THE CONSEQUENCES OF DEFORESTATION ON THE EVIRONMENT

CONSECINȚELE DESPĂDURIRILOR ASUPRA MEDIULUI

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Abstract: *The purpose of this research paper is to study the consequences of deforestation on the environment. This paper has focused on the causes of deforestation, solutions against it, the reducing of forest surfaces and the effects of deforestation.*

Rezumat:*Scopul acestei lucrări este de a studia consecințele despăduririlor asupra mediului înconjurător.În această lucrare s-au urmărit etapele: cauzele despăduririlor, soluții împotriva defrișării, reducerea suprafețelor de pădure și efectele despăduririlor*

Key words*: deforestation, ecologic balance, afforestation, subsistence agriculture*
Cuvinte cheie*: defrişari, echilibru ecologic, împăduriri, agricultură de subzistență*

INTRODUCTION

Deforestation represents the totality of actions through which forests are obliterated due to natural causes, but also anthropic ones.

The functions of the forest in maintaining the balance of the environment:

- preserving and improving the quality of the environment;
- adjusting the temperature;
- purifying the air as source of oxygen and maintaining its humidity;
- edaphic, aesthetic and ecologic function;
- erosion function;
- participating in the hydrologic circuit.

Thus, it is most obvious that the functions related to the environmental balance are more important than the function of raw material for human activities.

The need for wood, deforestation for the purpose of agricultural surfaces, roads and railways, fires, mines, fuel are all causes related to deforestation. In the last two centuries, the number of population grew, thus more space for building and agriculture was needed.

Alongside with wood commerce which intensified in the past years, all the other causes have lead to an unprecedented degradation of the forests. The most important cause of deforestation is wood commerce. The issues occur when the soil is not granted enough time to regenerate and intensive agriculture leads to its final degradation. Similar to crop movement, cutting down trees for commercial purposes can be done with minimum implications in the environment. When the number of cut-down trees is larger than the number of planted trees, wood becomes a serious matter.

MATERIAL AND METHODS

The causes of deforestation can be the following:

- natural causes: natural haphazard (eruptions, earthquakes, landslide, avalanches ,for example: Peru 1970- an earthquake destroyed the woods extending over a surface of 70.000 kmp.; 1980 –the eruption of the volcano Saint Hellens);
- fires (those triggered by natural causes as well as those triggered by humans, for example: 3,7 mil. ha were destroyed in Indonesia in 1983, Australia 1994 – 800.000 ha);
- anthropic causes: cutting down (for household consumption, industrial raw material).

Annually, about.3.5 billion mc of wood are being exploited (especially in the warmer regions), while the capacity of regeneration is of only 2,7 billion. mc.

The most obvious solution is ceasing the process of deforestation and thus, putting an end to the deterioration of the environment. Worldwide commerce with wood has become a 5 billion dollar business, consequently, stopping deforestation will be deemed with hostility. Nevertheless, there is a possibility that a total blocking of deforestation is not needed. Probably though, the most important step is educating and informing those people whose decisions have a direct or indirect impact on the status of forests. Indigenous people can be helped out by conservation organizations for a better use of the natural resources. On the other hand, consumers from developed countries should understand the negative impact that the purchase of products has on the equatorial woods. This is why conservation organizations attempt at indicating consumers alternatives to these products and encourages them to make informed decisions concerning their lifestyle.

