

GLOBAL WARMING IN ROMANIA

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Abstract: About 70% of the surface of our country is in a process of desertification. Global warming will lead to a radical change in crops that may occur in Romania. Irrigation has been insufficient for a very long time in Romania. Their inefficiency led to the initiation of the desertification process on approximately 71% of Romania's surface. Our current crops are no longer protected from extreme temperatures and, for this reason, can no longer survive. Farmers need to change crops and plant seedlings that are resistant to long periods of drought. At the same time, sowing should be done earlier to avoid excessive heat. What does GLOBAL WARMING mean for Romania? A gradual warming, which in the last 15-20 years, reached 2 – 2,6 degrees Celsius. An increase in temperature, even by only half a degree, influences major phenomena at the country level, sometimes even on the continent. This process of aridizatiGlobal warming is the phenomenon of continuous increase in average temperatures recorded in the atmosphere in the immediate vicinity of the soil, as well as ocean and sea water, observed in the last two centuries, but especially in recent decades. Global warming phenomena have always existed, they are associated with the cosmic phenomenon of solar maximum, alternating with small terrestrial glaciations associated with the phenomenon of solar minimum.on has not appeared since, it has appeared more than 51 years ago. Globally, there is talk of increasing desertification over large areas.

Keywords: global warming, desertification, environment, nature, forests.

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1. INTRODUCTION

Global warming is the phenomenon of continuous increase in average temperatures recorded in the atmosphere in the immediate vicinity of the soil, as well as ocean and sea water, observed in the last two centuries, but especially in recent decades. Global warming phenomena have always existed, they are associated with the cosmic phenomenon of solar maximum, alternating with small terrestrial glaciations associated with the phenomenon of solar minimum (Allen & Clouth, 2012). Global warming has multiple profound effects in the widest areas. It causes or will cause sea levels to rise, climatic extremes, melting glaciers, the extinction of many species and changes in human health. There is a strong fight against the effects of global warming, the central issue of which is the ratification by governments of the Kyoto Protocol on reducing the emission of pollutants that affect the acceleration of warming. The climate system has five main pillars: the atmosphere, hydrosphere, cryosphere, lithosphere and biosphere, which interact with each other and with external factors, and the fundamental processes that drive the climate system are heating due to shortwave solar radiation and cooling due to space losses. of terrestrial radiation and long wave radiation. Human activity cannot be neglected either, being considered an external factor that influences the climate system. The main source of energy that controls the Earth's climate is solar radiation. The greenhouse effect is a natural phenomenon that heats the atmosphere in low areas due to the presence of greenhouse gases, which are transparent to mostly short-wave solar radiation, but absorb the long-wave radiation emitted by the Earth, emitting it back. (Bran et al., 2011).

The natural greenhouse effect is amplified by the greenhouse effect due to the increase in the concentration of greenhouse gases as a result, mainly, of human activities. Despite efforts in recent decades to prevent the increase in the greenhouse effect, multiple climate changes have already occurred and humanity is experiencing their effects. The most important effects of climate change are closely related to the increase of the global average temperature, but also the intensification of extreme climatic phenomena such as heavy and often extreme precipitation such as drought, violent storms or heat waves. Other indirect effects, in which the climatic factor plays an important role, could be the triggering of avalanches in the mountainous area, landslides or vegetation fires.

