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FIELD ACCOUNTING**

Doctoral Thesis

Abstract

**THE DIAGNOSIS ANALYSIS OF THE
FINANCIAL - PATRIMONIAL SITUATION
OF FOREST UNITS**

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INTRODUCTION

Numerous and sufficient arguments confirm the fact that mankind is going through a period characterized by the economic-financial crisis, whose effects can be seen in all economies. At the same time, the effects of the ecological crisis are felt ever more intensely, except that they are less palpable, sine they do not affect individuals directly. The characteristics of the ecological crisis, as well as the climate changes, global warming, land desertification and degradation, natural disasters, the imbalance of the regime of precipitations, all impose a rational management of the resources that man has.

The forest, as a global strategic resource, is one of the chances of survival of mankind. Besides producing wood, forests also help slowing down the global warming by stocking and retaining carbon, balancing precipitations, sheltering numerous species of flora and fauna, and they are essential sources of food and water and bring recreational advantages for millions of people. Although it is a renewable resource, the forest is a limited resource, which should be managed in a sustainable manner, in order to be preserved in good health through appropriate forestry.

Research Objectives

The doctoral thesis titled *“The Diagnosis Analysis of The Financial - Patrimonial Situation of Forest Units”* performs, through the instruments made available by financial analysis, a research of financial-patrimonial situation of forest units, from both theoretical and practical in compliance with the principles of conservation and sustainable management of the national forest fund.

The implementation of a strategy supposes a multitude of decision processes, but before any decision process, each company must know itself very well, with its advantages, the purpose of its activity, and the resources it can use in order to obtain performance in what it does.

The originality of the scientific approach derives from the fact that the problem of the financial – patrimonial situation is investigated considering the peculiarities specific to the sylvan field, in the conditions in which forestry must solve the fundamental problem of increasing the productiveness of forests and insuring an optimal ecologic balance, which could provide stability and increased functional efficiency to the forest ecosystems, both now and in the future.

Research Methodology

The doctoral thesis attempts, through the research methodology used, to achieve a detailed and inter-disciplinary approach of the problems specific to sylvan units, since an efficient and pertinent diagnosis analysis requires accounting knowledge, economic-financial analysis, as well as other adjacent disciplines.

In the context in which the diagnosis analysis is theoretical-applicative by combining *deductive* and *inductive* reasoning, our research was performed based on a case study applied on a sylvan unit, which provides the theoretical models for approaching concrete problems, corresponding to the *fundamental research*, as well as the transposition of the theoretical concepts into practice, based on the *applicative research* based on data and information provided by financial-accounting statements.

CHAPTER I

THE DIAGNOSIS ANALYSIS, A COMPLEX THEORETICAL-APPLICATIVE APPROACH BASED ON ACCOUNTING INFORMATION

A study of the problems referring to the company's activity from the perspective of the cause - effect relationship imposes an interdisciplinary approach of it, through the *diagnosis analysis*. The diagnosis analysis is an essential component in the management process of any company, since it is used to monitor and evaluate its functioning as a system, its focus on economic efficiency and insuring performance in a competition environment.

Financial analysis, a component of economic-financial analysis, is seen as an analysis based on the study of financial statements and implies complex reasoning applied on them, according to a specific methodology, in order to study aspects of company management.

The detailed analysis of the aspects in the company that the management considers necessary for establishing the causes that determined malfunctions starting from the main observable symptoms, characterize the *diagnosis activity*. Efficient diagnosis must lead to identifying the opportunities for the company to develop, and allow defining realistic strategies. Financial diagnosis brings an essential contribution to company diagnosis, since financial aspects play a central part in managing its activity. It appears as a set of specialized approaches and instruments that apply to internal or external information sources,

provided by accounting or by other information sources, which allow evaluating the economic-financial situation of the company at a given moment or during successive periods.

In this context, financial diagnosis is at the centre of the strategic approach of the company, allowing, on the one hand, stressing the strong and weak points, and on the other, the opportunities and threats that come from the business environment of the company. This confrontation allows evaluating the strategic options and establishing the maneuver resources that the company has in order to achieve its strategies in good conditions.

As a main source of reflection of the economic reality and of the results of a company's activity, financial-accounting information gained new dimensions, becoming ever more complex with the evolution of the company's activities. Still, in order to be credible, comparable and useful for the decision factors, as well as for the business partners, financial-accounting information must "speak" the same language, which takes the form of the annual financial statements.