At the level of the Earth, forest surfaces were reduced from about 9 billion ha in antiquity to 4 billion ha nowadays, with serious consequences at the level of the hydrological balance, erosion acceleration, soil and climate degradation, for example: the diminishing of wood biomass; the alteration of landscapes, the reduction of biodiversity. Some countries have leading policies of afforestation, thus enlarging their forest surfaces (for example: Germany 41% of the current surface as compared to less than 25% in the past 50 years). In the last 10 000 years, the wooden coating of the planet was one third shrunk due to the deforestation for agricultural surfaces, pastures or human settlements. Despite the fact that this evolution continues, the tropical forests being reduced annually with about 17 million, the need for its most valuable use, wood, is continuously growing. Meanwhile, the necessity of preserving the forests becomes more and more obvious, by recognising its determining role in the conservation of climate conditions, land and water resources stabilisation, or in ensuring the biological diversity. Several types of countries can be distinguished according to the percentage of a forestation:

-countries with enough forests (in Asia, Oceania, Central America);
-countries with scarce forests, but which are still within the limitations of ecological balance (in Europe and North America);
-countries with extremely poor forests (in Tropical Africa, Australia).

On the whole, the closest status to that of ecological reference is held by South America, being the continent with the largest percentage of afforestation (46,7 %). In Africa, deforestation has become dramatic, especially in Algeria, Egypt, South Africa. Sahara was severely affected, becoming a barren desert out of a fertile, partially-afforested region.

In Ghana, Nigeria and Kenya huge areas are being deforested and transformed into agricultural lands. The Republic of Malgasa is a seriously damaged area as all the forests in the west and north has completely disappeared, leading to the extinction of species of birds unknown in other parts of the world. The only part of Africa which is more or less intact and which has considerable forestry potential is the equator (Zair, Gabon, Nigeria, Congo).

In Asia, the desert has replaced what was once forest (Hindustan, Iranian, Arabic, Sirian). The Babylonian clay tablets discovered in the Dead Sea talk about vast crops of cereals, orchards, vineyards, cedar woods which occupied a continuous area from the Taurus Mountains (Turkey) towards the Lebanon and Aman Mountains (Syria) and Cyprus. The massive cutting down of cedars lead to a modest reservation of cedars nowadays.

Just as strong was the impact in the Extreme East. The greatest damage took place in China, in the river basins of Huanhe and Iantzi. In North America, although forests were well preserved until the colonists arrived (18th century), they subsequently suffered the fastest and most violent transformation in the history of mankind. Forests were affected in such way that

only 311 million ha were kept out of 382 million ha, of which 216 million ha are productive, 6 million ha are reservations and 89 million ha are degraded woods. In South America, deforestation took place unequally, according to the degree of accessibility and propagation direction of the demographic pressure. The most affected area was Eastern Brasil, Columbia and Chile. The Amazonian forests are liable to degradation and destruction due to means of transport- The Great Amazonian Magisterial network.

The cutting- down, the irrational destructions lead to the loss of woods as much as to financial loss, or the loss of human lives (the case of Northern Italy, where on account of deforestation, floods had devastating effects)

Human kind loses annually about 20 million hectares of woods, a surface equal to that of Great Britain, and deforestation has as consequence the issuing of millions of tons of carbon dioxide. Despite the various rhythms of deforestation in different regions of the world, specialists are unanimously claiming that if action is not being taken, the rhythm of deforestation will lead to the total obliteration of forests b the end of this century, the consequences on human life on planet Earth being disastrous. Europe and North America have managed to cease the process of deforestation after many centuries, according to a recent ONU report. The countries with the most serious issues regarding the management of afforested surfaces are the poor ones or those involved in conflicts, while in the USA deforestation has stagnated and in Europe it backed off. The regions with the highest rate of deforestation remain, according to the ONU report, Africa, Latin America and the Caribbean. Experts indicate worrying numbers: 32 million de ha of forest disappear each year, though deforestation in net numbers, the difference between what is being cut off and what is plated instead has decreased in ten years from 22 million to 17 million ha per year. There are areas where after the year 2000 a growth in the surfaces covered by forests was registered, especially in China, where investments in the planting of juvenile trees have managed to abolish the tendency of irrational exploitation of forests in other regions.

