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The Impact of Forest Degradation on Rural Communities in Romania

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Abstract: Evoluția societății umane s-a făcut, de multe ori, pe seama utilizării resurselor naturale. Comuniunea pădure-om a reprezentat pentru România mai mult decât acoperirea unor nevoi materiale imediate. Românul „frate cu codrul” a știut să aprecieze, timp de secole, valențele multiple pe care le presupune pădurea. Pădurile, ca element distinct al fondului forestier, cunosc, în România ultimelor decenii, o afectare a stării lor. În paralel cu exploatarea destinată întreținerii și regenerării pădurilor a apărut o exploatare în scop economic care depășește pragul de responsabilitate și normele de tăieri suportate de mediu. Degradarea fondului forestier are un impact major ce include creșterea riscurilor la inundații, alunecări de teren, distrugerea ecosistemelor, degradarea peisajelor, dispariția sursei de subsistență pentru localnici. Dintre hazardele posibile s-a acordat o atenție deosebită inundațiilor deoarece când acestea depășesc codul galben, marchează profund comunitatea afectată. Inundațiile reprezintă un fenomen greu de evitat din cauza frecvenței lor cauzată direct și indirect de defrisări excesive. Managementul riscului la inundații ar trebui să înceapă cu gestionare responsabilă a pădurilor care porneste de la păstrarea unui nivel de despăduriri comparabil cu acea capacitate de regenerare a pădurii. O analiză a percepției membrilor comunităților locale completează lucrarea cu date concrete. Interpretarea tuturor datelor duce la concluzii interesante unele mergând până la aprecierea modului în care legislația ajută la menținerea pădurilor sau permite distrugerea acestui mediu forestier.

Keywords: forest, rural community, deforestation, floods, Romania

JEL classification: Q01; Q51; Q56

1. Functional Polyvalence of the Forest

According to article 1 of the Romanian forest Code, law 46/2008, national forest fund is defined as: all forests, fields for afforestation, those that serve the needs of culture, production or forest administration, of ponds, stream channels, other land with forestry

and non-productive destination, included in forest planning on January 1st 1990, or included therein subsequently, in accordance with the provisions of the law, irrespective of the nature of the property right.

The study of relationship that is now taking shape between forest, as distinct component of natural environment, and human communities, particularly rural areas, as well as elements of anthropic environment should be based on a comprehensive complexity subject, the Multifunction of the two types of items.

Forest meets within territorial system which it belongs, multiple functions, whose analysis must be carried out in relation to the major elements of the latter, through the prism of relations of interdependence and conditioning.

Ecological function is essential as a result of the fact that the forest is a component of natural environment, essential for proper functioning of the latter. Through their relationship develop with all other elements of natural system, has a decisive role in helping to maintain balance. In the specialized literature [Muja Sever, 1994] it talks about the multifunctionality of the forest in the sphere of the environmental protection (of water, land and soil, against climatic factors and harmful industrial, scientific function healthcare of ecofund preservation and forest genofund, the aesthetic-landscape. This function has an indirect impact on the entire geographical system, fact strongly demonstrated in human community behavior.

Economic function is derived from the direct relationship that has been established between forest and human-factor, within the framework of which the second being an active element with high impact on the forest environment.

Forest, by its ability to produce plant biomass and animal, represented in the course of time an important source of raw materials for human. It is one of the determinants environmental factors of rural settlements, offering those communities the necessary resources for survival (equipment required for houses construction and household annexes, domestic heating fuel and for food preparation, the environment conducive livestock farming - in contact between forest and pasture, source of supply with various food products, which complements the food resources or can increase by selling household revenue namely fruit, mushrooms, game, etc. Also, wood exploitation within the framework of certain specialized undertakings, wood processing and achievement of various wooden objects, searched on the domestic market but also external or recouping tourist attraction of the forest, increase considerably its economic value.

The socio-cultural function was born from the join of the two functions and results from the impact on the forest on human behavior. Ecological and economic offers have been completed in the course of the history through the protecting role that the forest had during the periods in which the population of this space was threatened by various dangers, while protecting it from the incursions of various migratory people. Along with the necessary lives resources, the forest also gave people optimal conditions for maintaining physical health. So, we may speak about a cult of "forest", of its relationship with the man, and which can be found in the entire Romanian culture (material and spiritual).

Although it is theoretically, functional versatility of the forest is indestructible, some of the internal relationships to the territorial system, of which it is a part, can be adversely affected causing disturbance for long periods of time, in accordance with the conditions in

which the necessary measures are not taken. Unfortunately, in the past few years, on the Romanian geographical territory, such disorders resulted from changes occurring in a given period from a political point of view, which have deeply affected the relationship man-environment as a result of changes in the field of property in general, the largest forest in particular.

