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SPECIFICS OF ACCOUNTING IN FORESTRY[1]

The research is focuses on comparison of used measurements and accounting models in this branch and their critical analysis (particularly aimed to requirements of IAS 41) and on proposal of possible way to solving opened problems. Main proposed solution in this paper is the measurement model based on incurred cost to culture with recognition of gains proportionally to realized biological transformation, if is reliably measurable. This gains recognition should come out from specific terms in an entity (unlike IAS 41) and pay regard to likelihood of variable moments of harvest

Introduction – research aim. Forestry is a branch that has a lot of specifics. The specifics of forestry production bring many theoretical questions in accounting. Specifics arise not only from biological nature of production and also from a long-term production cycle and risks which are connected with this branch.

For accounting purpose it is necessary differentiate between a forest which is purposefully grown, and a forest which is a natural resource and is only exploited. For example, in some countries are forests steadily only cut down (cutting down of tropical rain forests). Purposeful planting of a forest is considered to be a part of agricultural activity. The mere exploitation of a natural source can be compared to mining activity. The following research will focus on forestry as a purposeful activity.

Particular national approaches to measurement, recognition and presentation of forests in accounting are very different and difficult to compare. Accounting treatments of this segment of assets are in many cases questionable also from the point of view of keeping generally accepted accounting principles (as accrual basis and concept of matching costs to revenues).

The research is focused on comparison of currently used measurement models and accounting models in this branch and their critical analysis (particularly aimed at the requirements of IAS 41) and on the proposal of possible ways how to solve these issues.

Essentials criteria for the assessment of these models will be:

– preservation of the concept of matching costs with revenues,

– provision of information necessary for periodical assessment of an entity's performance.

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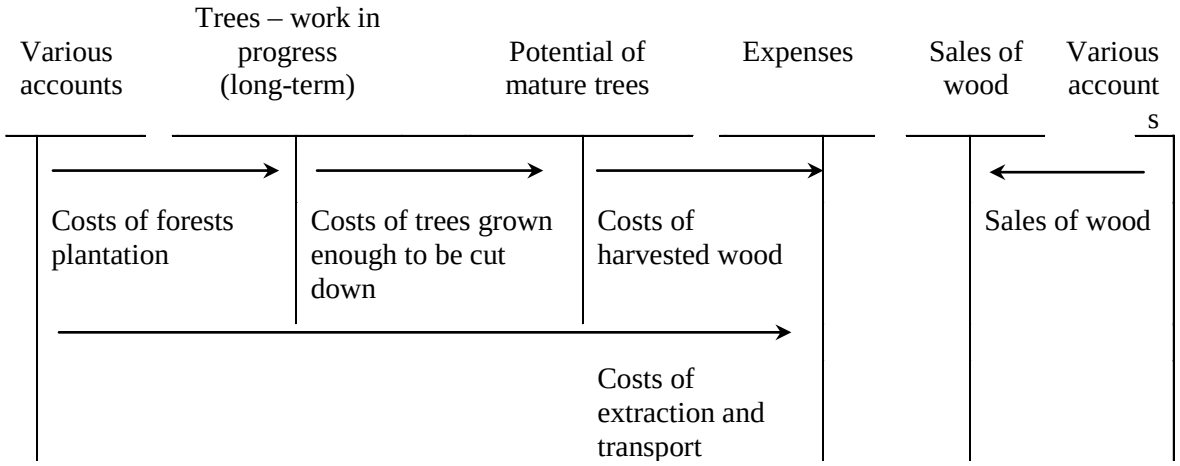
Accounting models. accounting models based on historical cost



Issues connected with using of this model:

1. Assessment of a period when a sylvan growth becomes a potential of mature trees.

This issue is connected with technology of forest's growing. The first trees can be exploited after ten years of growing (as Christmas trees). The following exploitation of trees occurs when the forest is being cultivated. This exploitation does not necessarily bring profit. The potential of mature trees is not created during this period.

The potential of mature trees is formed, for example, after sixty years of growth. The point of exploitation is influenced either:

a) by demand of customers according to actual contracts – wood is extracted for the contracts to be fulfilled; or

b) in case the wood is not grown to satisfy certain qualitative requirements of customers, the wood is grown as common raw material for a lot of manufacturing industries and the point of extraction is determined by general parameters, and by the intention of corporate management.

