

Depletion of natural resources as a threat to environmental security and a factor in international relations

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Abstract

The purpose of this study is to examine the extent to which the depletion of natural resources is a threat to environmental security and to what extent this affects international relations. The author's argument is that it is the struggle for more resources and control over their use that gives rise to conflicts in the modern world and the more natural resources are depleted, the more conflicts occur. This article broadens the scope of the theoretical overview and shows the connection between the depletion of natural resources, as an element of threat to environmental security, and security in relations between the different countries. This study is relevant in terms of the data for the last three years; it is a result of their analysis that accounts for the impact of COVID-19 on resource use and the ability of nature to recover. The study focuses on results for resource depletion worldwide, without a claim to completeness, and offers ideas for the future. These may be prerequisites for future research in the context of resource depletion and their impact on different sectors of the economies of each country. In order to reduce the use of natural resources, a circular economy is proposed, where possible.

Key words: security, depletion, natural resources, environment.

Introduction

We live in times that can definitely be described as 'insecure'. On the one hand, there is an increasingly globalizing world and, on the other hand, the increasing vulnerability of each of us towards this world. Depletion of natural resources may be considered as an important element related to human vulnerability and insecurity. More and more people are suffering from lack or shortage of food, and this is intrinsically linked to the depletion of resources people obtain from nature.

The exploration of natural resources, the problems related to their use, pollution and depletion, the possibilities for minimizing and eradicating the negative impacts and harms inflicted on the environment are current issues and challenges for green policies in the context of environmental threats and security in each country.

Environmental impact and depletion of natural resources pose threats to both people and countries' economies, and the possibilities of using renewable sources and introducing a 'circular economy' are only part of the security aspects of the future.

This report examines environmental security in the context of the relationship between different countries and the impact of environmental threats and depletion of resources on international relations and security.

The aim of the study is to examine the extent to which the depletion of natural resources poses a threat to environmental security and to what extent this affects international relations. It is necessary to establish the link between the environment, economic activity, security and vulnerability of people towards nature's threats, to clarify the threats to the environment and environmental security, as well as their impact on human health and human vulnerability.

Global environmental changes hinder individual security by affecting livelihoods, promoting transnational crises and disrupting the stability of countries and regions. Therefore, environmental

deterioration poses a serious threat both to the security of individuals and to all countries, taken together and separately.

Results and Discussion

Security – nature and aspects of security

The term ‘security’ is one of the fundamental concepts in modern science. In nature, people always strive to achieve a state of protection and maximum comfortable existence. On the other hand, people live in a world filled with numerous and diverse risks. In theory, there are different interpretations of the concept of security, according to which security is perceived as a degree of resistance to, or prevention of harm. The term ‘security’ means a state of tranquility, confidence, protection, reliability, assurance, etc.

Security includes various aspects of life on planet Earth, depending on the point of view of threats and risks, and the harms can be environmental, economic, social, political, military, information, resource, etc.

Environmental security, with its threats and risks, is one of the aspects of security that is becoming even more serious factor in our modern way of life. ‘Environmental security’ is a state of the environment that does not constitute any risk to its individual components and ecological systems, as well as to the systems and people that interact with it.

According to S. Velev, ‘Environmental security is the relative public safety from environmental dangers caused by natural or human processes due to ignorance, accident, mismanagement or design and originating within or across national borders. However, this does not take into account the key environmental issue for the conservation of resources and environment. Environmental hazards are defined as a condition that threatens the vital interests of the individual, society and the natural environment resulting from anthropogenic and natural impacts on the environment’ (Velev, S. 2015, p. 188).

Environmental security can also be interpreted as a set of states of natural, urbanized and socio-economic systems and the processes between them. Only when criticalities do not arise as a result of development of environmentally hazardous events and environmentally hazardous phenomena causing harmful impacts and harmful effects, then we can talk about environmental security.

Ecology as an element of security

Ecology was separated from the other natural sciences in the late 19th century. It is closely related to other fields, such as physiology, theory of evolution, genetics and ethology. By contrast, the subject of ecology are the more general processes and principles on which the functioning of the biosphere is based.

Ecology, as a relationship between living organisms and their environment, is directly or indirectly linked to the national security of a country. Along with the traditional threats to environmental security, in recent years, new threats have emerged, which we can generally call modern threats to environmental security.

The modern concept of environmental security is to create a safe existence and functioning of ecological and social systems in the environment.

Currently, the concept of ‘global environmental security’ has not yet been defined clearly enough. In the broad sense, ‘security’ (safety) means the ability to counter threats to life, health, well-being, human rights, resources and social order. There are three main types of threats. (Atanesyan K., 2010, p. 2)

1. Military threats. First and foremost, they include a possible global nuclear war, the proliferation of weapons of mass destruction and large-scale wars.

2. Economic and social threats. These are mass poverty that gives rise to famine, economic collapses, overpopulation and urbanisation, mass international migration, pandemics, gene manipulation.

3. Environmental threats. They include changes in the composition of the atmosphere and the consequences of that process, pollution of natural drinking water, oceans, deforestation and desertification, soil erosion and the destruction of fertile soils, biotechnological risks, hazardous pollutant emissions, uncontrolled production, transport and use of toxic chemicals and materials, export of hazardous technologies and hazardous waste to the developing countries (environmental aggression).