2. Development of Forestry Property Fund in Romania and the Management Mode

Areas occupied by forest, in the past history of the country, amounted to 70-75 %. The forest, Romanian's brother, defended him, inspired him, fed him, sheltered him.

The forest set up, from the most ancient times, a basic element of Romanian geographical territory, the population of this territory feeling in a permanent relationship with the forest both from an economic point of view as well as socio-cultural. This interdependence prevailed by the appearance and strengthens over time of a man's feeling of dependence towards this element of the natural environment, which materialized through the various forms of ownership of forest land. In the specialized literature there are many details of the manner in which it has evolved historically the forest property [Giurgiu, V., 2000].

The process of forest exploitation in an organized manner yet started since the ancient times. It is to be noticed particularly the Romanian period, in which the forests were considered to be „ager publicus“(public goods) and their exploitation shall be carried out by the "forestry colleges" and by the so-called "procuratores saltamos". At that time, a very small part of forest areas could be found in private property.

Later, starting with the principality and voivodeship period and continuing in the feudal, has appeared the form of ownership property (in which several individuals shared the same forest area - ownership property), which has withstood centuries of. On the other hand, it also took shape the royal property, often used by the rulers in the case of donations, in favor of the troop leaders, churches, protégés but also the freeholders in Muntenia and peasants in Moldavia. Thus, large forest holdings have been formed, which belonged to monasteries, nobles but also to rural communities.

First attempt to regulate the way in which forests are operated is represented by the Wood law entered in Radu Negru Monument from 1612. Several princely acts in Moldavia and Wallachia imposed "prohibitions of nature damage". Forest that was subject to this law was protected being prohibited hunting, fishing but also breaking down trees. The Wood law also existed in Transylvania. The need for forestry space management has imposed the formation in Banat (the year 1769) and in Transylvania (1781), of the regular forest service (in the reign of Emperor Iosif II). "Forest organization", printed in 1786 in Romanian and German, can be considered as the first forestry code. This Forest organization of the forest has been enforced in Bucovina, and was mentioned that the state is the one that manages the forests. In the Moldova year of 1792, voivode Alexandru Moruzzi gave a willing subordination (anaphora) to forests and water sides followed, two years later, by another imposed by the chaotic conditions in which were chopping forests - in their place appearing areas denuded of vegetation. Wallachia shall not delay with regulations on forest protection (1793).

In the second half of the 19th century there is a new form of property, that of the state, which strengthens and broadens in 1863, when applying the provisions of the law for monastic wealth impropriation, the government thus becoming a big owner of forest land [Turnock, Lawrence, 2007]. Also, a year later, during reign of Alexandru Ioan Cuza, through its agrarian reform, there was little farmer's forest property.

The forest code of 1881 included rules of the operation and maintenance of forests, it referred to the management and forest property observance. Next Forest code (1910) will be in force over 50 years. By this code shall be under an obligation of submission of a guarantee of 100 lei per hectare, with a view to reforestation. Forest exploitation, regardless of the type of property, it could not be achieved without a planning or regulation of exploitation.

Transylvania, region for centuries under the Austro-Hungarian Empire domination, had a different scheme of forests. Ownership property of Romanian population has been also transferred to the other ethnic groups that are coming in this space over time (Hungarian, Saxons of Transylvania and Szeckler) but also to the church. Subsequently, the form of ownership has diversified a fact that has caused the appearance of conflicts. After the revolution of 1848 it was recognized the serf right to forest property, ordering the breakdown of forest landowners.

Under a law of the year 1871 it was decided the formation by such land the formation of "composesorate urbariale", administered under the guidance of state. Because of the irrational exploitation of the forest by Law 19/1898 have passed in the management of state all forests belonging to those communities that could not only employ a technical staff for the proper management of their own.

After the First World War together with the development of the Romanian unitary state the situation was uniform throughout the country. Has been recognized property rights on forests, as a result of historic development up to 1918. In the inter-war period, the forest fund has been reduced by about 1.3 million ha, one of the reasons being also the Agrarian law in July 1921, by which Romanian peasants have been reinstated (producing, thus, a structural change in the forest property), which has caused intensification of wood exploitation for marketing, major source of income and employment in rural area [Turnock, Lawrence, 2007]. Thus, in 1929 the state had about 30% of Great Romania's forests.