CHAPTER II

FORESTRY – A STRATEGIC FIELD OF NATIONAL ECONOMY

This chapter presents the manner of application of the national strategy in the field of forestry and of the sustainable management of the national forest fund, administered by the National Forest Department - Romsilva, through its territorial structures, referring to the Forest Branch of Iași.

The forest has its own laws for growing and developing and is mutually conditioned by its environment. It is strongly influenced by the environmental conditions and has a considerable influence on people's life. In this respect, its usage must be done with the compliance with the principles of sustainable management, since applying inappropriate treatments that do not consider the care for the integrity and structure of the forest fund, together with the actions of the environmental factors, determine a drop in the ability of the forest to protect itself, with long-term effects on the quality of human life.

The current period is marked by an intensification of the international and national efforts for applying sustainable forest management, which would insure the preservation of biodiversity, productivity, ability to regenerate and potential to fulfill all the ecological, economic, and social functions, so as not to bring prejudices to other ecosystems, neither now, nor in the future. The Romanian territory has

great forest diversity, as Romania owns almost half of the biogeographical regions of European interest.

Managing the forest fund, irrespective of the property form, is performed in compliance with the sylvan regime, based on the sylvan developments, which are a “Bible” of forest management.

As a territorial structure of the National Forest Department, the Forest Branch of Iași was administering, on 12.31.2011, a surface of 77567 ha of forest fund, insuring the defense, preservation, and sustainable development of the forest fund, the management of the hunting stocks attributed according to the law, the harvesting and capitalization upon the products specific to the national forest fund.

CHAPTER III

DIAGNOSIS OF THE FINANCIAL – PATRIMONIAL SITUATION BASED ON THE BALANCE SHEET

Decisions concerning the company’s activity cannot be taken without the evaluation of the way of attaining financial balance. In this respect, in order to know the conditions in which the company can preserve its financial balance, it is necessary to analyze the balance, both from a patrimonial (financial) perspective, and from a functional one.

In this chapter, we have used the instruments of the diagnosis analysis in order to study the financial balances established based on the balance sheet, a theoretical-applicative approach that allowed establishing the patrimonial structure and its evolution in time, the liquidity-solvency correlation, the degree of appropriateness of the structure of the resources involved in the usages they fund.

The analysis of the financial balances through absolute and relative indicators was performed base on the financial and functional balance sheet of the Forest Branch of Iași. The following indicators were computed: the net statement, the working capital, the global net working capital, the needed working capital, the total needed working capital, net cash, the structure ratios of the balance assets and liabilities, the funding ratios, the profitability ratios based on the statement, the solvency and liquidity ratios. From the performed analysis, we noticed that the financial balance of the Forest Branch of Iași is drawn for the analyzed period, and the unit has enough resources to fund the necessities of the current activities performed (see Figure no. 1).

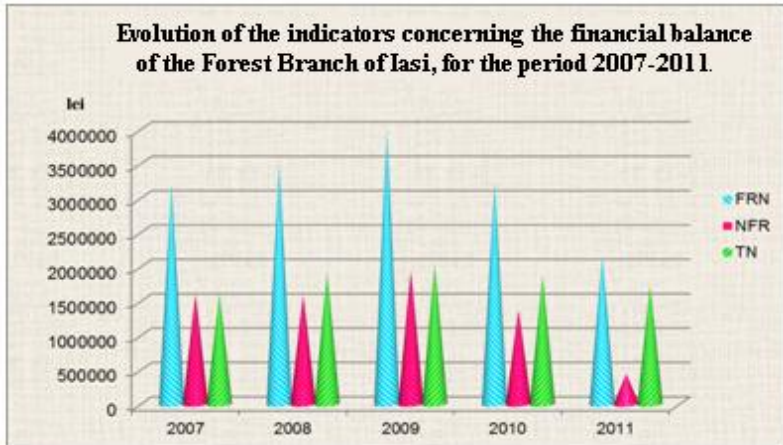


Figure no. 1. Evolution of the indicators concerning the financial balance of the Forest Branch of Iași for the period 2007-2011

The analysis of short and long term balances from a functional perspective, based on the functional statement obtained after regrouping the asset and liabilities positions in relation to the investment, operation, and funding functions is presented in Figure no. 2.

