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10. March 2010

Online at <https://mpa.ub.uni-muenchen.de/21327/>

MPRA Paper No. 21327, posted 22. March 2010 00:50 UTC

# **Possibilities for the improvement of cost calculation in forestry through the introduction of the standard-cost method**

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## **Abstract**

*The book-keeping of the administration must insure the rapid acquiring of exact, viable, clear figures adapted to different aspects of the current administration. The wise use and the timely transmission of this information will allow the management of the Forrest District to react to the problems that might appear in the shortest time possible. Furthermore, it will allow for the formulation of a diagnosis as well as for the elaboration of a coherent set of rules which can facilitate a long-lasting and efficient administration of the forests the district has in its jurisdiction.*

*The necessity of the lasting reduction of the costs for the insurance of economic efficiency at the level of the Forrest District, together with the demands necessary for the better management of the units in the actual conditions, impose the improvement of the costs calculation. The purpose is to create a stronger role for these methods to be able to make decisions concerning the rational use of the production factors, the improvement of the technological processes and the adaptation of an efficient organisational structure.*

***Keywords: management of the Forrest District, cost calculation, reduction of the costs, standard – cost method***

The actual development of this activity in forestry, as well as its management, draw ever more attention onto the necessity of anticipating production cost, cost evolution and to compare them to the pre-established standards of the Forestry Overheads, standards that are taken into consideration when organizing wood biddings, to operationally monitor the expenses that have been made, to know the proportion and structure of expenses, to find out in the shortest possible time about the variations from the established standard level, the causes that led to these variations, and last but not least their location.

The accounting management, not accidentally named so, must rapidly obtain exact, reliable, clear data, adapted to different aspects of the current management. Rational employment, as well as a timely transmission of these data will allow the forestry overseers to rapidly react to the problems, formulate a diagnosis, and elaborate a series of coherent expectations that will allow a durable and also efficient management of forests under supervision<sup>1</sup>.

For these necessities, traditional cost-determining methods, including the global method used in forestry for determining and calculating costs, cannot meet the actual need of obtaining modern management, thus imposing their adaptation and refinement.

A drawback concerning these classic methods is the huge workload, as they need two types of calculations concerning production cost: pre-calculation and post-calculation. Pre-calculations are made before starting the productive process by elaborating the expense budget needed for the forestry unit and the cost budget for the actual wood destined to be ingathered according to the official arrangement and consumption standard specifications, the exploitation budget for the lots scheduled to be exploited in the forest range, as well as the total cost budget sorted on different types of timber. The process of elaborating these budgets starts with the completion of pre-mentioned tasks and actions.

Post-calculations occur at the end of the productive process. In forestry, as I have aforementioned, the production process runs its course in a year and envisages all commanding and maintenance activities involving trees necessary for obtaining timber, as they were pre-established. Thus, this kind of calculations are made at the end of each month, partial post-calculations, using the cumulated global calculus. This is how post-calculations involving the exploitation of parquetry are made at the end of timber exploitation and after the types of timber are made according to the exploitation program.

Even if the actual determined cost has a high accuracy rate and is sufficiently detailed, this cannot compensate for the delay it has caused, as modern administration requires advisable and pertinent data as opposed to the exact and tardy ones.

Traditional calculating methods, including the global calculating method used in forestry as well, allow periodical determination of the actual complete cost, but only after the production cycle has ended. Thus, the data obtained with the help of these classic methods have a historical trademark and can be used for future activity orientation.

Although an operational pursue of the main productive discharges through the aid of discharge standard specifications is done, this is actually limited to quantity and normally takes place so as to give a statistic report and obtain data for future activity planning period and not so much for informing the controlling

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<sup>1</sup> Tenovici Cristina Otilia (2007) *Designing the Informatics System for the Calculation and Analysis of Forestry Costs*, Universitaria Publishing House, Craiova, Romania, p.18

centres that are fit to make the decisions. This pursue is incomplete as, on one hand it does not constitute the main priority of calculation staff and is usually done by those who have technical and economic attributes and, on the other hand, the data do not have a numerical form, through the aid of money, it is just quantity.

Furthermore, another disadvantage of these classic methods of determining cost is the impossibility of assuring an operational and systematic control of exploitation expenses that can be found within cost, the whole work involving the acquisition and the allocation of these expenses sighting out the establishment of the actual cost. This determination at the end of the production cycle does not provide in an operational mode the information concerning the deviations from the standard, deviations that will allow the board to decide accordingly so as to eliminate any deficiencies.

In order to establish deviations from the initial standard, it is necessary to create a series of extra-accounting situations, as our accounting system and the actual calculation method cannot license this directly. The deviations determined by comparing the actual cost to the pre-established one, be it savings, be it overhauls from the standard, are conveyed in actual size, although without the possibility of identifying the exact places and factors that generated them, nor identifying the people responsible. In order to ultimately identify these abnormalities, further calculus will be made which involves an even greater workload and, most of the times, the impossibility to assure an exact piece of information, be it ulterior to the end of the production cycle.

The inventory data concerning expenses is not, according to these classic methods, conceived by the manner of instantaneous pursuit of expenses and deviation, their analysis is, more than once, belated and the information delivered cannot be used in the decision process, nor can it be used for the adjusting of the productive activity during its course of action, but only in future previous-calculations.