2. Relevance of measurement of work in progress and the potential of mature trees.

The main problem is the historical cost valuation which leads (in comparison with current value) to permanent strong undervaluation of carrying amount of these assets.

Historical cost model does not give a true picture of forest value because historical costs are not able to express the results of biological transformation (e.g. growth) which is the main factor of the increase in the value of forest.

3. Information about performance of forestry entity.

No income might be reported until first harvest and sale of wood (perhaps 60 years) in a plantation forestry entity using a historical cost accounting model in an extreme case and then, for example, during one year the wood is extracted and the whole revenue is recognised in this period. Information about the performance of the entity is from this point of view insufficient, particularly in the cases when an entity

farms on sylvan growth with trees of only equal age. But these conditions of production are economically unsustainable. It is possible to run that business only when the entity has other segments which produce revenue regularly, or in the case when the entity receives, for example, government grant for forest's plantation. Another way of financing is difficult to achieve for forestry farms. That is the reason why sylvan farming is purposely organised to reach equal amount of revenues in each accounting period. The potential of mature trees is regularly extracted and restored. As a consequence, the potential remains constant. The measurement of the whole entity's performance reaches in these cases more satisfactory results. Nevertheless, this situation changes nothing on the primary restriction of the application of historical cost model used in biological assets measurement.

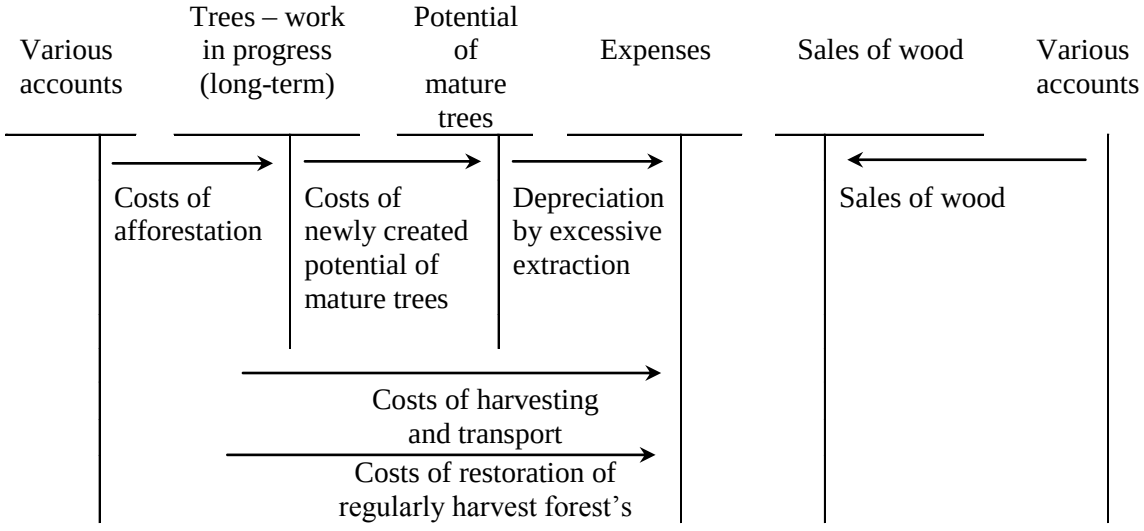
Modification of historical cost model. The modification of historical cost model is based on the existence of a constant potential of mature trees as a component of assets of an entity. In case a potential of mature trees is being created, an entity capitalizes costs of its creation as a work in progress. The capitalisation of costs ceases at the moment when a forest is prepared regular harvesting (cutting down).

As soon as a potential of mature trees is created it should be maintained in constant amount. Costs of restoring of the parts regularly harvested are invoiced as expenses of current period. But if a woodcutting exceeds given limits, then the potential of mature trees depreciates.

The decrease in carrying amount of the potential of mature trees occurs only when the amount of extracted trees exceeds the estimate growth of trees which were to be harvested and sold. In other words, if the harvest exceeds presupposed limits..

