

Sustainable forest management – rationale and necessity

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Abstract *Sustainable management of forests is determined by several factors, the main anthropogenic. The destruction of "green gold" leads to a number of economic and environmental imbalances generating major risks. Ecological restoration leads to a theoretical and practical examination of the relationship between restoring forest area and forest protection activities through a regional sustainable development, so that the forest soon will be represented by the link : harmony - abundance - constancy. The article will make a pass through the existing literature in the field of forestry and environment relationship - the economy, to show the way and the opportunities to relate the efforts for environmental protection and sustainable forest management with economic efficiency through the implementation of important projects in the field.*

Key words *sustainable management, forestry management, restoration, financial resources*

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Introduction

Romania is lagging in Europe at the wood section after the irresponsible deforestation in the latest years. Only a quarter of the country is still forested, a figure that places Romania on the fatidic number 13 in rankings in Europe, 27% of the area is under forest (about 6.43 million hectares), of which 3% (approximately 200 000 hectares) recorded as primary forest and the rest 97% as secondary forests and forest land; if we take into account only functional ecological forests, forest is only 23%.

The proposed article will try to reformulate the essential question, not "if" but "under what conditions" the space forestry development is profitable for the economy and community, and to develop a new concept of ecological awareness (Brown, 2001) by investigating its influence factors. The percentage of forested land in Romania is well below than other European countries with similar natural conditions (Slovenia 57%, Austria 47%, Bosnia 53%, Slovakia 41%), representing for about half of Romania optimal proportion (40-45%).

The implementation of these projects will highlight the diversity of information on the forest area, including the regions impacted by desertification due to excessive deforestation, environmental risks arising from environmental failures: landslides, floods (FAO, 2012)

Forest protection

The activity generically called "forest protection" aims to prevent the attack made by diseases and pests and their control, fitting in all measures of rational management and sustainable management of national forest in accordance with the accepted European and global principles, that are converging to obtain maximum economic benefits, without neglecting any moment the forest ecological balance that we must generate and maintain it (Bran, 2002). Meanwhile, forest protection also means to safeguard forest area against illegal loggers, investment projects, and expansion of rural and urban areas for residential or commercial purposes (Bran, 2014).

Over time the factors that have worked to forest ecosystem degradation, in various forms, occurred with great intensity, related to the stage of historical development of the population. The ecological impact, it can be said, recorded, but a growing imbalances generated is becoming more serious, often even irreversible. The main factors contributing to the decline in forest area are: deforestation in

order to extend agricultural land (cereals, pastures); need for fuel and building materials. The intensity of these processes is characterized by a dynamically growing, driven by the pace of population growth.

In Romania the structure of causes for deforestation is different at some extent from these global pictures, while the intensity is also lower than in the case of tropical forests. Nevertheless, illegal logging is occurring and it affected several hundred thousands of hectares (Bogan and Anghel, 2012).