After the Second World War the fund forestry has been subject to significant changes. By the Agrarian reform in 1945 have been carried out allotments with small consignments of forest. In addition, large areas of land (the "war criminals") were transferred into the ownership of the state. Some of the owners who owned large consignments of forest, seizing nationalization approach, have totally or partially alienated the forest properties, selling them to peasants. Thus an excessive crumbling has been caused.

In 1948, as a result of the new measures taken by the communist state, forests of all natural and legal persons were nationalized, becoming "property of the whole people". The state got to manage about 6.5 million ha belonging to forest fund. Cutting down the forests took a controlled course and, even if it has been broken the right to property, the chopping were doubled by afforestations. The 1962 forest code mentions the forest role (they were considered to be among the main natural riches of the country and with a particular economic role). Forest defense was considered a patriotic duty of all citizens.

After the year 1989, there have been many laws, which have marked *the period of transition* Romania went through. First of them is the Law No 18/1991 which decided the restitution of a hectare of forest for former natural person owner, the sequel to consisting of tens of thousands of hectares felled, abandoned and unregenerated. The 1996 forest code was trying to make an adaptation of the legislation to the new reality and it was only in 2008 a Forest code shall be drawn up and shall enter into force that fits also the concept of sustainable development of forests.

Analyzing the evolution of the surface occupied by forests from 1990 to 2012 (fig 1) you can see a reduction of the area occupied by forests, maximum reduction being registered by the year 2004. This reduction is explained by the rise in areas subject to clearings, phenomenon that got out of control in particular as a result of illegal retrocession, abusive. On the graph you can see an increase in wooded area in a manner that has exceeded the level of 1990 to wooded land. Apparently things seem to be back to normal again - National Forest Administration ROMSILVA has purchased land intended for afforestation. At a closer analysis it seems that a series of surfaces have been transferred, declared until recently pastures, in category of forests (as a result of running or planning to run, afforestation works). This increase, on the background of massive slaughter of trees, most of the times beyond the legal limit, it is difficult to explain: either the survey that was made revealed areas larger than each other knew, or have not been correctly declared the areas covered by woods so as to be able to exploit on wooded "non-existent" land. A correlation with the information supplied by the graph in figure 2 can be considered that there was a moment in which it may be possible to be recognized the decrease of wooded area (year 2000) after which they have been seeking solutions so that in the statistics to hide the reality from the land.

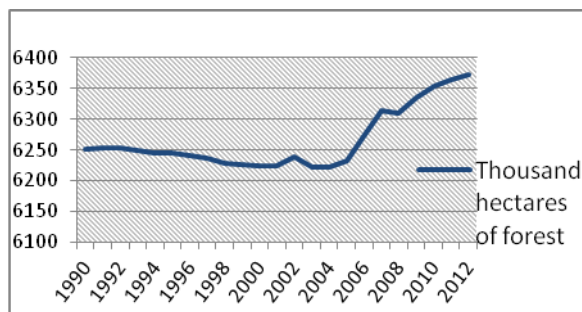


Figure 1: Developments in occupied area of forests (source INS)

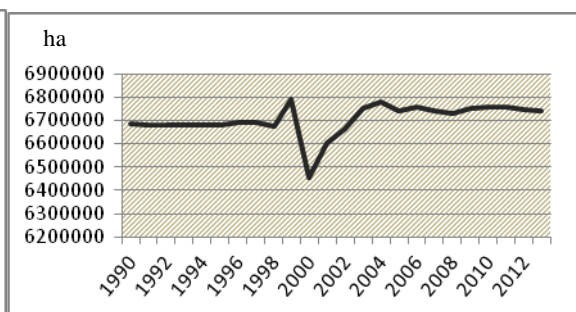


Figure 2: Developments in occupied areas of forest by forest and other forest vegetation (source INS)

