

**Ioana Panagore, Ph.D.**

ioana\_panagoret@yahoo.com

Faculty of Science and Engineering Alexandria, Valahia University of  
Târgoviște, Romania

**Drago Panagore, Ph.D.**

Faculty of Science and Engineering Alexandria, Valahia University of  
Târgoviște, Romania

panagoret\_dragos@yahoo.com

**Tomislav Kandžija, Ph.D.**

Primorje-Gorski kotar County, Croatia

tomislav.kandzija@pgz.hr

## ENVIRONMENTAL MANAGEMENT AND POPULATION POLICIES

### Abstract

*Protecting the Earth's atmosphere has become a concern on the agenda of all mankind, regardless of how one state or another is involved in resolving or worsening of this serious problem. States are facing global warming, generating a triple dilemma. First, there is the dilemma of short-term and predictable costs to winning long-term and less predictable benefits. The second refers to some specific segments, such as oil companies and industrial workers bearing the costs, while most of the benefits are distributed in domestic and world society international. The third dilemma concerns the collective goods between states, ie the benefits are shared globally and the costs to be borne by each state. The international system must face both the conflicts, whose number is increasing, and the complexity of the global management. As demands on the environment continues to grow, this problem grows and the two reasons which contribute to this pressure are: economic development and a greater number of people. Pollution as a global issue is the prerogative of our century, especially in the last thirty years when the population of the planet has*

*greatly increased (from 5 to 7 billion) and the environment has been damaged by pollution, erosion and other phenomena due to the willingly or unwillingly actions of mankind.*

*Compared to 400 years ago, as a result of improved living and health standards, and also due to a high percentage of the birth rate, the world population has increased about 10 times, and for the year 2050 is expected to reach about 10.5 billion.*

*How human action influences the soil and the earth's atmosphere can take many forms and existed since humans began using fire for agriculture, heating and cooking food and especially during the industrial revolution that began at the end of the eighteenth century and early nineteenth century, when air pollution has started to become a major problem. Currently, one of the most serious problems caused by air pollution is global warming produced by the accumulation in the atmosphere large amounts of carbon dioxide and other gases, known as greenhouse gases. They reduce the heat dissipated from Earth but does not block the sun radiation. Because of this greenhouse effect is expected that global temperature increase of 1.4 ° C to 5.8 ° C by 2100, a process that has already begun to change climate patterns, affecting agricultural production, changing the distribution of animals and plants and increasing sea level. To combat the problems posed by pollution worldwide and reducing pollution, an important role it plays on the international stage the policies adopted by governments and international bodies, international understanding and not least nongovernmental groups formed at local, national and international.*

**Keywords:** *environment, management, greenhouse effect, policies, pollution.*

**JEL:** Q56

## **1. INTRODUCTION**

Global industrialization and technological development increased international economic interdependence through economic integration

and transnational communication, and intensified, in a less direct manner, the impact on the natural environment of the planet. Thus, global threats on the natural environment have become a new source of interdependency, nowadays, actions taken by a state systematically influencing other states' access to natural resources and the benefits of a healthy environment. A sustainable natural environment is a collective good and the states negotiate among themselves how to distribute the costs of providing that good.<sup>1</sup>

These collective assets create difficulties in the environmental policy worldwide, as environmental effects are widely spread easily and are long lasting and technical, scientific and ethnic aspects of administering the environment are complex, the problem of collective goods appearing on each area of the environment, natural resources and population.

Due to the large number of actors in the global environmental policy, it is quite difficult to solve the problem of collective goods and, with few exceptions, the natural world has become, in the past three decades, a major topic of research and negotiation within international relations.

The studies on the environmental policy have been expanded in recent years, leading to the systematic analysis of relationships between the environment and security and military issues, on the one hand the role of the environment as a source of international conflict , and, on the other hand, the effect of military activities on the environment being examined.

The system must also face the growing international conflicts and the complexity of global management, generated by the economic development aiming at a higher Gross Domestic Product (GDP) per capita and an increasingly growing number of people.

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<sup>1</sup> Goldstein, J., S., Pevehouse, J., C., *Relații internaționale*, Editura Polirom, București, 2008, p. 541.

