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Deforestation – a Necessary Imperative or the Paradox of our Times

Cristian Florea¹, Cristina Ciovică², Alexandra Gălbează³

Abstract: The green space, the forests, is a precious space of our planet. The “lung” that we really need, stretches across mountains, hills, plains and water banks. It covers almost one third of land’s surface. Globally, the widest green spaces can be found in Russia and South America. From this proportion, more than two thirds of the total extent of forests is occupied by deciduous trees and about half is represented by tropical forests. Earth is hedging at the beginning of the third millennium, moment in which globalization and its effects, the food crisis but, also, the reducing of green space become fingerprints harder to hide. The current article aims at emphasizing the present global, regional and national situation regarding forestry.

Keywords: green space; deforestation; desertification; climate change

1. Introduction

Earth's population recorded a figure of 7 billion people in the 4th quarter of 2011. An impressive increasing pressure from the growing global population is being experienced, fact demonstrated through a growing food and energy necessary. The current context has forced the nations to shift the volumes of available natural resources, transforming technology into a true asset, especially through renewable energy: wind, solar, geothermal, biomass and water energy. Therefore, we are facing a growing tendency to use these resources more often.

2. The Forest – Limiting Factor of Anthropogenic Pollution

Among its many roles, the forest is aimed at reducing the pollution that the human being has accumulated and still accumulates nowadays. Experts say that the “Forest is an environmental protection factor and an ecological balance retention one, by performing functions such as water, land and soil, atmosphere and biodiversity protection” (Bran & Ioan, 2004).

Also, it should be explained that the forest ecosystem functions are represented by (Candea & Bran, 2001):

- the production function - containing timber and secondary products;
- the protection function – presenting a protective role of soil erosion, of water regime, but which also offers a protection against climatic factors;
- the health function - in this case one can speak of forests as climate modeller;
- the recreational and leisure function – the forest seen as hunting or tourist fund, offering the possibility of camping and emphasizing in the same time the recreational function;
- the aesthetic function – last but not least, it offers a great background scenery for both viewers and specialists, photographers, etc.

Therefore, forests, in general, have a beneficial role for the planet, but, especially, for humans and

¹ PhD, Bucharest Academy of Economic Studies, Romania, Address: Piața Romană 6 Bucharest, Romania, tel: +4021 319 1900, Corresponding author: cristy.florea@gmail.com

² PhD, Bucharest Academy of Economic Studies, Romania, Address: Piața Romană 6 Bucharest, Romania, tel: +4021 319 1900 e-mail: chi_che2002@yahoo.com

³ PhD, Bucharest Academy of Economic Studies, Romania, Address: Piața Romană 6 Bucharest, Romania, tel: +4021 319 1900 e-mail: alexandra.galbeaza@gmail.com

various creatures. First of all, forests are a source of oxygen and it is known that two-thirds of the oxygen consumed by creatures, vehicles or industry is offered by forests. Secondly, the forest is a natural filter because fine dust or ashes are retained by the crowns of the trees. Forests also prevent soil erosion and stabilize local climate, preventing the aridity and drought phenomenon. Last but not least, the forest is the source of wood for human consumption and a source of drugs made from a series of natural plants.

3. The Global Forest Situation

In 2005 there were less than 4 billion hectares of forests across the globe. These provide food, herbs, heating sources and many other needs for a population of approximately 1.6 billion people. It is said that more than two thirds of primary terrestrial species are living in the forest. During 2000-2005, the net forest loss rate was 7.3 hectares per year, while the deforestation caused almost 20% of the annual greenhouse gases in the 90's (FAO, 2005; Millennium Ecosystem Assessment, 2005; IPCC, Fourth Assessment Report, 2007 in UNFCCC, 2007). Although deforestation occurs in certain areas using a long-term oriented method with the main goal of allowing forests to regenerate themselves, the deforestation phenomenon reached vast proportions, pulling alarm signals in many areas of the planet. The Explanatory Dictionary of the Romanian language (1998) emphasizes the fact that deforestation means a removal of trees by cutting or burning them in order to expand the land for agriculture, grazing or living or to afforest it again. Actually, this is rarely accomplished.