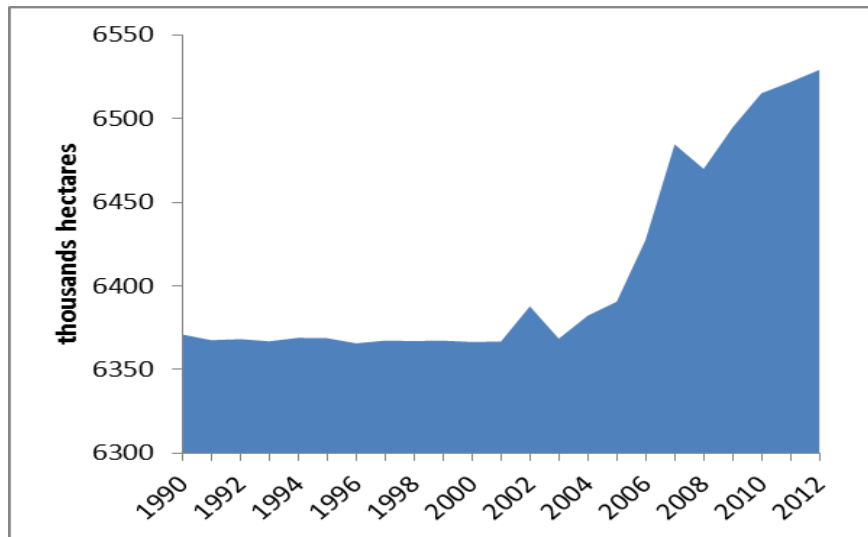


Fig. 1 Evolution of national forest area in the period 1990-2012

Source: authors' representation using data from Statistic Yearbook, 2013

The national forest area has increased in from 1990 to 2012 according to statistic records (fig.1). The increase of forest covered area was of 158 thousands hectare, representing a growth of 2.5%. Nevertheless, in the same time important areas were logged without respecting legal norms, especially after the changes of the ownership regime. Thus, although statistic records do not show, other less reliable sources provide information that the real area of forests does not increase, but on the contrary is lessening with little or weak control on the behalf of forest authorities.

The opinion polls in Europe show that in recent years the issue of forest protection is ranked in second place in terms of importance after the social problems - unemployment, economic stability etc.

Forest management and monitoring

The forests are one of the most important natural resources, with a particular value for the environment and for the economy. Regional development, environmental construction, civil society involvement in environmental protection activities are basic principles that need to be applied for the elaboration of national and regional strategies of various sectors.

For several years, following one of the main environmental priorities were developed new pathways in the study area of forest management. Among these an important focus is on the European methodology of forest management that proved to be highly effective in reducing the damages caused by massive deforestation.

In Romania, the local authorities need to be supported in promoting the restoration of forest area and efficient use planning and the development of the deforestation activity. Mapping risk areas arising from massive deforestation will contribute to regional development organization so as to promote projects that protect the population in those areas and economic- social objectives.

Given the evolution of human society, public opinion has notified the forest degradation and regression components, trying to give them their due importance, forcing the political and the socio-economic actors to effective participation in the conservation and development in a sustainable manner of everything what surrounds us.

The purpose of evaluation is to provide continuous information on the state of the vegetation and forest soils, the effects of pollution on forests, in developing and substantiating management measures, recovery and prevention of adverse conditions in the Romanian forests (UNEP, 2008).

The main objectives followed by the operation of continuous monitoring are, on one hand, recording information on the spatial and temporal evolution of national and state forests, and on the other hand, determining the main causes that damage the forests and highlight the tasks and critical levels of the negative triggering factors condition.

Achieving these objectives requires its own methodological approach and a surveillance system at levels of intensity and different representation. The need to implement projects with reconstructions objectives is linked to the analysis of some indicators such as:

- Annual growth of wood and other biomass;
- Health status of trees, soils, and wildlife species;
- Nutritional status of trees mirrored in foliar composition;
- Flows of pollutants expressed in qualitative and quantitative terms by the analysis of atmospheric deposition;
- Meteorological parameters (temperature, rainfall, wind etc.);
- Biodiversity of vegetal and animal species;
- Collection of geographic data and thematic layers in geographic information systems.

Forest management is a complex issue that is traditionally performed by a national company that struggle to respect a highly professional approach that respects the principles of sustainability. An increasing number of areas are covered by voluntary standards of forest management improving the access of Romanian wood on European and world market.

Forest restoration – from regeneration to integrated development projects

Analysing the data on the artificial regeneration we concluded that it is generally good, requiring commissioning their custody and administration or management plans. Despite the fact that the area that is regenerated each year halved compared with the previous regime, each year there are regenerate on average around 13 thousands hectares.