It is clear from the above given characteristic of this accounting model that this accounting treatment silently compensates an increase in the value of forest (as a consequence of biological transformation – growth) that is elusive in historical cost model by insufficient decreasing of carrying amount of the mature trees potential at the harvest time.

Modification of historical cost model



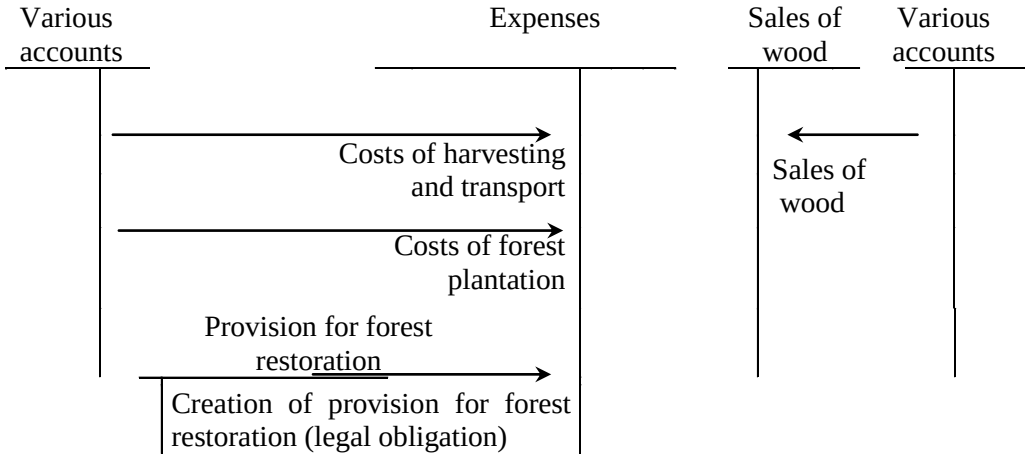
Issues connected with using of this model:

1. This system is inaccurate from the point of view of preservation of matching concept of costs with revenues. Expenses of extraction and costs of restoration of regularly harvested forest's parts are compared. But costs of one harvested tree are higher than costs of planting a new tree.

2. An expenses increase only by depreciation of excessive future extraction of wood is also questionable. Future extraction can be founded on very heterogenuos basis. Harvested trees can be of different age. The age of cutting down trees is influenced by the requirements of customers and by a lot of other factors. It is very difficult to determine an optimal moment for harvesting and, moreover, the expected extraction of trees is a subjective assessment. At the same time the growing of trees to suitable age of harvesting is not gradual and even. This fact complicates annual estimate even further.

3. Problems of previous model continue.

Model based on continual preserving of constant potential of mature trees. This model is based, better to say can work, only if an entity keeps constant potential of mature trees. The model is based on continual extraction and restoration of forest land where all evolution stages exist simultaneously. It is obvious that this model in fact reflects optimal conditions of forest's farming on large areas. But this condition of continual production can never be absolutely reached.