We have noted a deterioration of the habitat, of the climate, a stressed reduction in biodiversity and an emergence of wider arid areas, situation that is allowed through the indifference of people and a bad management application of these natural resources, as well through the existence of a permissive legislation in this field, inadequately rigorous and severe, which led to massive deforestation. The UN reported that Africa, Latin America and the Caribbean are the regions with the highest rate of deforestation, the figures being alarming: 32 million acres of forest disappear each year. However, countries with a GDP per capita equal or more than 4,600 American dollars showed that net deforestation rates have ceased to grow. China stands out positively, because after the year 2000, has reported an increase in the forested areas, while investments in planting trees managed to fight the huge exploitation forest tendency from the Mekong Delta region.

We can currently mention only three large existing forests on our planet: the Brazilian Amazon, the boreal forests of Russia and those from Canada.

Regarding the rainforests, these are found between the Tropic of Capricorn and the Tropic of Cancer. Areas such as Central and South America (the Amazon Basin), West and Central Africa (the Zaire River Basin), Isle of Madagascar, South-East Asia and Pacific islands have tropical forests, as it can be seen in the picture below:

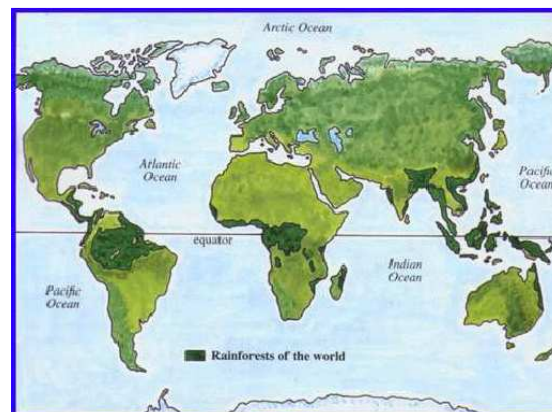


Figure 1 Location of tropical forests

Source: <http://www.srl.caltech.edu/personnel/krubal/rainforest/Edit560s6/www/where.html> (Anon., n.d.)

A special place is occupied by the mangrove forests because these live in the wet tropical shores, only there where significant oscillations of the sea level can be recorded during the ebb and flow. The tropical climate brings along hot and wet weather, with a lot of rainfall during the monsoon (from May to October). The largest mangrove forest in the world, Sudarbans, is found in India and Bangladesh, covering 56 islands. Within this space there were recorded more than 110 species of fish and 270 species of birds. Today, the Bangladesh saltwater crocodiles count less than 200 individuals and, still here, there is one of the most endangered species in the world, the Bengalese tiger. For this reason, in 1987 the Sudarbans mangrove forest was registered on the World Heritage List because of its importance.



Figure 2 Mangrove forests

Source: http://forestry.about.com/od/rainforests/ss/mangrove_forest.htm (Nix, n.d.)

Because within the boundaries of mangroves soils are saturated with water, the air is hard to breathe, situation caused by the sulphur compounds released during decomposition of organic substance from the soil which is deprived of oxygen. If these mangroves are cut down, acid soils will be formed and acid spills will occur in streams as well. In this case, the pH of water decreases a lot, which affects the life of fish, fact also reinforced by the appearance of some toxic solid elements such as heavy metals, or aluminium (Anon., 2002).

Globally, there is a small number of species of trees known as mangroves, but these are characterized by great diversity and can be compared with rainforest biodiversity (Messina & Conner, 1998).

Currently, a comprehensive project for forestation with mangroves is being developed in Indonesia. In numbers, it aims to plant 115 hectares, which means 4500 of trees per hectare. It is intended that in 30 years from project implementation 100 million tons of carbon dioxide to be absorbed (YL Invest Co., Ltd., 2011).