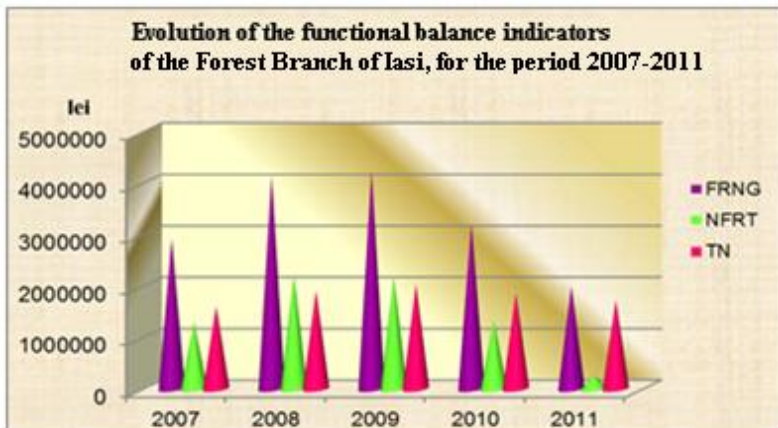


Figure no. 2. Evolution of the functional balance indicators of the Forest Branch of Iași for the period 2007-2011

The study of the financial balance based on the *economic and financial profitability ratios* shows a descendent evolution for the analyzed period (except for 2011, when the indicators were higher), which proves a decrease in the efficiency of the usage of the borrowed and owned capital (see Figure no. 3).

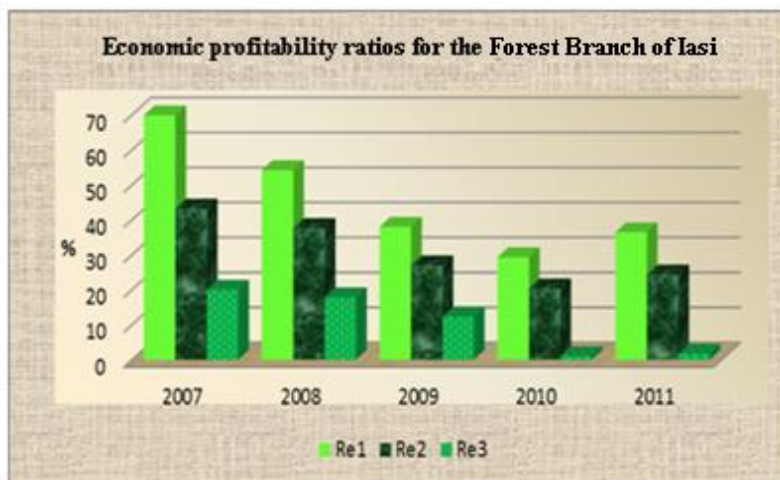


Figure no. 3. Economic profitability ratios of the Forest Branch of Iasi for the period 2007-2011

The financial profitability ratio (the shareholder's equity ratio) was higher than the economic profitability ratio (the invested capital ratio) as a result of a positive financial lever effect ($ELF > 0$) and of the higher economic capacity ($Re > d$), except for 2011.

The evolution of the financial profitability ratios and of the financial lever effect in the analyzed case is presented in Figure no. 4.

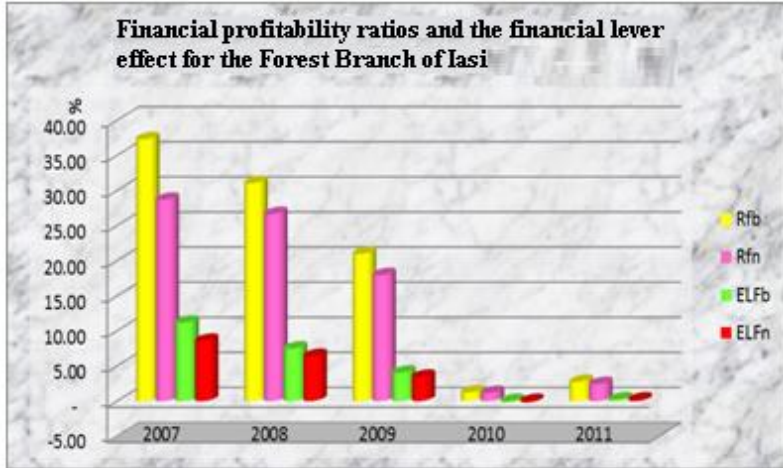


Figure no. 4. Financial profitability ratios and the financial lever effect for the Forest Branch of Iasi for the period 2007-2011

The realistic evaluation of the financial and economic effects of the management decisions cannot be performed exclusively based on the data provided by the statement, since the dynamic aspects of the activity would not be taken into account, and neither the factors that determined a certain patrimonial situation at a given moment. In this respect, the data provided by the profit and loss account are used, and after the analysis it is possible to evaluate the extent to which the performed activity corresponds to the desired performance parameters, if the results obtained allow continuing the activity in a sustainable manner.