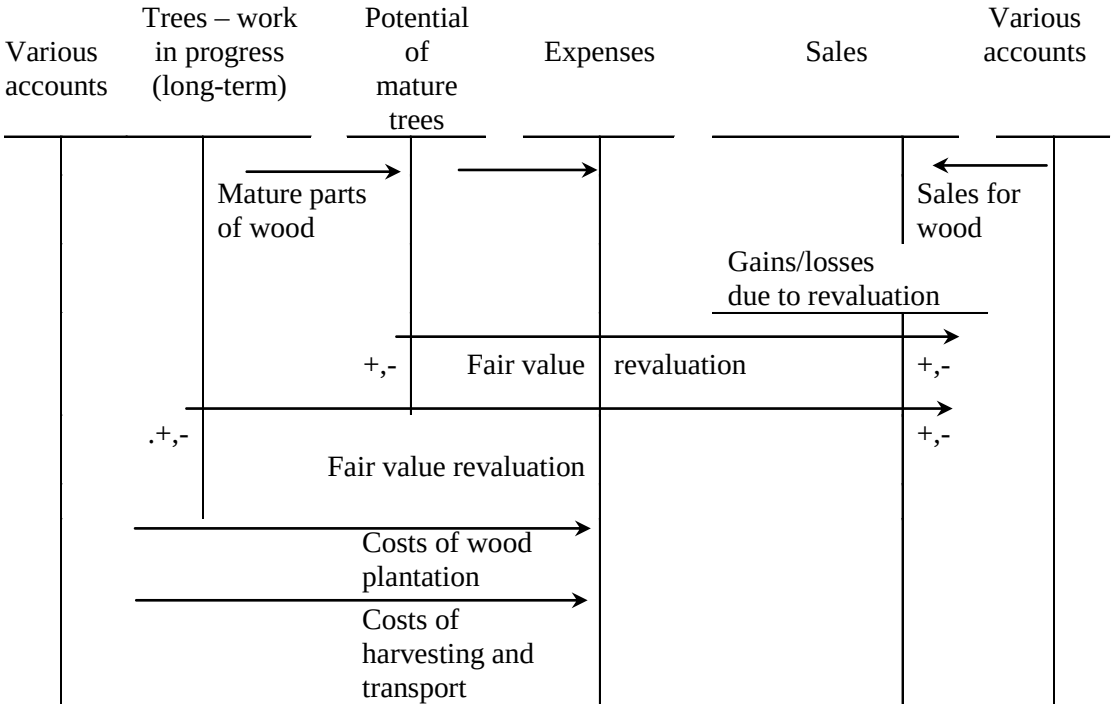
Issues connected with using of this model:

1. The value of forest is not recorded in accounting. According to my opinion this model is the worst of all.

2. This model is based on condition that a potential of mature trees is constant. Critical misrepresentation of entity's results and performance in case of divergences in extraction is sure to occur.

Model based on measurement of sylvan growth at fair value. This model fulfils the requirements of IAS 41 – Agriculture. IAS 41 demands the measurement of biological assets at fair value less estimated point-of-sale costs. This

accounting treatment enables to catch the consequences of biological transformation – growth – of trees during an accounting period. Fair value is ideally determined as a quoted price in an active market. Fair value reflects the increase of forest's value by increasing its market value.



It is obvious that this model enables to reflect the value of forest, including the value caused by biological transformation thought the changes in the fair value of sylvan growth at the market that is the difference in comparison with all the above described models.

Issues connected with using of this model:

1. The main problem is frequent absence of an active market. Also single selling of forest is an exceptional case. That is the reason for not having relevant information about the market price achieved lately.

In such a case IAS 41 recommends the following treatment:

a) Set fair value of forest through market value of wood.

This method can be used for mature trees. The volume of wood mature for harvesting can be estimated through selective measurement. But the value of wood cannot be assessed with sufficient accuracy. The value of wood is depended on its quality and this quality cannot be exactly assessed from a grown tree (the differences can be significant). Other complications are the character of sylvan growth. This method is very painstaking and not exact in a mixed forest. This measurement method is misguiding in the case of small immature trees.

b) Setting of forest's fair value through the present value of expected net cash flows.

IAS 41 requires: "The objective of calculation of the present value of expected net cash flows is to determine the fair value of a biological asset in its present location and condition. The present condition of a biological asset excludes any increases in value from additional biological transformation." This requirement is rational from the point of view of functionality of this measurement model, and progressive accrual of expected cash flow during the time, but this method partly misses pragmatic logic.

Illustration:

When I am buying a 50 year old tree which will have been in optimal harvesting age in ten years, and the plantation costs of the tree during this time will be negligible, then I will be willing to pay the price which will be derived form the future relatively credibly assessable value of a 60 year old tree. This expected future cash flow will be discounted to determine how much I am willing to pay now.

It is clear that this assessment cannot bring adequate results in the fair value assessment. The younger the sylvan growth is, the more questionable the requirement IAS 41 not including the future changes will be..

c) IAS 41 permits using historical costs in the following circumstances: "Cost may sometimes approximate fair value, particularly when:

– little biological transformation has taken place since initial cost incurrence; or

– the impact of biological transformation on price is not expected to be material."

Conclusion. The comparison of the above outlined models can't result in the following conclusions:

1. The accounting model used in forestry seems to have to be always based on the combination of historical cost and fair value measurement models, if this model is to provide relevant information for the valuation of entity's performance.