4. The European Situation of Forests

Europe was known as a green continent, with various forests, with more than 80% green land. Nowadays, we cannot talk at all about such a thing, because Europe has gone through a period of massive deforestation and now it owns only 44% of that forested area. This is why I considered it necessary to review some of the most important forests in terms of biodiversity.

Trillemarka and Rollagsfjell forests in Norway

These forests have a total area of 205 square kilometres. Although they can be found at a small distance from the Oslo capital, the old characteristics of the Norwegian forests are maintained, here existing the largest population of lynx and gluttons from Norway. According to Eurostat, Norway had in 2010 a total of 12,768 thousand hectares of forested areas, with only 768 thousand hectares more than in 1990. But the wood volume increased from 736,649 thousand m³ in 1990 to 1,001,920 thousand m³ in 2010.

□ *Brothwood Corpse Forest* from the UK

Great Britain has a more negative situation, because the only forests that can be found are on the Isle of Wight. For this reason, only 2,901 thousand hectares are forested areas, with less than 300 thousand hectares more than in 1990. At the end of 2010, Great Britain's wood volume amounted to 379,110 thousand m³.

□ *Beloveja Forest* in Poland and Belarus

Although it doesn't have such a large forested area as in Norway (9,337 thousand hectares compared to 12,768 thousand hectares), Poland currently has a wood volume two times bigger than the first country (2,049,000 thousand m³). Forests cover today about 1,771 square kilometres, being part of the Mazurieni Forests.

□ *Pyha Hakki Forests*, Finland

In Finland, we can find a forested area of 23,269 thousand hectares of which 13 square kilometres are represented by the Pyha Hakki National Park, strictly protected since 1952. The total wood volume in Finland amounts a value of 2,195,138 thousand m³.

□ *Deciduous forests of the Apennines*, Italy

The Apennine Mountains own as heritage one of the most special European forests. Nevertheless, at Italian level, forests occupy an area of 10,916 thousand hectares, while the available wood volume gets to 1,393,753 thousand m³.

The chart below shows the forested area of some European countries, figures being expressed in hectares:

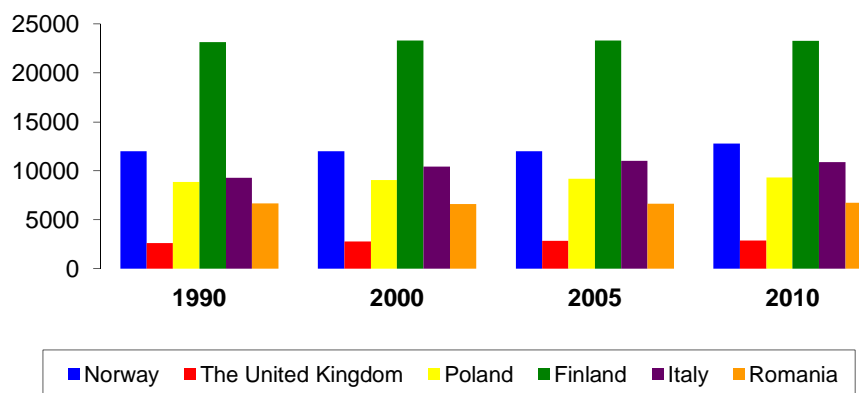


Figure 3 Forest areas (hectares)

Source: author's interpretation using Eurostat data (2011a)

Figure 4 expresses the available wood volume of some European countries (the volume is expressed in thousand cubic meters).