2. GLOBAL WARMING - EXPLAINING THE PHENOMENON AT THE MACRO LEVEL

The phenomenon of global warming began to worry after 1960 following the massive industrial development and the increase in the concentration of greenhouse gases which are considered largely responsible for this phenomenon. Climate models developed by researchers estimate that the global climate will warm by 1,3 – 6,4 ° C during the 22nd century. Estimates vary due to the fact that the evolution of greenhouse gas emissions cannot be predicted. In fact, the trend of continuous warming of the planet in the XXII century is revealed by many studies in the field. However, it is very worrying that these climate scenarios show that the polar regions will be warming the most, which could have dramatic consequences, including for aquatic species. In order to survive, most plant and animal species must adapt to these changes or migrate with climate zones. Those species that cannot adapt or cannot migrate, risk disappearing due to climate change in their habitat, some even permanently. For example, species in mountain areas will have nowhere to move to higher and colder areas which would lead to their extinction if they do not adapt. A similar situation can be registered in the plain and hill areas, regardless of the form of relief we are talking about. The flora and fauna in the area cannot move further north to avoid global warming and risk extinction. Heat waves from the African continent are a consequence of global warming and involve some risks to the health of the population, especially in urban areas, where temperatures are higher due to newly built buildings and their increasing predominance. It is known that hot weather can increase the risk of death, especially in people susceptible to sensitivity to the effects of heat stress. The greatest vulnerability is generally found in people in the age group over 65, but also in children with cardiovascular health problems. The heat wave can also cause natural disasters. It can cause fires, or it can sustain forest fires caused by human negligence. In this case, significant areas of forest are destroyed, while also endangering the lives of people nearby. They also cause clouds of smoke that prevent the transport of vehicles in good conditions and lead to intoxication of people in the area. Due to the impact on food production, drought can have devastating effects on health among the population. [Caprotti & Bailey, 2014].

This is all the more so as drought is a phenomenon with a high frequency in large areas of developing countries with a large population. Insufficient food causes a higher level of morbidity, caused by a number of diseases, including pellagra, hypomagnesium, low macro- and especially micronutrients (vitamins, minerals), but also weakening the body's resistance to pathogenic factors, greatly lowering the immune system.

Anemia, malnutrition and malnutrition, respectively, are effects of inadequate food intake or in the wrong amounts. About two billion people in developing countries are anemic, and 1.1 billion people worldwide are malnourished. The frequency of malnutrition is also high in many regions of the world. It is estimated that the number of chronically malnourished people was 793 million people in 1996–1998,

representing 18,1% of the total population of those regions. To avoid a bleak future for the planet, by 2050, greenhouse gas emissions should be reduced twice worldwide and four times for industrialized countries.

There is also an optimistic scenario, according to which, by 2100, the temperature will increase by 1,1 – 2,9 degrees Celsius. But experts believe that this is unlikely, due to the inertia of ecological systems and the amounts of carbon dioxide accumulated in the atmosphere over the past hundreds of years, but also the technology that evolves from day to day.

The general attitude towards climate change, the largest and most studied environmental issue at present, is a mixed one.

There is a consensus among scientific organizations and communities that the Earth is changing its climate. At the global level, temperatures are rising, meteorological phenomena are becoming more severe and chaotic, as well as in Romania, and behind these changes is human activity, often involuntarily. Among the public opinion, however, the debate is very strong, the skepticism and confusion being deliberately maintained, with a lot of money, due to the economic aspects. This is why there are still many people under the impression that climate change, if it exists, is not due to human activities, that this has not yet been fully scientifically proven, but many of us know that it is not.

3. THE EFFECTS OF CLIMATE CHANGE IN ROMANIA

Human activity applies climate change, including rising global temperatures. The average temperature on our planet is growing at a rate almost twice as high as 50 years ago. This rapid warming cannot be explained by natural cycles alone and is more than normal. The only way to explain it is to talk about the effect of greenhouse gases emitted by human activities. In order to reach a scientific conclusion on climate change, the UN created in 1988 the group called the Intergovernmental Panel on Climate Change. The IPCC meets every few years to analyze the latest available scientific data and summarize them in a report to establish the following results. The report is the result of a consensus among tens and hundreds of top researchers. Global warming is caused by more greenhouse gases that people emit. Most come from the burning of fossil fuels by cars, buildings, factories and power plants, but also certain plants. (Jacobs, M. 2012). The gas responsible for most of the heating is carbon dioxide. Other contributing emissions are: methane, released from landfills, the gas and oil industry and agriculture (especially from the digestive systems of grazing animals, tractors and engines); nitrogen oxide from fertilizers; gases used for refrigeration and industrial processes; loss of forests that would otherwise have a low CO₂ content.

