RESEARCH ON THE DEVELOPMENT OF TECHNICAL STANDARDS IN LOGGING PROCESS – A DIAGNOSTIC ANALYSIS -

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Abstract: *Considering the logging methods today (wood exploitation on foot, wood exploitation by service, collection of wood for its own), and that there is no authority in the field to issue and implement regulations especially in the field of management of timber logging process, it is imperative to develop , technical standards in logging process. To initiate this process, it is necessary to carry out bibliographic research, particularly to provide decision makers in the field of scientifically - based procedures, forms and procedures that should contain any future technical regulations, but only fundamentals goals which the administrator can rely on the regulations state forest logging process.*

Key words*: technical standards, forestry, regulations, laws, management*

INTRODUCTION

In recent decades have multiplied and amplified harmful consequences logging technologies for seedling, tree health and soil integrity, stability of slopes, watersheds and biodiversity. Significant contributions in this regard their first extensive application of technologies, tree crown, along with the use of machine systems confined to a very narrow range without developing a working concept integrated logging. Timber harvesting technologies today are based on mechanical saws (mostly Husqvarna and Stihl), represented in excess of 98 % of the total forest and articulated tractors, the latter accounting for over 96 % of harvested wood in Romania. The percentage too low and only by large companies with economic Coverage are used cable installations, 135 national, which in Europe are widely used, multifunction machines down - branch clean - cut (harvest), tractors type skidder performance , forwarder , grapple - skidder , skidder Bank-Jans. The last census on machinery used in timber harvesting in Romania shows that the number of harvesters and forwardes equipments not exceed 35 units, tractors are the number 8500, of which 95 % are technically outdated and morally.

The complexity of technological systems applied must be updated in line with new facilities tend to be one of improving the facilities and optimized its organization, including design, so technical and technological solutions are feasible. Applied technology system components are economic, human, technical and technological, ecological, all must be harmonized in order to achieve technological solutions easily applied by the grower and checked by the administrator. To achieve these goals, to consider the optimization of technological systems through studies of productivity method and modern equipment, technical and economic studies on the cost of using these machines, their ecological impact. Also, a special place has the training staff to be trained to have the knowledge and skills to operate modern equipment. Consistency in the development of technologies and rules applied in the woods is defining the success of the approach.

Logging process is not directly responsible for the work carried out under forestry infrastructure (road network) to ensure unsuitable environment. However, in terms of operating techniques, not a few of them have been incriminated in ecologically. Therefore, various techniques used in present time, must be taken in consideration, not the patterns match eco-technological and, therefore, some corrections should be made. Along with equipment, reduced availability of permanent transport networks and routes appropriate

collection makes the transport inside and outside the forest to be cumbersome and sometimes even impossible.

In these circumstances, some new regulations on logging process are required, according to the demands of economic development and environmental protection, better equipment with modern operating funicular promotion; accessibility stands by providing avenues of access, a.s.o. New rules are needed in the protected perimeters, especially in the buffer zones and conservation areas of National and Natural Parks, especially in conifers.

MATERIALS AND METHODS

The researches on the current logging regulations refer to the operating activities of Romania, for developing uniform technical rules. It is also important to be mentioned that all areas of research, include geomorphology, vegetation and climate, paving the determinants of logging.

The research method is the first step in the collection, processing and storage of data held from all possible sources to achieve each objective. Today, the laws governing logging process in the main areas are:

- On the protection of forest ecosystems;
- On the implementation of the technological process;
- Safety rules in logging activities;
- Regulations on management of wood;
- Instructions forestry machinery operation;
- Best Practices in logging process FAO, Rome, 1996.

In stage II, the claims that are made, the findings are presented and possible solutions to the identified problems and are based on the following:

- Experience in forestry for a long period in two specific savings Romania: centralized economy before 1989 and a market economy after today, with a long transition between the two phases. Diversified experience in the field of culture and exploitation of forests gained from forestry departments, divisions forest logging sector, specialized higher education, local government and forestry research , plus experience in operating activities and wood processing the private companies, after 1989;

- Recovery logging research results achieved in the Forest Research and Management Institute and the National Institute of Wood Bucharest;

- Diagnostic tests performed at the types of companies mentioned above, and also the papers published and presented at scientific sessions of the higher education field, analyzing the results of the work of Foresters Association of Romania (ASFOR);

- Careful observation of the phenomenon of logging activity in Romania and Central and Eastern European counterparts in terms of social and economic organization in the period 1980-2013, in order to determine the best model on the basis of experience in this field;

- The current analysis of logging process, by highlighting its weaknesses, may be the premise of future in technological and legislative measures, which ensure the full integration of operating sustainable forest management requirements.