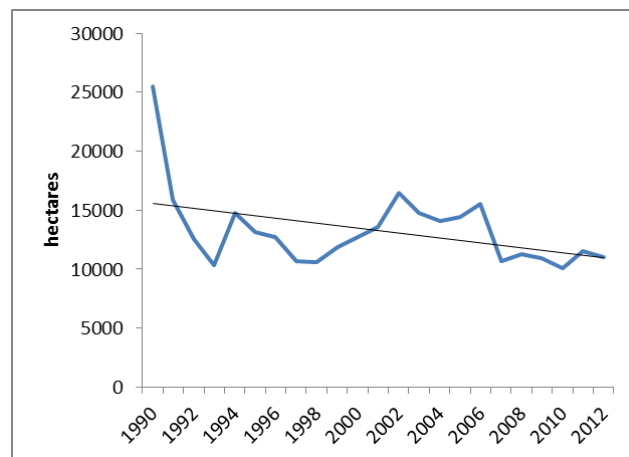


Fig. 2 Area of regenerated forest

Sources: authors' representation using data from Statistic Yearbook, 2013

Nevertheless, the trend of this activity is not favourable since data represented in fig. 2 indicate a decrease of regeneration. Meanwhile a number of non-governmental organizations, more or less supported by corporations launched a variety of projects that comprise as main or complementary activity planting of trees on areas comprised in the management of forest authorities.

At the national level, and not only, the authorities responsible with the sustainable forest management should take serious measures in this regard, in order to improve malfunctions occurred due to massive deforestation.

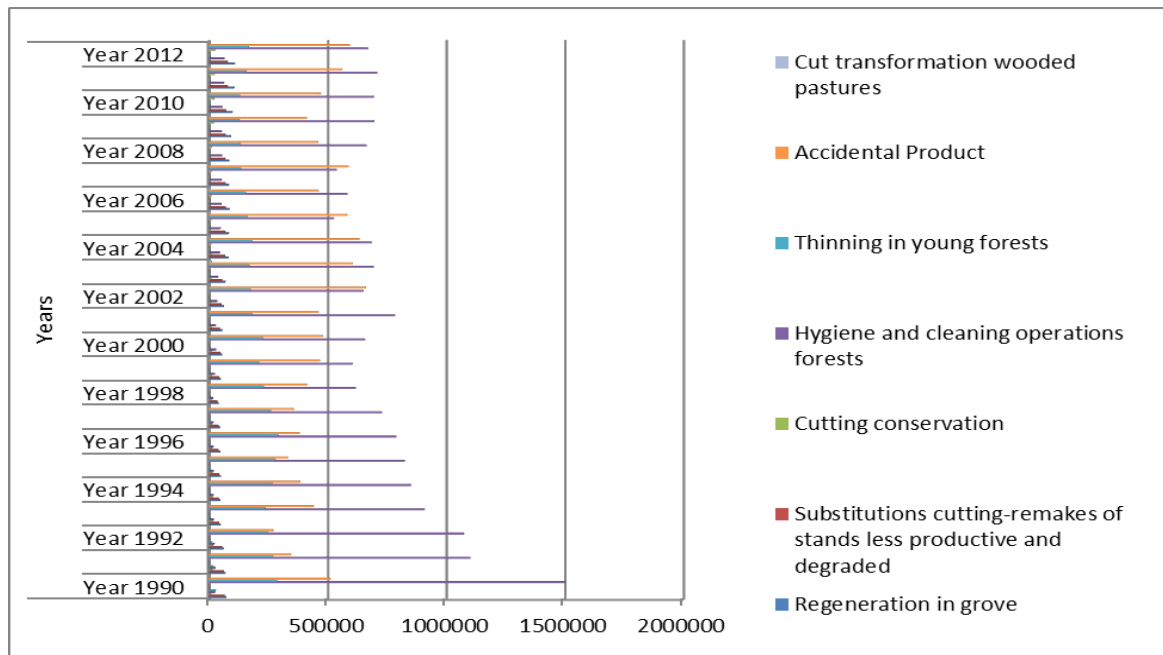


Fig. 3 Area of regenerated forest

Sources: authors' representation using data from Statistic Yearbook, 2013

In Romania, in the period 1990-2012, the situation of cuts is shown in fig.3. Romanian forest is facing many problems that are determined by both economic and social mechanisms, requiring a reorganization of forestry relationship with the economic environment.

The fundamental investment objective is to regenerate the forest area in Romania. The specific objectives that we want to achieve through these initiatives are:

- Obtaining European funding and external to achieve ecological restoration of Romanian forest area;
- Increasing the role of protection of the water, soil and forests against natural and anthropogenic factors pests and recreational insurance function on their multifunctional role;
- Protection of human settlements and other areas against wind;
- Improving air quality by sequestration carbon;
- Restoring and improving soil quality;

The objectives addressed through the implementation of related projects in forestry are:

- Restoring low productive stands;
- Stopping deforestation;
- Maintaining the integrity of the forest;
- Informing the public on the problems in the forestry sector;
- Ensuring health standards of population and protection of human against harmful natural and anthropogenic factors;
- Improvement of the landscape.

