

THE EFFECT OF GLOBAL ENVIRONMENTAL HAZARDS ON ECOSYSTEMS

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The global climate is changing and human activities are contributing to that change. Scientific research is required to improve our ability to predict climate change and its impacts on countries and regions around the globe. Scientific research provides a basis for mitigating the harmful effects of global climate change through decreased human influences (e.g., slowing greenhouse gas emissions, improving land management practices), technological advancement (e.g., removing carbon from the atmosphere), and finding ways for communities to adapt and become resilient to extreme events.

There are considerable numbers of damaging practices and activities affecting biodiversity in Romania and the possibilities for reducing damage to biodiversity are large. The existence or absence of pollutants is related to the technology applied in different industrial branches, which proved to be inadequate in keeping the surrounding environment safe. Keeping the polluted vegetation at the best life parameters require taking urgent actions in order to prevent or to stop its degradation processes.

The first step is to respect some of the Priority Actions for Biodiversity Conservation: elaboration of a model administration (for 5-6 agro ecosystems districts with representative bioclimatic zones and layers) for the sustainable management of agro ecosystems in a manner consistent with the principles and actions required under the Convention on Biological Diversity and elaboration of a model administration (for 1-2 grassland administration districts) for the sustainable management of grasslands.

The ecological reconstruction of certain damaged systems will be guided so as to help ensure a congenial condition of conservation of the more vulnerable species.

Second, is important to establish an adequate policy, legal and institutional framework allowing for the development and implementation of policies and measures in the field of climate change.

Keywords: climate change hazards environment ecosystems.

In modifying natural ecosystems for our use, we usually simplify them: we plow grasslands, clear forests, and fill in wetlands. Then we replace their thousands of interrelated plant and animal species with one crop or with one kind of tree—called monocultures, or with buildings, highways and parking lots. Our action should take into account the second law of ecology, or principle of connectedness: everything is connected to and intermingled with everything else; we are all in it

together. There is no independence in nature. Cultivation is not the only way people simplify ecosystems. Another problem with the simplified ecosystems and habitats we create is that they leak. Nutrients are quickly lost from monoculture crop fields, tree farms, cities and suburbs and must be replaced at great financial and environmental cost.

Another face of sustainable living is to help heal wounds we have inflicted on nature. Luckily much of the environmental damage we cause is reversible. Forest can be replanted, topsoil can be replenished, streams can be cleaned up, and wetlands can be restored. Researchers are creating a new discipline of rehabilitation and restoration ecology devoted to renewing damaged areas and ecosystems.

The nonliving or a biotic component on an ecosystem is physical and chemical factors that influence living organism. Important physical factors affecting ecosystems are: sunlight and shade; average temperature and temperature range; average precipitation and timing; wind; latitude; altitude; nature of the soil; fire (land ecosystems); water currents (aquatic ecosystems); amount of suspended soil material (aquatic ecosystems).

The following are important chemical factors affecting ecosystems: supply of water and air in the soil (land ecosystems); supply of plant nutrient dissolved in soil moisture and in water; level of toxic substances dissolved in soil and in water; salinity of water; level of dissolved oxygen. An ecological principle related to the law of tolerance is the limiting factors principle: too much or too little of any a biotic factor can limit or prevent growth of a population even if all other factors are at or near the optimum range of tolerance. Such a factor is called *limiting factor*.

Limiting factors in terrestrial ecosystems include temperature, water, and light and soil nutrients. For example, suppose a farmer plants corn in phosphorus-poor soil. Even if water, nitrogen, potassium, and other nutrients are at optimum levels, the corn will stop growing when it uses up the available phosphorus. Here, phosphorus determines how much corn will grow in the field. Growth can also be affected by too much of a biotic factor. For example, too much water or too much fertilizer can kill plants.

MATERIAL AND METHODS

When a degraded ecosystem is abandoned, in most cases it will eventually recover, at least partially, through ecological succession. But natural restoration usually takes a long time.