- The paper will consider the modern sense in which culture and forest logging is a unitary system in which the two activities are interrelated, induce the inseparability of the two activities, performing forestry timber harvesting as a method of regeneration which makes the installation of a new stand.

RESEARCH RESULTS

In this paper we characterized the logging process of light side, as production activity in Romania during the centralized economy after 1990, starting from the submission history of this activity, forms and ways in which work is carried out today, the current regulations, and recommendations of the Code of Practice in logging UN/FAO/ Rome, 1996.

Based on the above as, „the state of knowledge in the field", comparing the realities of the moment in the field of forestry, we highlight the unresolved issues regarding the regulation of this activity, and later in this paper to come up with proposals solving according to the objectives set and confirmed by diagnostic analysis of this activity.

Current regulations in the field logging of Romania, consistent with the Code of Practice in the activity of the UN/FAO can be considered strengths of this analysis, diagnosis, and the area that these regulations do not include the issue to production activity and current rules outdated, demonstrated the results of scientific research are weaknesses and they emphasize mainly under three aspects:

1. Observing the forest in forest operations;
2. Managing exploitation of wood in the wood;
3. Forestry management activities.

The thresholds affordability of the forest ecosystem are not established in terms of standing trees (residual) and that of the soil and forest land. It is widely understood that any harm either the trees or the soil is injury and therefore must be punished. For seedlings are established affordability threshold (damage and destruction over 8% intermediate and 12 % cuts in the final cut surface). For soil damage, there are established methods and criteria for evaluating their intensity and then where appropriate (if it exceeds the threshold of affordability established) and for the calculation of the amount recovered by the relationship between the physical size of the injury and its value.

When discussing the damage of forest ecosystems, is required to relate the stand (ua), which in most cases coincides spatially with the operating floor. In these circumstances, the damage occurring in the trees, seedlings and soil must be reported to the surface to determine its actual size. In these circumstances, the damage occurring in the trees, seedlings and soil must be reported to the area to determine their actual size. In these circumstances, it clear from the results of scientific research, how to collect the field data statistical coverings, establishing a uniform methodology applied. Exclusion notions avoidable and unavoidable damage not considered appropriate. We believe that it must exist theoretically and practically, but within the criteria punctual compliance rules operating on the correct technology (if indicated direction down and not respected, justified or unjustified, if not respected road tractor justified or unjustified, a.s.o.).

There are set rules and standards for production (NT and NP) for arrangements and specific forest ecosystem protection works to be assessed as operating expenses of the wood in design work. When cleaning the prosecution, it should be clearly set wooden categories subject to this operation and how and where to order in hardwood flooring. Flooring material should be left in category branches (top branches: less than 2 cm), small cracks in limbs, ineffective gathered and fell to the ground rotten wood (dead wood in terms of the concept of biodiversity). The year with the results of scientific research on the content of nutrients (calcium, sodium, phosphorus, a.s.o.) operating in the aforementioned residues and their transfer through biological degradation by soil and their protection on the next generation will should reconsider their gathering piles except special circumstances, especially their collection of flooring surface for biomass energy.

Height stump consider being limited to 10 cm, since otherwise technological consumption in high stumps grow exponentially large diameters. The amount of wood resulting from the exploitation process will be sold mainly in the future and not standing timber, timber management that finances the forest, is the responsibility of the administrator. When the pressure is added, drop for energy wood and indirectly on soil manure in the forest (mining debris). Collection routes which are narrow strips of land, more or less furnished and equipped especially for the temporary movement of wood in a permanent way of transportation must be approved for the width and slope of access to forest according to the technical parameters of the equipment machine systems used in the collection (4 m can be very more or less in some cases. If you do so, the average width of the collection routes will be in the 4 m provided instructions in force today.

Control logging should cover instructions or general rules and the special prosecutor's office of the mining project on which to undertake the default specification for the award exploitation prosecution. Readmission prosecution under European practice should be done in two stages: readmission prosecution on completion technology as their scaling, and the second stage within two years, you can evaluate the results of the intervention in terms sylvicultural but and protection of forest ecosystems, establishing medium -term strategic objectives in terms of forestry. This is how the logging operations on foot were not the responsibility of the administrator of the forest, but the forest operator recovers its services expense logging operations through the sale of timber obtained during the operation.