The main strategies that will be adopted in the investment relates to the regeneration of the forest area through afforestation works, completion and review of plantation species. Also the education of the local population and visitors in the spirit of responsibility towards nature.

By this action there are trying to obtain efficient results for increasing forest area, nature conservation, protecting endangered species, biodiversity in the long term, not at least achieving positive results on improving the health of people in this area, particularly in general environmental quality.

This strategy was chosen based on the human and material resources during the project implementation. The available funds are insufficient to conduct an effective campaign that would involve local authorities and therefore took into account stakeholder priorities, budget and time required for implementation (CE, 2003).

Financial resources for forest restoration

The National Fund for Environment (NFE) is a financial and economic tool for supporting and implementing environmental projects, in accordance with the legal provisions on environmental protection. The NFE is a public fund, deductible for tax purposes and their income is government income, which includes general government budget, established by a special law that establishes their destinations.

The NFE is established under European principles "polluter pays" and "producer responsibility" to implement environmental protection legislation. The unit responsible for the management of NFE is a public institution with legal personality entirely financed from own funds, in coordination with the Ministry of Environment.

The purpose of NFE operation is the support and implementation of priority projects for environmental protection in accordance with environmental regulations and standards.

The objectives of the Environmental Fund Administration are:

- To continue the implementation of the environmental acquis by funding programs and projects initiated in 2007;
- The stimulation in local authorities, economic operators, ngos and schools interest for elaborating priority environmental projects, by accessing funding from the environment fund;
- Increasing the number of sessions for the submission of projects aimed at environmental protection;
- Promoting the institution's activities through all channels of communication and maintaining transparency regarding the efficient use of the environment fund;
- Improvement of the administrative and financial capacity to finance a large number of projects.

The categories of eligible projects for funding from the Environment Fund are:

- Pollution prevention;
- Reducing the impact on the atmosphere , water and soil ; reducing noise levels ; using clean technologies;
- Management of waste , including hazardous waste;
- Protection of water resources , treatment stations , sewage treatment for local communities ; integrated management of the coastal zone ; conservation of biodiversity;
- Management of protected natural areas;
- Education and public awareness on environmental protection;
- Increasing energy production from renewable sources;
- Reduction of greenhouse gas emissions;
- Ecological restoration and forests sustainable management;
- Afforestation of degraded lands located in deficient forests areas, established by law;
- Closure of lake decantation from the mining sector;
- Works to prevent , eliminate and / or reduction the effects of dangerous meteorological phenomena of the water works related to the objectives of the public area of the state.

Regarding the interested factors in the problem that we are trying to find a solution, we could discuss first of the managing Forest Districts that administrates the forest fund that belong to these districts. We should all be concerned because they are primarily responsible for the Romanian forest fund, ensuring that it is managed properly and reducing a large number of forest area leads to a reduction in jobs and involves locally and regionally failures.

National Forest Administration - Romsilva operates under the authority of the Ministry of Environment and Forests.

National Forest Administration - Romsilva aims at sustainable management unit in accordance with the rules of forest management and forest conditions, forest public property in order to increase the contribution of forests to improve environmental conditions and to ensure national economy wood, other forest products and forest-specific services, and the coordination and implementation of the national program for genetic improvement of horses, promoting national and international valuable specimens herds from the National Forest Administration - Romsilva, organizing sports competitions, fairs and exhibitions, as well as research and development for animal fur (Petrescu-Mag et al., 2011).

According to the Europe Council Regulation no. 1290/2005 on the financing of the common

agricultural policy , there have been created two European funds for agriculture:

- EAGF - European Agricultural Guarantee Fund - to finance the marketing measures;
- EAFRD - European Agricultural Fund for Rural Development - Rural Development for funding.