Such an approach is even more necessary in conditions of economic difficulty, since achieving performance when the conditions of the economic environment are favorable can be a phenomenon within the limits of normality, but if this performance is sustainable, even in periods of economic decline, then the activity is definitely managed with a sustainable vision, directed towards the future.

CHAPTER IV

DIAGNOSIS OF PERFORMANCE AND RISKS BASED ON THE PROFIT AND LOSS ACCOUNT

The alert rhythm of evolution of the current business environment, together with the constraints imposed by it, made the evaluation of the obtained performance a permanent concern for any entrepreneur. In the conditions of the market economy, performance is most frequently evaluated through profitability, which lies at the basis of supporting the decisions concerning both the management of the unit and the relationships with the business environment. Therefore, profitability reflects the economic efficiency of the entire economic-financial activity, being evaluated as an indispensable instrument for the identification of the internal resources for increasing the final economic efficiency of the use of resources in the economic units.

Supporting and making financial decisions by the management of sylvan units implies investigating the results recorded, which, through the impact exerted on future activity, will determine certain reasoning oriented towards performance. In this respect, the table of the intermediate management balances concerning profitability was drawn. The computed indicators had a descendant evolution for the analyzed period, except for 2011, when they increased (see Figure no. 5).

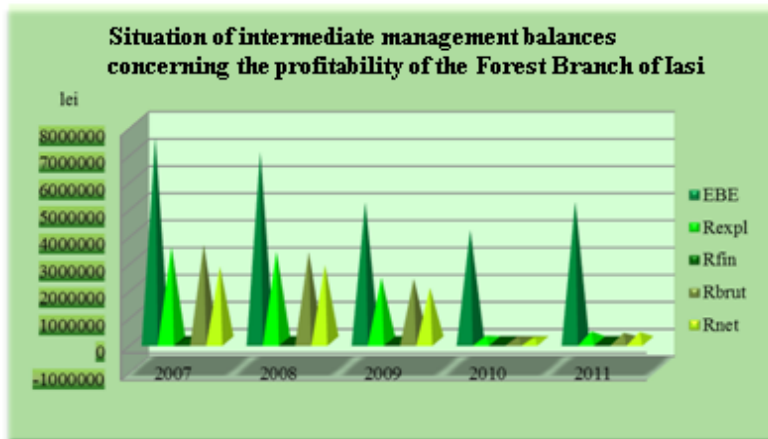


Figure no. 5 Situation of intermediate management balances concerning the profitability of the Forest Branch of Iași for the period 2007-2011

Profitability analysis based on the results provides useful information, but not representative enough, which is why the *profitability ratios* were also computed, as they help making comparisons in time,

space, or with standard values accepted or elaborated by specialized bodies.

The approach for establishing the financial health of the unit could not be complete without taking into account the elements concerning the evaluation of the *risks* associated to the activity. The following risks were computed: operational (economic) risk, financial (capital) risk, total (economic-financial) risk, as well as the bankruptcy risk, evaluated based on score functions according to the Altman, Conan&Holder, and Anghel models.

In the case of the Forest Branch of Iași, based on the data in the profit and loss account, the economic, financial and total lever coefficients were computed (see Figure no. 6).

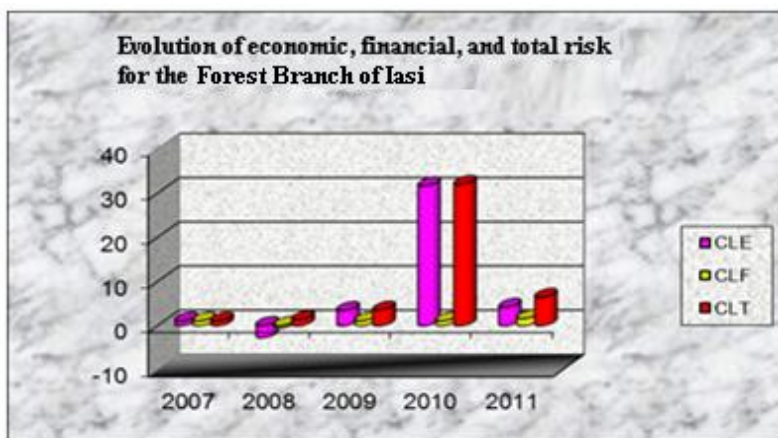


Figure no. 6. Evolution of the economic, financial, and total risk for the Forest Branch of Iași for the period 2007-2011