Thus, it is not only the necessity of permanent reduction of costs in order to ensure the economic efficiency concerning the forest range and, even more, the Forestry Overheads but it is also the requirements imposed but the units' management for market conditions that command the perfecting of cost calculation methods. Through this, the role of these methods for underlying current and future decisions concerning rational use of production factors (the forest seen from an economic perspective, but also through its social and ecologic ones as well), perfecting technological processes, adapting to an organizing structure.

The method that can please the requirements of the operational management in forestry, taking into account the deficiencies of traditional calculus methods that were previously presented as well as the need to take full advantage of data necessary to the management of production processes, to the

increase in information availability concerning costs so as to determine some efficiency markers that are needed by the scientific management of the economic activity involving the forest region, is the standard cost method.

The advantages that may be obtained by applying the standard-cost method consist of <sup>2</sup>:

1. an operational control is assured for production costs, as the data offered involving the deviations from constant standard costs are obtained very often, although having an operational and favourable nature, which allows the licensing of decisions during the actual production process and not only at the end of it, as it was with the traditional methods.
2. it consists of an efficient means of preventively bringing bear on production expenses, by the pre-emptive set-up of some standards for rational use of material, salaries and other means for each and every job.
3. by comparing the actual cost with the pre-established one, one can establish not only the proportion of savings or overhauls, but one can also find out what were the causes and those responsible for these deviations, deviations that can be rigorously analyzed, be it by cost or by quantity.
4. standard-costs are pre-calculated production costs, that have rigorous scientific basis and are considered to be real, normal costs; any deviation from this is considered to be a standard deviation and will affect the financial outcomes of the unit.
5. the lack of a gauge can no longer be evoked when comparing actual production costs that will allow us to distinguish what is normal (by applying traditional calculating methods the reference elements used in comparing the actual costs could have contained some deficiencies of the activity in some unknown proportion), which then allows control over costs.
6. the standard cost method includes in its line of work adequate systems of tracking production costs and reporting any deviations from the pre-calculated cost, as opposed to the classic methods of calculating costs that do not organically include these systems, leaving their organization to each and every company.
7. the standard cost is considered to be a normal production cost, the calculus of the actual cost is no longer needed. From a mathematical point of view, the actual cost takes a derived extension and shall be calculated by adding or subtracting the deviations of the actual expenses as opposed to the standard ones to the standard cost, without using two sets of calculations as it would be normally used in traditional calculating methods.

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<sup>2</sup> Tenovici Cristina Otilia (2007) *Designing the Informatics System for the Calculation and Analysis of Forestry Costs*, Universitaria Publishing House, Craiova, Romania, p.22

8. from an economic point of view, costs are measured up against production volume, some being volatile, others being non volatile. Thus, the standard cost method emphasizes grouping costs in regard to their evolution in comparison to the physical work volume (indirect expenses have both a volatile and non volatile side to them), as opposed to traditional methods oriented towards grouping production expenses into direct and indirect ones.
9. estimations of future costs is possible, as they reflect objective future costs based on the elimination of deficiencies that can be avoided and are preferred to estimations based on adjusting registered costs in the past that could have incorporated the deficiencies of past periods.
10. standard costs are pre-established costs, with a normative nature, which allow the evaluation of managerial competences within the firm for a stipulated timeframe.

The elaboration of standard cost calculation directly depends on establishing necessary standard measurements. Essentially, the standards represent physical or numerical measurements with a standards status, established in a scientific mode, based on modern methods of observation, registration and analysis of the phenomena from inside the firm<sup>3</sup>.

Applying the standard-cost method in forestry means creating the following:

- ↳ the calculus for standard cost for timber and building lumber;
- ↳ the calculus, the checking up and the reporting of standard cost deviations;
- ↳ cost accounting according to method requirements.

This method of cost determination is established in order for production cost to scale up, in the form of reachable targets, that are also optimal, from which the close bond with the optimizing function derives. The improving function is based on a series of mathematical functions and is strongly related to the previous-calculations. The previous-calculation refers to cost and financial result's proportion, but it does not ignore cost supervision, which can generate various reasoning in previous calculation. Regarding the anticipated decision of the best proportion between production costs and the physical volume of the production, the technology of making products should be analysed, especially because its parameters and technological consumption have a dynamic character regarding the size and value, particularly if technology advances. The unitary cost and that of the entire scheduled production appear therefore to be an objective appointed measure, which cannot be overdue without the risk of damaging final results and a series of effectiveness pointers.

The supervising, control and adjustment function of accounting and calculation of costs are connected to the achievement of other functions and are

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<sup>3</sup> Calin Oprea, Carstea Gheorghe (2002) *Management Accounting and Cost Calculation*, Genicod Publishing House, Bucharest, Romania, p.200

related to the substantiation process of decisions through which the leading of productive activity materializes. In this way, cost's information is attributed the quality of the instrument used in supervising the respecting of consumption rules, the complete use of working time and capacity of installations' production, the identification and mobilization of internal resources in order to reduce the production costs. Through the information provided by cost, the leading bodies are able to compare the effective actual achievements with the targets and budgeted pointers and can adjust possible deviations through adequate decisions.

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