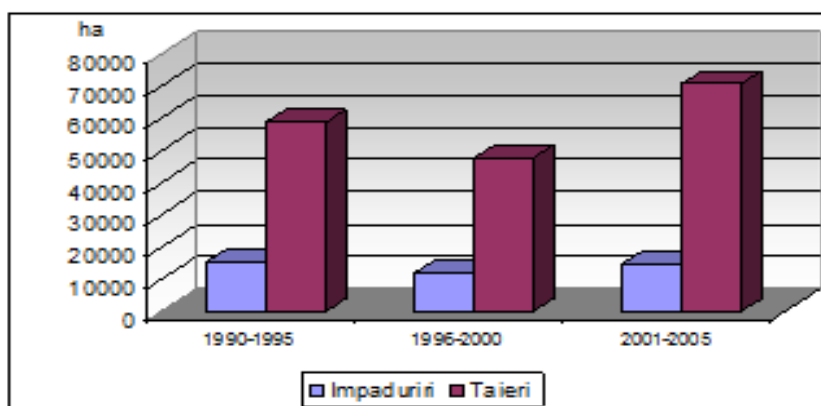


Figure 3: The evolution of afforestation and deforestation activities

The phenomenon which has determined that fall in the forest areas, in 2000 can be explained by the graph in figure 3. It can be seen, in parallel, the manner in which the afforestations and slaughtering of trees have evolved by the year 2005. Wooded areas represent less than 50 % of the surface area of forests affected by cuts. Notice also the fact that the time period 2001-2005 was marked by an increase, an increase of wood chopping from forests.

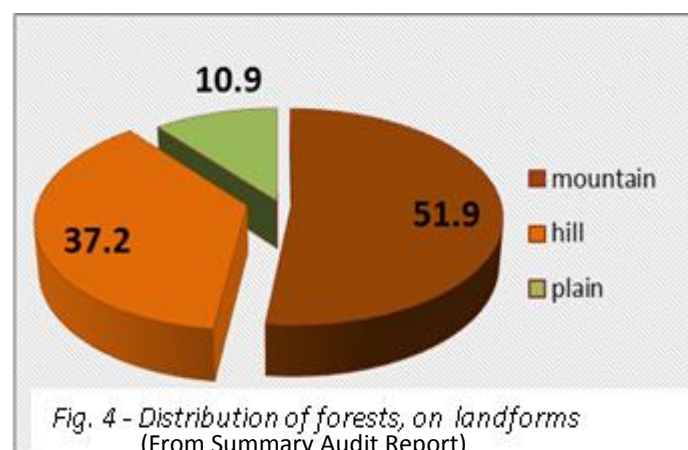
The 1996 forest Code set up punishments for cutting of trees that did not observe the forest planning, including those carried out on the private property (on forest). In summary Audit report on the "Patrimonial situation of forestry fund in Romania between 1990-2013" it highlights local authorities' complicity of the authorities who have allowed reconstitution of the ownership of forest areas without a judicious analysis of the content file. For example: for persons without vocation succession or open files on the basis of mandates made abroad and whose authenticity could not be checked), with the granting, sometimes, of areas larger than those held by former owners.

All of these actions have been endorsed by some courts who have allowed ownership restoration on areas larger than those held in reality by the applicant, or have refused State's right to defend the ownership by the appointed administrator. They have also accepted requests by asking for ownership recognition of forest land expropriated engraved by tasks in favor of state or have admitted applications on the basis of which it is had been returned in full areas requested from the land fund even though the request was not made and signed by all members of the heirs associative forms.

3. Malfunctions of Environmental Forest Exploitation - Risks and Catastrophes

Forest space exploitation is marked by a few coordinates. On the one hand, one can talk about the required operation for maintenance of forest environment, operation involving work of regeneration (in their frame entering also slaughtering of regeneration and for the removal of brushwood), works to protect, collection of specific products (mushrooms, fruit, hay, medicinal plants).

On the other hand, commercial size that fits both primary cutting and trimming of the trees, transport and marketing average wood - both as firewood and as a raw material for the manufacture of wooden various objects.



Forests know in Romania last decades, a dangerous degradation. At the level of 2012, Romania had an area of about 26.8 % occupied by forests, under the circumstances in

which areas declared to be occupied by forests have increased almost constantly since 2004. This increase, on the background of massive tree cutting, most of the times beyond the legal limit, it may have a more detailed explanation (defective cadastre, the inclusion of new woodland areas, etc.). Illegally felled areas are to be found, statistically, in the areas covered by forests. We are below the European average (32.4 %) and very far away from Slovakia who holds 57% of the country's surface, woods [Grigorean Maria Loredana, 2009]. The specialist in forestry, Victor Giurgiu, made an important remark concerning the quality of woodland areas which Romania holds at this point namely that, unfortunately, many forests are degraded, ill, non-working [Viorel Giurgiu, 1998]. The distribution of forests, on landforms, is not uniform (fig.4). In areas with slopes the percentage of forests is greater. Destruction of forests (by untidiness, illegal cutting) can have serious consequences in the medium and long term. The denuded slopes trees lose their ability to secure water from precipitation favoring sand drifted those processes, torentialitate. Water originating from precipitation is no longer fixed on slopes and will give rise to an erosion of the soil and a transport toward the base of the slope. If precipitation occurs are abundant drives solid material found on slopes (woody fragments, fragments minerals) and the re-allocation settlements at a lower rate.