## 2. ENVIRONMENTAL MANAGEMENT

Protecting the Earth's atmosphere has become a concern on the agenda of the entire humanity, regardless of how one state or another is involved in resolving or aggravating this serious problem, and states are faced with global warming, this generating a triple dilemma. The first is the dilemma of short term and predictable costs in view of winning long-term and less predictable benefits, the second refers to some specific segments (eg oil companies and industrial workers bearing the costs, while most of the benefits are distributed in the domestic and international society), and the third dilemma is the one concerning collective goods between countries, which means that benefits are shared globally and the costs are to be borne by each individual state.

Therefore, the international system must face both conflicts whose number is increasing and the complexity of global management. As demands on the environment continue to grow, this problem expands and the reasons contributing to the creation of this pressure are:

- economic development,
- international security,
- an increasing number of people (the population of the planet has increased in the last three decades from 5 to over 7 billion).

In the following one will present the main environmental issues and how they are globally managed.

### *The Atmosphere*

Due to deliberate or unintended human action, the environment began to deteriorate more and more through pollution, erosion and other phenomena. Although it does not manifest uniformly around the world, global warming has become a reality with major geopolitical connotations. This planet hosting humanity is under the impact of the greenhouse effect which has grown considerably since the nineteenth century to the present. According to studies conducted by government experts on the climate evolution, CO<sub>2</sub> emissions have increased the planetary temperature by 0.8 ° C in the 1860- 2000 period, this

increase being caused by the sociosphera impact on the planet (annually approximately 5 billion tons coal, 4 billion tons of oil, gas, wood and other materials are consumed).<sup>2</sup> Extremely worrying are experts forecasts and climate models for the 2000-2100 period, according to which the temperature will rise between 1.4 to 5.8 ° C, extremely high value, considering the fact that since the last glaciation 15,000 years ago and until now the increase was of only 5 ° C. The 1995-2005 period was the warmest of the last two centuries since observations are carried out, and this reveals once again that global warming is a fact and the most effective measures should be taken urgently since the consequences of this process already materialize in:

- melting and restraining of polar ice caps (especially in the northern hemisphere),
- World Ocean waters raising,
- desertification and degradation of agricultural lands,
- increasing the frequency and intensity of El Niño and tropical typhoons,
- severe flooding.

### *The reduction*

Regardless of the actors contributing to worsening or resolving these issues, protecting the Earth's atmosphere concerns the entire humanity, and themes such as global warming and ozone depletion have become major issues internationally.

*The Framework Convention on Climate Change* adopted at the Earth Summit in 1992 set a goal (which was not binding), namely that in 2000 the greenhouse emissions to be limited to the values reached in 1990. Since the Americans had no objections to this commitment and the treaty did not oblige signatory states to reach this target to a specific date, the goal was not reached.

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<sup>2</sup> Simion, T., Noua (dez)ordine geopolitica mondiala, Valahia University Press Publishing House, Targoviste, 2011, p. 96.

*The Kyoto Protocol*<sup>3</sup> in 1997 adopted for the Global North a complex formula to reduce greenhouse emissions<sup>4</sup> to the 1990 level in about 10 years.

The US Congress has not agreed to ratification, and George W. Bush withdrew and no longer participated in the negotiations that followed. Independently of the Treaty, China has begun to reduce its carbon emissions as a result of phasing out coal fuel that was predominant. The Kyoto Protocol was implemented by 160 countries in 2001 without American support.

Thus, according to the agreement, by 2012, 40 industrialized countries were supposed to reduce emissions to a level with 5% below those of 1990, and, if this was not to happen, penalties were mandatory. EU has made promises to help with \$ 400 million the southern hemisphere countries in order for them to cut emissions. In order for the treaty to enter into force the ratification by 55 states (these total of 55% of global emissions) was necessary. Given the absence of the Americans, the ratification depended now on Russia, who ratified the treaty only in 2004 and thus entered into force in February 2005.

Therefore, the European Union started to operate on the markets to trade carbon emission credits between 12,000 industrial plants across Europe. And internationally, using the free market principles in order to further reduce carbon emissions, effectively created a trade treaty with carbon credits.