2. The accounting model should be based on individual stages of forest's evolution within the whole entity.

It means.

a) If an entity has not created the potential of mature trees, it means that its forest is only being founded; the following steps need to taken:

– I. The first phase (3 - 5 years)

In this period, relatively the highest costs of the whole amount of growing costs are spent. The forest should be measured at historical costs in this period.

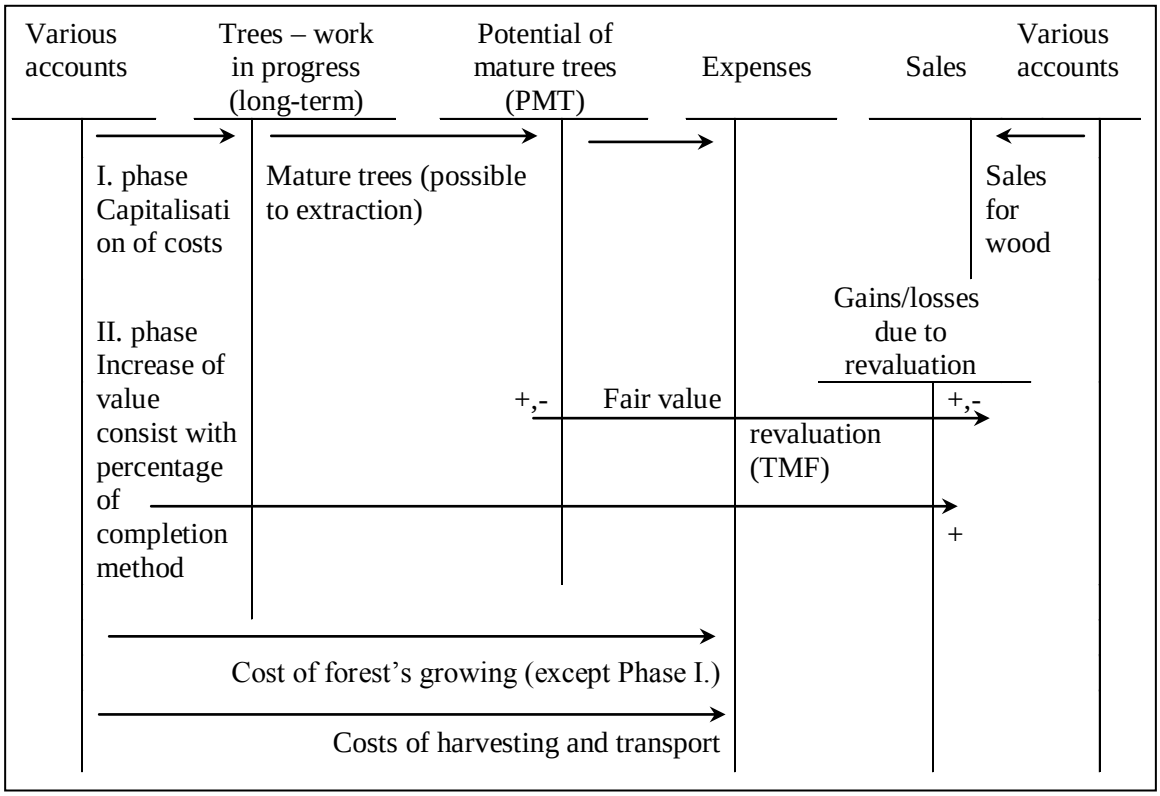
– II. The second phase

The forest is growing and, usually no material costs are spent in this period, the point is to be determinated in which an entity will be able to estimate the whole future benefit from the forest. The particular character of sylvan growth should be taken into account in this point's determination. The core problem is estimate risks connected with the forest growth. This future benefit can be allocated adequately to individual accounting periods according to the percentage of completion method. The

determination of the percentage of completion can be assessed on the recognition of forest's growing technology and specify by selective measurement. An entity should refine this future benefit estimate from the forest with regard to actual conditions at each accounting period.

c) Fair value measurement can be used if the potential of mature trees is created. The fair value measurement allows reflecting the future growth of mature trees.

Proposed accounting model



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