One of the principal methods for reducing the global environmental hazard is the development of an improved integrated monitoring system for environment factors, the development of an efficient information system, which should enable a prompt response in emergency situations. Also, the promotion of the modern principles of sustainable management, including a rigorous control on the pollution sources. We have to promote the rational utilization of the agricultural potential, sustainable rural development, in view of bettering the living and environmental conditions in Romania.

Regarding to the ecosystems evolution is necessary the completion of a national network of protected areas with new areas which contain valuable ecosystems that have not yet been protected.

Other methods are the reintroduction of some key species that have previously been extirpated from Romania and organization of a network for the ex-situ conservation of biological diversity.

By studying how natural ecosystems recover, scientists are learning how to speed up our repair operations. Rehabilitation involves making degraded land useful for human again on sustainable basis, including stopping soil erosion and desert creep, and allowing the land once again to produce food or wood for fuel and timber.

RESULTS AND DISCUSSIONS

As environmental conditions have changed over billions of years, many species have become extinct and new ones have formed. The result of these changes is biological diversity or, biodiversity. It consist of the forms of life that can best survive the variety of conditions currently found on earth and includes genetic diversity, species diversity and ecological diversity. Ecological diversity is the variety of forest, grasslands, streams, lakes, oceans, and other biological communities that interact with one another and with their nonliving environments.

Since agriculture began about 10,000 years ago, human activities have reduced Earth's forest cover by at least one third to about 34% of the world's land area. Forests give us lumber for housing, biomass for fuel wood, pulp for paper, medicines and many other products. Many forestlands are also used for mining, grazing livestock and, recreation.

Forests watersheds act as giant sponges, slowing down runoff and absorbing holding water that recharges springs, streams and groundwater. Thus they regulate the flow of water from mountain highlands to croplands and urban areas, and help control soil erosion, moderate flooding, and reduce the amount of sediment washing into streams, lakes and reservoirs. Forests also influence local, regional and global climates. For example, 50-80% of the moisture in the air above tropical forests comes from trees by transpiration and evaporation.

Forests are vital to the global carbon cycle and acts as a brake on a possible runaway green house effect. Trough photosynthesis trees remove carbon dioxide from an add oxygen to the air, explaining why they are called earth's lungs.

In most of the polluted species, the pollution damages are causing their regress and the unsettlement of natural interspecies relationship. Once with the presence of the polluted factors, in certain geographical area, the process of destruction of the whole vegetation also begins, with serious effects on the nature and human activity.

There are considerable numbers of damaging practices and activities affecting biodiversity in Romania and the possibilities for reducing damage to biodiversity are large. The existence or absence of pollutants is related to the technology applied in different industrial branches, which proved to be inadequate in keeping the surrounding environment safe. It's important to continue implementing the existing domestic policies and measures to reduce the carbon

intensity of the Romanian economy in full compliance with the EU *acquis communautaire*.

Keeping the polluted vegetation at the best life parameters require taking urgent actions in order to prevent or to stop its degradation processes.

CONCLUSIONS

Romania is a country with rich biodiversity (ecosystems, species and genetic diversity) and a high percentage of natural ecosystems - 47% of the land area of the country is covered with natural and semi-natural ecosystems.

This is the aim for the completion of an inventory of the biodiversity in the primary types of ecosystems (forests, grasslands, and wetlands) using a unified and well-defined methodology. Since almost half of all forests in Romania (13% of the country) have been managed for watershed conservation rather than production, Romania has one of the largest areas of undisturbed forest in Europe. The natural integrity of Romanian forest ecosystems is indicated by the presence of the full range of European forest fauna, including 60% and 40% of all European brown bears and wolves, respectively. Europe's largest wetland, the Danube Delta, also lies predominantly in Romania. Major grasslands, caves, and an extensive network of rivers, add to the ecosystem richness.

Important for Romania is to incorporate climate change issues in education and research, and to increase the level of awareness and public participation of stakeholders in decision-making in Romania on climate change issues.

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