Although after 1990 in Romania were introduced ways of logging operations in self and service, as an objective necessity, it have not been established technical standards and criteria for the management of wood molding. Not applicable, based on normative, results of research, transforming raw wood volume for the enhancement of the Act (VPA) in the volume of wood in the primary types of primary processing of raw wood (wood so thick, so thin wood, wood sters, wood limbs).

There are no regulations on the management of wood shaped during the logging process to forecast the commercial varieties (types of primary raw materials and industrial types of raw). There are established by normative technological maximal consumption of wood at the end of the technological operation before selling the timber. There are rules and regulations regarding waste evaluation, especially in the category of sound management rot to the wood. There are regulations on logging on damages of wood shaped (assessing the amount of wood lost more than technological consumption) from unjustified losses in terms of quantity or quality (downgrading wood).

Management of well logging can solve applied under conditions known from the start respecting forestry regime on forest ecosystem in particular the protection of wood during operation, management and protection of wood carving and the efficient process itself through its two main functions: function of organizing and planning function. Model code of practice in forestry, Rome, 1996, provides for the purposes of logging management “strategic planning” that takes the field and forest planning, “tactical planning” that keeps the logging of the project on the organization and planning works hardwood logging.

From this point of view, we highlight the main weaknesses of the domain:

- Not every floor has prepared the exploitation of wood mass, presenting concrete solutions on the method of mining, mining technology, roads and optimal economic and ecological costs exploited concrete measures for the protection of forest ecosystem and the like. Project operation and organization on the wood parquet is a specific technical - economic document, underpinning drawing specifications and prices, which apply whether the standing timber, whether it is wood exploitation direct labor or service. Price per foot

of wood and shaped timber prices resulting from logging direct labor and service are determined mostly by the cost of logging process.

- There are no design rules in other areas like logging, which are constantly reviewed to determine promotion techniques and modern technology in forest operations;

- Logging are not responsible for improper effects that manifest when trees are extracted because the indications improper application of mistreatment, lack of roads makes the collection to increase the distance, a.s.o.). Under these conditions of exploitation of wood, project must begin with the markings on the ground, during which planning and collection marks the main routes are established concrete measures to protect the forest ecosystem after logging code of practice and direction of downed trees. On this occasion, the raw data is collected in the field and the office worked on the basis of maps made in GIS, using modern methods of preparation of the project;

- Management of readmission operation ends with prosecution in terms of silvicultural measures (step 2) when checked and get the latest measures of the effect of mining works;

- To work well logging and well executed must ensure appropriate incentives, as practiced and recommended by international bodies.

CONCLUSIONS

- Current field logging regulations have evolved in line with how it is practiced today in the area: the exploitation of standing timber, wood exploitation by service and operation of the wood in -house. They generally remained valid only model of wood leg and does not cover the same scope and operation of the wood through the supply and direct labor (especially in terms of management of wood, a.s.o.);

- Current regulations under the model code practices in forestry, Rome, in 1996, in terms of organization and planning activity logging only provide their organization long-term (strategic planning) that relate to planning the crop by forest management (ten-year harvest plan) and not on short-term specific floors or operating site (multiple plots with similar conditions are located in the same large pool), and is specified in detail by the project organization and operation of mass wood;

- Regulations and rules will think as recommended on the experience of developed countries must be constantly practice a combination of mandatory and voluntary guidelines for that give the best results in relation to forest managers, farmers and the local community or regional forest;

- Regulations and standards of logging no matter how well conceived and drawn at a time are, they must be dynamic, in order to be aligned with those in other areas of forest culture and vice versa and applied with determining how the logging efficient and to eliminate the causes of material and silvicultural forest as a whole and in particular sites logging operations;

- The deadline will be reviewed and logging since it is technical work extraction from forest trees labeled by different methods and technologies, respecting principles of cultural and environmental restrictive so that the entire industrial process fall within the concept of sustainable forest management (Sample name: Recovery yields of wood, practice management stands , a.s.o.) , and if this is not possible in the near future, foresters are required to explain the deep the theory and practice this concept in terms of importance sylviculturale, ecological and economic forest life and society.

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