production of tangible assets	63.912,1 lei
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For the coming months April N - August N the total expenditure of 70,000 lei are recognized similar between March N, by their nature (similar accounting records with the points b-h). The same applies to the recognition of current production (similar with the point i).

j) In August N it is recognized the vine plantation at a cost of 63.912,1 lei + 70.000 lei = 133.912,1 lei:

133.912,1 lei	217 Productive biological assets	231 Fixed assets under execution	133.912,1 lei
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j) Monthly amortization starting from September N: 133.912,1 lei/ 240 months = 557,96 lei:

557,96 lei	6811 Exploitation expenses concerning the amortization of fixed assets	2817 The amortization of the productive biological assets	557,96 lei
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The increase compared to the net accounting value, resulting from the revaluation of the productive biological assets:

- a) if there was no decrease previously recognized as an expense related to the revalued tangible fixed assets is recorded in the account 105 Revaluation reserves
- b) if there existed a previous decrease recognized as an expense it is recorded as income to offset that decrease in the account 755 Income from the revaluation of tangible assets

Decreases compared to the net accounting value resulting from the revaluation of the productive biological assets:

- a) reduce the previously recorded revaluation reserves (in the credit balance limit of the revaluation reserve, account 105);
- b) is recognized as an expense with the full amount of impairment, when the revaluation reserve is not recorded an amount regarding that asset (655 Expenses from the revaluation of tangible assets).

3. References

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