From the analysis of the risks of the analyzed unit, we can see that the evolutions of the indicators show good financial health, good solvency and credibility for bankers, and the activity sustainability can be achieved with no risks, with the mention that the trend of the indicators for the last years was descendant (see Figure no. 7).

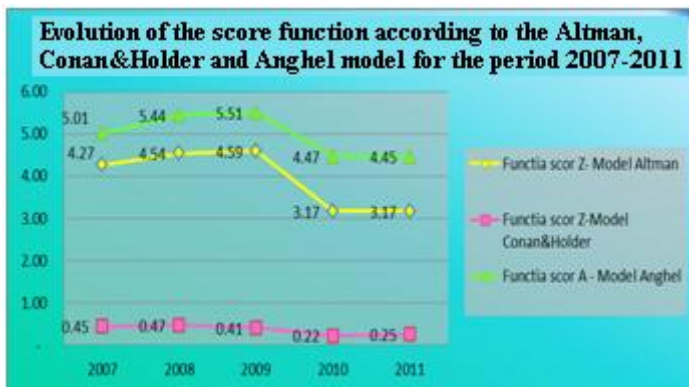


Figure no. 7 Evolution of the score function according to the Altman, Conan&Holder and Anghel model for the Forest Branch of Iași for the period 2007-2011

From the performed analysis, there results that most of the indicators concerning profitability present a decreasing tendency in time, stronger during the last years, when the effects of the economic-financial crisis are felt by the unit.

The results of this research support the numbers resulted from the studies in the field, which lead to the same conclusion: a decrease in the profitability of sylvan operations. This imposes increased attention and measures that the involved decision factors must take, which also implies a specific microeconomic as well as macroeconomic strategy that would insure the sustainable management of the forests and the rational capitalization upon their ecological and social-economic functions.

CHAPTER V

CAPITALIZATION UPON THE FINANCIAL DIAGNOSIS IN COMPANY EVALUATION

In a business environment where the economic-financial crisis is ever more felt, with an impact on all the activity fields, company management must direct its strategic decision-making process towards finding the financial decisions that would lead to maximizing the company value. The problem of establishing the company value arises often, and in solving it, financial diagnosis is used, through the results of

the analysis of the company's solvency, profitability, weak and strong points, which stress its role in company evaluation.

Starting from the fundamental conceptual delimitations concerning evaluation, this chapter stresses the importance, purpose, and need for this approach within the various situations and transactions in the company life. The evaluation approach from a theoretical and practical perspective focused on rendering the evaluation methods included into the various approaches that lie at the basis of the evaluation of a company, respectively: *the approach based on assets* (patrimonial), *the approach based on income* (financial or profitability approach) and the *mixed approach*.

The value of the Forest Branch of Iași was estimated according to the following methods: the net accounting asset method (ANC), the corrected net accounting asset method (ANCC), the profit capitalization method, the cash flow update method (DCF) and the methods based on goodwill, resulting in the values in Table no.1:

Table no. 1 Synthesis of the evaluation results of the Forest Branch of Iași

| No. | Evaluation method | Estimated value - lei |
|------------|---------------------------------------|------------------------------|
| 1. | The NAA method | 15758975 |
| 2. | The CNAA method | 14292023 |
| 3. | The profit capitalization method - Pc | 16138527 |
| 4. | The DCF method | 17305394 |
| 5. | The method based on goodwill - Gw | 19901593 |

From the analysis of the evaluation results and based on reasoning, we can draw the conclusion that the evaluation method that best estimates the market value of the Forest Branch of Iași is the DCF method, since the prediction of the future cash flows was made taking into account the results of the evaluation analysis, the company's strategy, its financial structure, its profitability and risks.