According to the Kyoto Protocol, binding carbon emission cuts were scheduled to begin in 2008 and end in 2012. Considering that the US has not participated in the implementation of this treaty, enforcement mechanisms were quite weak, on long term it cannot be established if it was effective or whether the signatory States fulfilled their tasks on time. Since the Japanese government founded in 2003 the Institute for

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<sup>3</sup> Victor, D., G., *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming*, Princeton, 2001

<sup>4</sup> Greenhouse gases act like glass in a greenhouse when they are concentrated in the atmosphere ( they allow energy to penetrate the solar radiation on short wavelengths, but reflect it back when it tries to get out in the form of heat waves with big wavelengths).

Research into Innovative Technologies for the Earth (which had 200 employees in 2003) to develop ways to filter carbon dioxide from industrial emissions, they consider that Japan can take advantage by winning a comparative advantage in green technologies<sup>5</sup>.

The United Nations Programme on Environment which aims to monitor ecological conditions, works together with the World Organization to measure changes that occur from year to year in the global climate, and the forum of negotiations on this issue is, since 1989, the Intergovernmental Panel on the global climate, which has always been supported by the United Nations.

### *Ozone depletion*

The ozone is located in the upper atmosphere and rejects harmful UV rays coming from the sun. Since the industrial economies emit certain chemicals, such as chlorofluoro-carbons (CFC) up in the atmosphere, they interact with the ozone destroying it. Ozone depletion represents a second issue that is negotiated between the governments of the world.<sup>6</sup>

By the thinning of the ozone layer, the surface of the Earth is reached by more ultraviolet rays, this fact having a great contribution to the appearance of skin cancer at people who expose themselves a bigger period of time to the sun, the destruction of vegetation, reducing crop yields, destruction of ecosystems. Because the Antarctic ozone layer is the thinnest, it was created a "hole" which tends to be increasingly bigger, causing the polar ice caps to melt and collapse and, therefore increasing ocean levels. This phenomenon of reducing the levels of the ozone layer was discovered in the early 90s over North America and now this problem became the subject of collective negotiating of goods between countries of the world. Due to the fact that the costs of replacing CFCs with other chemicals were much lower than those of reducing global warming, negotiations on this issue have been more successful.

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<sup>5</sup> „Japan Bids for Global Leadership in Clean Industry", Science, 256, 22 May 1992, p.1144.

<sup>6</sup> Litfin, K., Ozone Discourses: Science and Politics in Global Environmental Cooperation, Columbia, 1993.

*The Montreal Protocol of 1987*, signed between 22 states, provide CFC reduction by 50% until 1989. As the evidence of thinning of the ozone layer have increased, in 1990 the program was accelerated, the number rose to 81 signatory states, which decided, until 2000, to eliminate the use of CFCs. Signatory states also decided to help the Third World countries with over 1 billion dollars in the acquisition, by 2010, of alternative refrigeration technologies that will not be based on CFC. The Montreal Protocol was a major success in international negotiations on global environmental protection and the latest measurements on the quantity of CFCs in the atmosphere show declines by several percent since 1990 until now.

### ***Biodiversity***

The extraordinary diversity of species of plants and animals making up ecosystems at all levels (local, regional, global) define biodiversity, biologists considering that the more than 1.4 million species we have identified represent only a small fraction of all existing species . But many species have disappeared as a result of human intervention in the nature and the destruction of ecosystems. One can assert that this intervention of man materialized in:

- excessive hunting and overfishing,
- introduction of species that have crowded the local habitat and have led to the extinction of other species,
- destruction of tropical forests,
- pollution of oceans, lakes and flowing waters,
- loss of agricultural land due to urban sprawl.

From the desire of obtaining a profit from economic activities, people do not take into consideration the fact that these activities lead to the destruction of the habitat and the consequences of a species extinction would be difficult to estimate. The maintenance of the species is, just as global warming, a collective good, biodiversity protection cost sharing rendering it quite difficult to reach an international agreement.

At the Earth Summit in 1992, it was adopted a treaty on the protection of the biodiversity, within being stipulated the obligation of the signatory states to protect habitats and the obligation of rich countries



to pay poor countries for the right to use organic products extracted from rare species ( medicines from trees of tropical forests) in marketing. Once again the US did not sign the treaty and, although some stipulations were made in 1993, the treaty was not ratified. Except for the US and nine other small countries, since 2001, the treaty on biodiversity includes all member states of the United Nations (UN). To be mentioned that, although the US is not a signatory state to this treaty, it participates in other biological treaties such as the 1971 Convention on Swamps and the 1973 Convention on the International Trade with Endangered Species.