RESULTS AND DISCUSSIONS

According to the latest ONU report, the planet's forests disappear faster and faster mainly because of the Soya and palm-tree plantations. The illegal exploitation of wood is another problematic issue; about 20% of the planet's forests are deforested illegally, this phenomenon being encountered mostly in Africa. This continent has lost about 4 million hectares of wood during 2000-2005 which represents a third of the global deforestation. Taking into account that Africa holds only 16% of the world's forests, the balance is worrying. The growing need for wood in Europe will probably encourage this phenomenon even more. Although the numbers are apparently positive for Asia-Pacific, they show a decrease in the biodiversity. The afforested surface was larger in 2005 than in 2000, but this is due to the afforestation process in China.

Natural forests continue to be exploited, but the practices are being hidden by the statistics. All countries of Latin American had decreases in the afforested surfaces between 2000-2005, except for Uruguay and Chile, which benefited of similar programmes as those in China. It is estimated that the economic crisis will worsen the situation on a short term, the decrease of wood request on the market will reduce the interest in programmes of efficient forest management. On a long term though, the report forecasts that investments in the sustainable management of forests could create 10 million new workplaces at a worldwide level.

At a global level, 60% of the total number of deforestation is determined by the subsistence agriculture. They are like scars which can be seen even from space.

If we want to preserve our forests, we will have to solve the issue of poverty which determines the population of poor countries to deforest extended surfaces of tropical forests in order to practice agriculture to earn their living or to make profit. Tropical forests constitute the most important source of biodiversity. Their destruction triggers incommensurable losses which endanger life on earth and the survival of the human race and its expansion. The conquest of space will be eventually possible to due human intelligence, but also the biosphere.

In Romania, forests occupy a surface of about 6,2 million ha, representing 26 % of the total surface of the country. In prehistoric times, forests occupied 70-80 % of the country's surface. In 10 years, Romania was left without 130.000 hectares of forest. Since 1990 up to 2000, Romanians deforested over 130 000 hectares and the wood was mainly sold for export.

These shocking data have been communicated by the specialists from the Research Institute of Forest Landscaping who studied by means of satellite images how much the Romanians deforested. Although the data for 2000-2008 hasn't been finalised, it is forecasted that the pace of deforesting has grown about ten times. Harghita, Covasna, Satu Mare, Suceava and Maramureş are just a few of the counties where entire forests disappeared. As a consequence of this phenomenon, in the last to year's floods which were inexistent in the previous years and which produced serious damages were registered. Just in 2008 alone, the police officers discovered over 5000 forest felonies throughout the country. Moreover, 30 000 cubic meters of wood were confiscated. In **Argeş**, **Dolj** and **Galaţi**, storms and desertification threaten the few forests left. In Galaţi, the forest surface currently registered at the Forestry Department exceeds 37 000 hectares, out of which 25 000 are part of the state forest fund and 13 000 ha of woods were deforested in the past years.

CONCLUSIONS

Once destroyed, the forest, the soil which accumulates in more than 1000 years, could disappear in one decade leading to floods as the soil will be incapable to retain water. The most disastrous effect that deforesting could entail is aimed at the climate of the planet. We have all heard about the dangers of global warming and the greenhouse effect, the main cause of which is the accumulation of carbon dyoxide in the atmosphere. The trees and other green plants absorb the carbon dioxide through photosynthesis, while animals consume the oxygen and exhale the carbon dioxide. The destruction of the equatorial forests would produce a tremendous imbalance in the quantity of carbon dioxide produced and recycled, thus, it would lead to its accumulation in the atmosphere and to major alterations in the climate. In addition, many cut-down trees for the purpose of agriculture were burnt and left to rot releasing even more carbon dioxide in the atmosphere. Another consequence of deforesting is closely related to the scientific possibilities that could have been lost together with the forest. It is estimated that only a small part of the plants and animals that live in the equatorial forests were identified, while most researchers agree that these could represent the key to the discovery of „cures" for some of the deadliest diseases. For example, the American Research Institute of Cancer enlisted more than 3000 plants with anti-cancer properties, 70% of which can be encountered in the tropical forests.

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