To assess the risks that arise as a result of cutting forests it must be identified the risks. Multi-criteria analysis which takes into account frequency risks' occurrence, their duration, damage to which they give rise in extreme weather phenomena allows the assessment of increased risk in the case of heavy rainfall. Floods are events with a predictable character to the extent that it can be done a meteorological assessment in the short and medium term (under normal conditions, without aggravation of local factors - see land clearing).

The year 2005 represented the development of flood climax on the territory of Romania, being considered to be the most severe in the past 35 years. So, out of the 160 meteorological stations existing in service at Romanian level, to 76 have exceeded multiannual environments, in the warm semester, with more than 50% [Dragotă, 2006]. Average quantity of precipitation throughout the territory was 866.5 mm with a surplus of 33.9 percent as compared to the 647 mm as well as represented climatological normal from the period of observations. In the warm semester monthly quantities and those that have fallen in 24 hours have been exceptional, exceeding in many cases historical records in the whole period of observations. With the exception of June and

October months, all the other was in surplus from the pluviometric point of view with monthly higher average than the annual average value [Bogdan, Marinică, 2007].

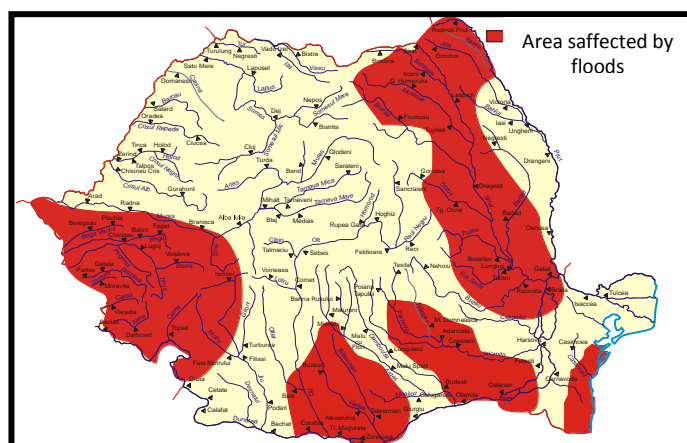


Figure 5: River basins affected by floods in the year 2005

As a result of this situation, there have been major floods in almost all regions of the country on stretched out (fig. 5): in Bega river basins, Timiș, Bârzava, Moravița, Caraș, Nera and Cerna (in April), and in the middle basin of Olt and in those of Jiu, Ialomița, Mureș and Târnaveilor (in the coming months of May, June and July), on Criș, Mureș, Olt, Vedea, Argeș, Ialomița, Buzău, Bistrița, Bicăz, Tarcău, Troțuș, Tazlău, Putna, Șușița, Râmnicu Sărat and Siretul inferior (in July-August).

Floods resulting from spills of water courses from discharges and damage to the dams and small build-ups, the leakage on slopes, as a result of severe weather phenomena, have affected 1734 localities in all counties in the country, the total amount of damage being estimated at 5 975 201.5 thousand RON. Infrastructure has suffered major damage, being recorded damage to 9,861 km county and municipal roads, 560 km national roads, 2,466 km streets in localities, 2,645 km forest roads, 9113 bridges and footbridges, 24 km railway, networks of water supply, electrical and telephone networks. There have also been seriously damaged 630 hydrotechnical buildings acting as defense against flood, mainly dikes, enforcement and defense of banks, adjustments of watercourses, which have necessitated urgent work of restoration. Along with all these losses have been also recorded human beings, 76 people being declared dead [***, 2006].

Conclusions

All the studies carried out over the last few years, have underlined the role that the forest represents in the economy and the normal existence of this people. Economic reasons have exceeded, in many cases, legal behavior in relation to forest management and forest fund, as a whole.

Nature seeks to find its balance which man, in his recklessness, hurts it. Where it can no longer regenerate, produces disasters as warnings for thoughtless human actions. What is there to be done? New laws? Existing laws, whether it would have been complied with, maybe it would have led to a different situation, a normal one in which the forests would have plenty of time to recover and afforestations to perfectly double or even to exceed cuts of wood mass.

We believe it was a mistake the uncontrolled restitution of forests (especially in the areas where there were no real acts), a mistake for which no one will pay. What else can be done at this point? Restricting the right of cutting for all forest owners, the state remaining the only entitled to decide, by its authorized bodies, the management of wood mass.

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