Unilateral approaches on biodiversity issues are quite problematic because they undermine free trade, and the multilateral approaches because of the topic of collective goods.<sup>7</sup> The battle is now between environmental groups and "the faceless bureaucrats from the World Trade Organization (WTO)" who do not respect national laws. Thus, there were some conflicts regarding certain American laws restricting imports of food with pesticide residues and European regulations related to imports of genetically modified agricultural products and pharmaceuticals that the US wants to export worldwide.

Also, rainforests and oceans are vital elements for biodiversity and atmosphere as half of all the world's species live in tropical forests that restore oxygen and reduce carbon dioxide in the atmosphere slowing down the global warming and the oceans, which cover 70% of Earth's surface are an essential element in maintaining biodiversity and climate regulation. Unlike rainforests, which belong to states, oceans do not belong to any state but are global assets<sup>8</sup> whose use is governed by the United Nations Convention on Law of the Sea (UNCLOS) negotiated from 1973 until 1982. The United States signed this Convention after a decade of delay and renegotiation on deep sea mining. This Convention has set rules on territorial waters (12 miles for navigation and a 200-mile exclusive zone for economic activities such as fishing and deep sea mining).

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<sup>7</sup> Goldstein, J., S., Pevehouse, J., C., *Relații internaționale* Editura Polirom, București, 2008, p. 554.

<sup>8</sup> Mann Borgese, E., *The Oceanic Circle: Governing the Seas as a Global Resource*, University Press, New York, 1999.

The management of collective assets of the world ocean (overfishing, etc.) and other similar issues were resolved by passing the most important regions of the ocean under the exclusive control of the states, them being in the so-called exclusive economic zones (EEZ) of 200 miles of state controlled subject to conditions imposed by the UNCLOS treaty.

As well one can talk about the Antarctic, continent with limited commercial and strategic value and which, like oceans, does not belong to any state.<sup>9</sup> As a result of the small number of states interested in this continent, as well as reduced costs, concluding agreements on Antarctica were successful. Thus, in 1959, all states which had interest in the area and the two superpowers signed the *Antarctic Treaty* which was one of the first treaties on the environment which does not regulate territorial claims on the continent and establishes how different countries can perform scientific research. Under this Treaty, military activity, the presence of nuclear weapons or nuclear waste dumping is prohibited. In general, agreements on the subject "Antarctica" constituted and constitute a success in the global environmental policy, Greenpeace proposing signatories to the treaty, in 1991, the transforming of the continent into "a global park".

In what concerns air and water pollution, in the last three decades, as a result of both the unilateral action of states and international agreements, which were often feasible and effective, one can say that it is declining. In most parts of the industrialized regions, the river water quality has improved, and the market economies began to treat pollution as any other cost of production. Also, some governments have begun to share "pollution rights" that companies were able to buy and sell on the open market.<sup>10</sup>

Because centrally planned industrialization in the former Soviet bloc has created serious environmental problems with harmful effects on human health, now former republics are forced to negotiate on

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<sup>9</sup> Schram Stokke, O., Vidas, D., *Governing the Antarctic: The Effectiveness and Legitimacy of the Antarctic Treaty System*, Cambridge, 1997.

<sup>10</sup> Goldstein, J., S., Pevehouse, J., C., *Op.cit.* p. 561.

limiting pollution and remedy the damage as much as possible. For example, the Aral Sea belonging to the Soviet Union, now belongs to Kazakhstan and Uzbekistan. As a result of a large irrigation project designed in the Soviet era to grow cotton in the desert, rivers draining in the Aral Sea were diverted and polluted with pesticides. The Aral Sea, which was the fourth largest in the world was now reduced to a half, and huge fishing grounds have been destroyed, local populations suffering from the effects of this disaster. Of course, one can come here with many examples on the debated theme.

### **3. THE RELATIONSHIP BETWEEN ENVIRONMENT AND SECURITY**

In the past 20 years, studies on environmental policy were extended to analyze the relation existing between environment and security and military matters <sup>11</sup>, an important aspect of this relationship is the role of the environment as a source of international conflict and here one can give the example of Nigeria. Here, in 2006, as a result of damage caused by the oil industry, was founded a local insurgency that has attacked oil facilities and kidnapped a number of foreign workers.