Despite the warnings of scientists, global efforts to combat climate change are proving to be too small and insignificant, as carbon dioxide emissions from fossil fuels continue to rise, reaching record levels in 2018 and 2019.

The signs of global warming are everywhere and are more complex than a rise in temperature. Since 1907, the average global temperature has risen by 0,9 degrees Celsius, which is a fast pace. The situation in the world is much worse, because according to a report prepared by the Environment and Climate Change Department, Canada is warming twice as fast as the rest of the planet: since 1948, the average annual temperature has risen by 1,8 degrees Celsius. In the North, global warming is even more dramatic, almost three times global: 2,4 degrees Celsius, on average, per year, which is a lot for the whole world.

At present, ice is melting all over the planet, especially at the poles, from mountain glaciers, to ice caps and arctic ice floes.

- Melting ice has the effect of raising sea and ocean levels. Every year it increases by 3.3 millimeters, the rate accelerating in the last period.
- Many species are forced to migrate north and at higher altitudes from plants to some species.
- Precipitation (rain and snow) has become more abundant, on average, globally, but also more severe droughts, with all the process of problems they cause: forest fires, water shortages, compromised crops, famines.

Mitigating the effects of climate change on agriculture is a priority objective in the strategic development actions of the EU Member States. The interdisciplinary nature of the actions adopt a global approach by identifying and correlating activities for the development and implementation of intra- and inter-sectorial measures with those in response to the effects of climate change.

Plant production varies from year to year, being significantly influenced by fluctuations in climatic conditions and especially by the occurrence of extreme weather events. Climate variability affects all sectors of the economy, but agriculture remains the most vulnerable, and the impact on it is more pronounced today, as climate change and variability are becoming more pronounced. Mitigating the effects of climate change in agriculture is a priority objective in the strategic development actions of the EU member states and also in Romania. The interdisciplinary nature of the actions implies a global approach by identifying and correlating the activities of development and implementation of intra- and inter-sectorial measures with those of responding to the effects of climate change. Plant production varies from year to year, being significantly influenced by fluctuations in climatic conditions and especially by the occurrence of extreme weather events. Climate variability affects all sectors of the economy, but agriculture remains the most vulnerable, and the impact on it is more pronounced today, as climate change and variability become more frequent. [Lane, 2010].

4. GLOBAL WARMING WARNINGS AND MEASURES

In order to keep hopes of reducing global warming to 1.5 degrees Celsius, the ideal target agreed by the Paris Agreement, greenhouse gas emissions should be reduced by 7.7% per year each year from next year until in 2030, according to the annual report of the United Nations Environment Program, and this implies a reduction of about 54% between 2018 and 2030. In the event of any delay after 2020, the 1,5 degree Celsius target would quickly become unattainable. Regarding the limitation of global warming to +2 degrees Celsius, emissions should be reduced by 2,7% per year, from 2020 to 2030. These emissions, generated mainly by the use of fossil fuels, have increased by 1,6% per year. year in the last ten years and there is no sign that it will diminish, UNEP reports noting the new record of 55,4 gigatonnes of CO₂ in 2018. The world is already about 1 degree Celsius warmer compared to pre-industrial times, a phenomenon which develops a multiplication of climatic phenomena, and with each additional half degree the impact of climate change will be more serious on all natural ecosystems. For Romania, it is necessary to intensify research and educate the population on the importance of the consequences of climate change on health. Thus arises the need for some research priorities on the new ecological conditions of species, their molecular biology and epidemiology and the approach of new techniques for combating infectious diseases focusing on the phenomenon of migration. Climate exerts direct and indirect effects on the occurrence and geographical distribution of vector-borne diseases, being associated with changes in the rate of replication and dissemination of pathogens, all with increased sensitivity to changes in temperature and precipitation. [Moga & Rădulescu, 2005].