In Romania, the financial indicator that could be employed for the assesment of forestry projects' impact could be represented by the turnover of the national forestry company and the investments made in agriculture, forestry and fishery. This indicator had an upward trend in the last decade, the only year of fall being 2009, probably as an effect of the spreading of global financial crisis (fig. 4).

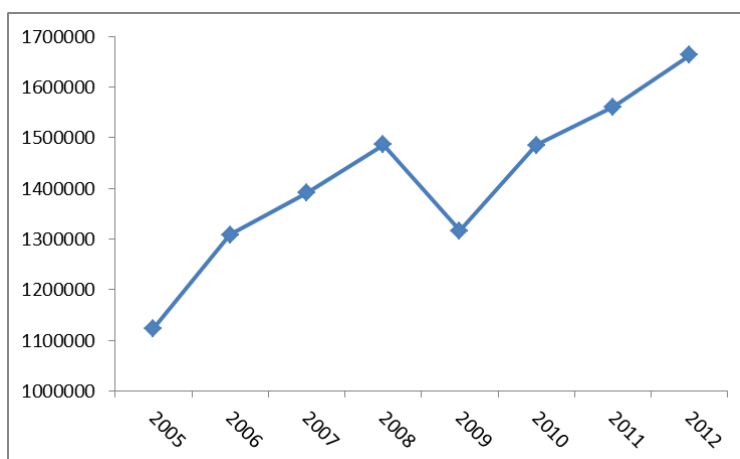


Fig. 4 Turnover of the national forest company

Sources: authors' representation using data from National Forest Company Romsilva

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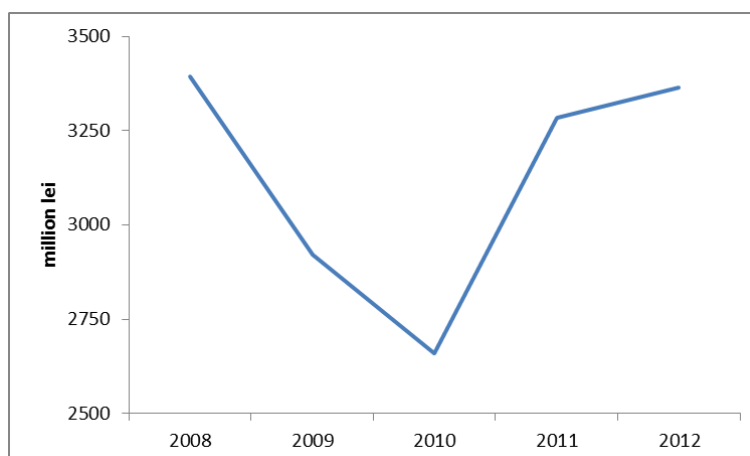


Fig. 5 Investments in agriculture, forestry and fishery in Romania

Sources: authors' representation using data from Statistic Yearbook

Similar information is provided by the second indicator, although the falling is pushed in two years instead of one. The recovery is occuring fast in 2011 and continues in 2012, but with a slower path (fig. 5).

Conclusions

Forests are one of the most valuable natural assets that are also very well connected with the economic system. This connection is intermediated by its main product, the wood that is highly valued on local and international markets. Wood production could be sustained in most temperate forest given the

application of certain management system. This is established by forestry authorities and it is also subjected to voluntary standards like the Forest Stewardship Council.

In Romania the official record regarding the forest area is indicating a favourable situation with a continuous increase of the area covered by forests. Nevertheless, unofficial information sources indicate that hundreds of thousands of hectares are deforested and huge amounts of wood are traded despite their illegal logging origin.

Sustainable forest management requires the promotion of specific actions in the following areas: ensuring the integrity of the national forest, the conditions and within the situation resulting from its change of ownership; completion of national forest to optimum level of 35% of the country; structural reconstruction of damaged forests natural and anthropogenic factors; maintain annual wood harvest volume in the forests opportunities; conservation of biodiversity and stability, health and double-functionality of the forests.

Financial resources for forest restoration or other type of projects are available although the access depends on institutional and financial capacity. They are the national environmental fund, European funds for agriculture, rural development and environment, and more increasingly corporations and non-governmental organizations.

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