Also military activities and particularly war produce significant environmental degradations which add those caused by economic activities. Here are some examples:

- during the Second World War the Soviets, as they retreat from the Nazi invasion, left behind a scorched earth;
- during the 1991 Gulf War, Iraqi forces have discharged large quantities of Kuwaiti oil in the Persian Gulf;
- nuclear experiments, etc.

The biggest disaster would be a potential nuclear war with serious effects everywhere and in all ecosystems of the world and, as experts say, it could cause severe global climate changes.

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<sup>11</sup> Kahl, C., H., States, Scarcity, and Civil Strife in the Developing World, Princeton, 2006.

#### 4. POPULATION POLICIES

As mentioned above, raising ocean levels by about 1 meter by the end of this century due to climate change will produce extremely serious consequences for mankind in the sense that densely populated coastal regions in many regions of the globe will be flooded. Experts estimate that about 1 billion people will be directly affected by the flooding of coastal settlements. Therefore, there will be immigration and migrations of affected populations to other geographical areas, a phenomenon that will lead to huge human fluctuations with still unknown and uncalculated effects.<sup>12</sup>

The climate change will profoundly influence the population of the Earth (which, if in 2015 was 7 billion, is growing annually by 75-80 million) spread unevenly on continents, countries, geographical environments and landforms. One of the many scenarios that we are doomed to and that is unfolding is the uncontrolled migration which is based on terrorism.

The impact of the global climate change on the population will lead to:

- Numerical growth and human pressure on the environment through numerous crises which will aggravate (energy crisis, water crisis, food crisis),
- Global geopolitical instability (disputes over resources, geographic areas, population flows);

Although world population growth is equally determined by both birth rates and death rates, somehow the mortality rate is more complicated than birth rates. If births have a single source, namely women who can carry the pregnancy until the end, the death of people is based on several reasons, namely:

- infant mortality (5% worldwide of which 1% in rich countries and over 10% in the poorest countries),
- SIDA, tuberculosis, malaria, hepatitis etc.,
- smoking,
- international conflicts.

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<sup>12</sup> Simion, T., Noua (dez)ordine geopolitica mondiala, Editura Valahia University Press, Targoviste, 2011, p.102

Certainly, in the reduction of those factors that lead to increasing mortality rates an essential role is played by the education and health policies adopted by the state governments of this world.

If the policies adopted by governments will not be consistent, we will witness an intense internationalization of phenomena such as terrorism (Al Qaeda and the Islamic State, etc.).

## **5. CONCLUSIONS**

The climate change will profoundly influence the population of the Earth (which, if in 2015 was 7 billion, is growing annually by 75-80 million) spread unevenly on continents, countries, geographical environments and landforms. One of the many scenarios that we are doomed to and that is unfolding is the uncontrolled migration which is based on terrorism. The scenario launched a decade ago " the danger of Islamic world "( scenario which is based on more than 1 billion people) is reminiscent of a young population, frustrated with the prospects (education, health, lack of a job), easily manipulable and which, probably dropped out of control, can become a real problem for the developed world (EU, US, Russia, China). Since the rich countries have not granted a complex aid to the Muslim world and in the absence of coherent policies, we are now witnessing the internationalization of phenomena such as terrorism, a phenomenon that has a big impact on the international community. In the final analysis, one can make the statement that between global climate changes and population dynamics there is an unbreakable connection and global policies promoted by the international community must respond to these desiderata. In order to facilitate negotiations in the future, technology can bring a great contribution, many experts say that one can obtain extraordinary results through a series of energy efficient measures or other solutions that do not reduce the volume of the economic activity, but can make it cleaner and more efficient. Such investments, although expensive would absorb over time as a result of higher economic efficiency.

Also, growing populations exert more pressure on resources at both regional and global level and exacerbate all international conflicts over natural resources.

There is no state to be avoided by global climate changes and, therefore global measures which are firm, consistent and efficient are necessary from both the leaders and the whole community.

In conclusion, between global climate changes and population dynamics there is an indestructible connection and global policies promoted by the international community must meet these challenges.

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