Research on the influence of climatic factors on the risk of emergence or re-emergence of diseases in Romania, support the results of research established at European and even global level. Thus, using a mathematical program based on the construction of a nonlinear mathematical function, a temperature

forecast was made for 2030, according to the thermal trend recorded in the last five decades. Thus, there was an increase in temperatures from 1961 to 2016 by 0.72 ° C throughout the country. The forecast made for 2030 shows an increase in temperatures of 0.8 ° C, which is an alarming increase.

The behavior, geographical and seasonal distribution of different species of, is the result of the interaction of genetic factors with ecological ones. Genetic factors are closely related to the basic traits of behavior, and ecological factors can produce different types of reactions in a population with the same genetic characteristics. Each species lives in a certain habitat, due to its adaptive dependence on environmental factors such as climate, food, type of place of growth. In this case, a special importance in the epidemiology of diseases transmitted by certain insects and in the transposition of practical actions to control pests, are knowledge of biology and ecology, the life cycle of pests under the influence of environmental conditions, including abiotic and biotic factors, including man. Among the ecological factors, an important role is played by the environmental factors that determine the periodic and seasonal biological events.

Climate change is already happening all over the world: temperatures are rising, rainfall patterns are changing, glaciers and snow are melting, and global sea levels are rising from year to year. Most of the warming is most likely due to the observed increase in atmospheric concentrations of greenhouse gases due to emissions from human activities. To mitigate climate change, we need to reduce or prevent these emissions, as we wrote earlier. To prevent the harshest impact of climate change, the United Nations Convention on Climate Change was signed, which decided to limit the average increase in surface temperatures to less than 2 ° C. To achieve this, global greenhouse gas emissions should reach their peak as soon as possible and decrease rapidly thereafter. Global emissions should be reduced by 50% compared to 1990 to 2050 levels before carbon neutrality is achieved before the end of the century. The EU supports the UNFCCC target and, by 2050, aims to reduce greenhouse gas emissions by 80-95% from 1990 levels. [Togtokh & Gaffney, 2010]

To reduce emissions, the EU has adopted legislation to maximize the use of renewable energy, such as wind, solar, hydropower, and to improve the energy efficiency of a wide range of household equipment and appliances. Therefore, the EU is committed to reducing emissions across the EU by at least 40% from 1990 levels. This is a mandatory path. The European Energy Union, which aims to ensure that Europe has safe, accessible and green energy, has the same goal.

CONCLUSIONS

The purpose of this presentation is to sound the alarm on the danger we are subjected to on a daily basis, without the public being notified of this risk caused by the effects of global warming. Vector diseases have been shown to have the most sensitivity high on climate change in recent years and especially in recent months. In Romania, there is currently no authorized program for the surveillance of vector diseases, this implying the knowledge and correlation of the three important factors: the presence of the vector, the pathogen and the favorable climate for development disease. As measures for the prevention and control of vector diseases, we recommend first of all the establishment of a program to monitor the presence of the vector in nature, proving in the latter that global warming is creating perfect habitats for the development of vectors with the risk of adapting new species to the country's climate.

Secondly, it is also important to monitor the presence of pathogens transmitted by vectors in nature as well as the centralization of diagnosed cases. A concrete example is malaria and leishmaniasis, two diseases considered tropical but with many cases diagnosed annually in the country and whose vectors are adapted to the climate of our country. It is necessary to adopt educational programs for the

population and more thorough training of veterinary medical staff, regarding the risk of emergence and / or re-emergence of tropical diseases. Romania is not associated with the European program that imposed a decrease in carbon emissions by 2050, a program that aims to mitigate the direct effect of global warming on human and animal health.

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