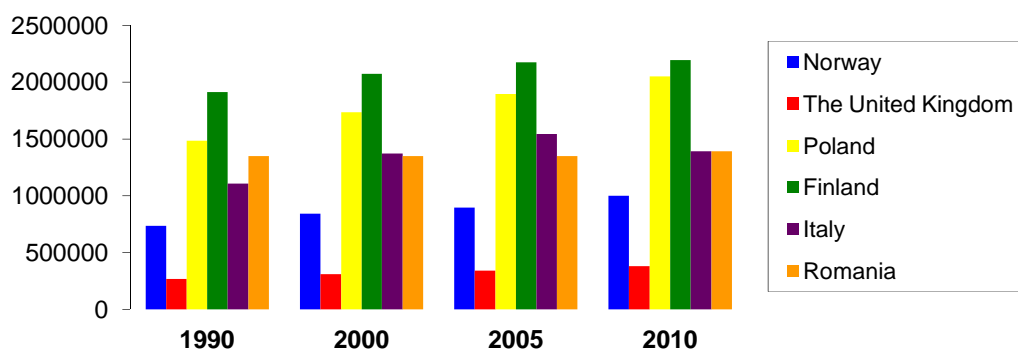


Figure 4 The available wood volume (thousand m³)
 Source: author's interpretation using Eurostat data (2011b)

We can notice therefore a trend towards improvement of the existing green space in each analyzed country, both in terms of forest area and available wood volume.

5. Forest Situation in Romania

At national level, the Romanian forests occupy at the end of 2010 a total area of 6,515 thousand hectares, according to the statistics reported by SILV1. Compared to 2009, an increase can be seen in 2010 with 20 thousand hectares (approximately 0.3%) of green spaces, because of the intervention of NGOs and the media in this case.

Taking into consideration the property categories, the national forest area can be presented as follows:

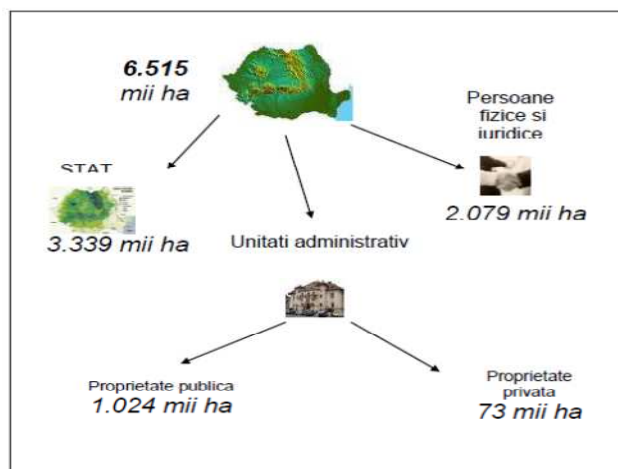


Figure 5 Forest areas in Romania
 Source: The Ministry of Environment and Forests, 2010

Romania has become increasingly interested in this subject as it began to face some problems such as soil erosion, flooding in the region of Moldova and desertification especially in the Oltenia region and, for the future, Dobrogea, the Southern of the Romanian Plain and Moldavia were identified as high risk areas of desertification.

Numerous studies concerning the impact of global warming in Europe place Romania next to countries such as Spain, Italy or Greece, nations which have a high risk of desertification. The most affected county, which outperforms all the other areas, *Dolj*, has been recording desertification for

several years as a result of drought and more and more sandy soil. Cities like Calafat, Bechet or the village of Dabuleni have recorded the most arid soils in Romania, as a consequence of deforestation and climate change.

6. Conclusion

Among the top threats of the 21st century there is the food crisis, the pollution and, its reverse, the climate change.

Already, uncontrolled human actions make their presence known globally through unimaginable consequences. The irrational cuts of the last century have led to desertification, destruction of many terrestrial and aquatic species, global warming, as well as to a higher pollution rate despite the different conventions and treaties signed with the purpose of reducing the harm caused by deforestation. For this reason, Thailand has lost in the last 20 years more than three quarters of the forest area (Gore, 1995).

In a fully joint effort, countries all over the world will have to find viable ways of solving these problems, creating for future generations an air, a planet and an environment at least as clean as it is today.

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