CONCLUSIONS

Our approach ended with a synthesis of the results of the diagnosis analysis performed in a *SWOT analysis* (*Strengths, Weaknesses, Opportunities, Threats*), as a first stage in formulating a strategy at the unit level, in accordance with the national forestry strategy. In this respect, we present the following aspects that resulted from the research performed on the Forest Branch of Iași and, in general, on forest units:

Strengths:

- Physical-geographical conditions favorable to the development of varied and rich forest vegetation;
- Potential for raw materials for the food industry: berries, edible mushrooms, venison, fish;
- Raw materials for the pharmaceutical and cosmetic industry, for making handmade, ornamental and household products, for increasing the fodder base;
- Valuable forestry genetic resources that insure superior reproduction material (seed reservations);
- Reservations and natural sites of national and international importance;
- Good financial balance that allows sustaining the activity with no risks;
- Available liquidity.

Weaknesses:

- The degree of forestation of the region of Iași under the average national and international level;
- Decrease in the potential to capitalize upon wood and non-wood products on the market during the last years;
- Lack of capitalization to its true value of small-sized wood and wood waste;
- Sylvan services for small and dispersed forest surfaces, because of the fragmentation of the land properties;
- Reduced accessibility in some areas of the forest fund;
- Vulnerability to natural phenomena (floods, draught) because of the geographical area;
- Property crumbling because of the process of reconstitution of the property right.

Opportunities:

- Encouraging new forms of tourism and capitalizing upon the historical, cultural, and spiritual heritage of the region of Iași;
- Raw materials (wood and non-wood products) able to attract foreign investors;
- Access to European funds for building/rehabilitating the access infrastructure in the forest fund and investments in ecological technologies;
- Introduction into the foresting compositions of local species adapted to climate changes;
- Exploitation in an own system of a wood mass volume profiled for motor roads;
- Extension of the lands covered with forests in degraded areas;
- Promotion and intensification of sylvan tourism activities practiced in the forest areas administered by Romsilva through the Forest Branch of Iași;
- Increase in the demand for wood for constructions and heating, especially in the rural areas;
- The national and European energy policy, which encourages regenerative energy sources and the possibility to attract investments in this field;
- Usage at a large scale of natural products, many of them based on raw materials that can be obtained from the forest fund;
- The development of handicrafts, which leads to a better capitalization upon small-sized wood and wood waste.

Threats:

- The negative effects of the economic-financial crisis and deterioration of the business environment;
- Financial block, with repercussions on applying the contracts for exploitation of the wood mass;
- Climate changes determine dryness in certain areas of the county, because of global warming;
- Lack of completion of the property laws and extension of the land retroceding process;
- Increase in the demand of wood mass from the economic agents and forest owners;
- Non-compliance with the contractual clauses by the forest owners concerning the payment of the security services;

- Lack of exploitation of the tendered wood mass, acquired by the economic agents, at the established terms;

- Decreasing purchasing power of the population.

The study performed on the Forest Branch of Iași allows us to formulate *several suggestions* for improving the financial performance in perspective:

- Gradual increase in the productive potential of the forests by applying appropriate forestry treatments;

- Superior capitalization upon the wood materials and accessory products of the forest, both internally and externally;

- Producing varieties and species with high productive potential and increased resistance to the action of disturbing factors;

- Applying cultural techniques on ecological and economic criteria;

- Involving forest culture in solving problems in the energy field, through the creation of energetic forest cultures;

- Improving the accessibility of the forest fund in correlation with the modern methods and technologies for wood exploitation and with the environmental protection requirements;

- Improving the forestry legislation in the sense of imposing severe restrictions against those that perform actions against the forest;

- Developing the social, recreational, and sanitary function of the forest by extending the surface of forests improved to a recreational purpose;

- Intensifying the efforts to protect and rationally use the forest resources, the spontaneous flora, the hunting stock and fishing stock;

- Planting mixed bushes and extending the forest areas near human settlements and in areas where there are conditions for their development;

- Awareness campaigns for the wide public concerning the importance of the forest for the environment and for life.

The importance and multitude of the problems of Romanian forest culture today and tomorrow impose increasing the role of specialized scientific research in the field, by integrating its results and recommendations into the national and international strategies and programs, giving priority to knowing the structuring and functioning laws of forest ecosystems, of the relationships between forest and climate changes, before it is too late.

For these reasons, we express our hope that our paper will be useful to all those interested in this important field for our future and for future generations. Of course, only scientific research or strategies are not

enough to save the future of the forest, but financial investments are also needed, as well as work, intelligence and, as the forester Marin Drăcea stated, for *"the forests of a country to prosper, they need first of all the heat and dew o human heart"*.