There are different views on the concept of 'environmental security' and it can be attributed to many fields such as: medicine, industry, technology, agriculture, services, international relations, etc. In other words, 'environmental protection' has steadily entered our everyday life and its importance and relevance are even more increasing every day (Tomov, V. Vladimirov L., 2007, p. 46-54).

Environmental security is also defined by Lubomir Vladimirov (Vladimirov, L., 2006, vol. XII, pp. 233-287). It is defined as follows: 'The ecological security of a given object of generation of risk factors is a condition where no differential and integral criticalities are defined and no critical situations and events appear for the influenced objects-people, animals, plants, materials located in the environment'. A research method is proposed which is based on the determination of differential and integral criticalities. For the first time, well-argued definitions of critical situations and events are given. If we use Peter Hristov's definition that environmental security is defined as 'the ability of the state to protect citizens and society from the destructive effects of natural phenomena as a consequence of unreasonable human interference in the environment' (Tomov, V., P. Hristov, A. Nenova, 2007, p. 237) and having in mind the above, we can summarize that 'environmental security' is the ability of the state to protect the interests of its citizens and society from the negative impact of natural and technogenic processes and their consequences.

In June 1992, the Second United Nations Conference on Environment and Development was held in Rio de Janeiro, attended by leaders of 114 countries and diplomats from 178 countries, as well as representatives of 1,600 non-governmental organizations. The greatest achievement of this conference was the recognition of the fact that environmental and development issues could no longer be regarded in isolation. The attention of the participants at the highest level was focused on global and regional environmental issues.

It is important to emphasize that environmental issues have no borders, and environmental security has become increasingly global in nature - at national and international level.

In general, the term 'threat' refers to a real, possible dangerous and negative event that can cause damage to the subject. Threats to environmental security mean the likelihood of occurrence of phenomena and processes, the realization of which may lead to negative impacts on the environment and the health of the population. These phenomena and processes may include intentional or unintentional impact on the environment as a result of the activities of individuals and legal entities or other countries; they may also be the result of force majeure or natural disasters and catastrophes.

Environmental threats and the damage they entail are a factor in environmental security. Recently, the origins of threats to human security and comfort are increasingly linked to the unfavorable state of the environment and its negative impact and risks to human health. The fact that natural resources are constantly being depleted worldwide must not be overlooked, and this inevitably leads to risks for the environment and creates preconditions for conflicts.

Natural resources and their relationship to environmental security

Human development is based on the use of natural resources, that is why their stocks should be used carefully to ensure their availability for the needs of future generations. There is a lot of wisdom in the old saying that 'we do not inherit the land from our ancestors but borrow it from our children' (Indian proverb); it is often used to raise awareness of the all people around the world towards the use of natural resources; or, to put it another way, natural resources provide the vital things in life, such as food, natural environment, carbon, water, as well as basic raw materials. The environment should be able to serve all ecosystems. The assessment of ecosystems confirms that the pressure on the natural environment has already led to significant losses in almost all types of ecosystems and,

accordingly, in the services they provide to society. The use of natural resources supports the economic growth and helps improve living conditions. However, their unsustainable use leads to changes in a number of ecosystems which in turn has serious consequences. Sustainable economic growth is considered to depend on the quality and quantity of natural resources available.

Natural environment has a significant effect on the quality of life, health, as well as life expectancy and economy. Population growth, but to a greater extent its enrichment, the structure of the economy, irrational and isolated management of natural assets, as well as climate change can lead to significant stress on the social and economic balance of countries. 'Countries and societies must be politically, administratively and technically capable of responding adequately to environmental stress, including extreme natural phenomena' (Popov, S., Ganev, G., Popov, Yul., Stambolova, Al., Kabakchieva, P., Garnizov, V., 2013, p. 46).

Globally, environmental security risks also arise from industrial accidents involving emission of pollutants, transboundary air, water and coastal pollution, as well as the threat of terrorist activity using substances that are particularly dangerous to the natural environment. Protecting corporate economic interests, delays taking real steps to address these problems in a broad international context.

At the present stage of our development, some adverse trends emerge that in the future would have negative effects on life on the planet. Among them are global warming, the greenhouse effect, the thinning of the ozone layer, the increase in carbon dioxide, environmental crises in different regions of the world as a result of the large-scale deforestation and pollution (Velev, S., 2015, p. 184).

Along with the opportunities for development and self-improvement, the age of globalization leads to an increase in the vulnerability of the individual; this in turn increases the importance of the individual as an object of international security (Velev, S., 2015, p. 184).

The world can no longer afford to spend resources recklessly by inflicting irreparable harm or damage to the environment.

The risks to the national security of the Republic of Bulgaria are divided into two categories depending on the probability of occurrence of adverse events or processes, the magnitude of the destructive effects on the institutional system and the degrees of mediation between a risk factor and an adverse event.

The priority risk category includes five risk factors and their relevant areas: finance and economy, energy, criminality, social collapse, international context. These risks directly affect the condition of statehood and have direct meaning for the stability of national institutions and constitutional order.

The second group of risks includes seven risk factors and their areas: education, health, regional development, migration and demography, ecology, poverty, mass fears. These risks indirectly affect the stability of the institutions. They reinforce the significance of the first group, and hence the pressure it exerts on mega-risk and the implosion of statehood (Popov, S., Ganev, G., Popov, Yul., Stambolova, Al., Kabakchieva, P., Garnizov, V., 2013, p. 8).

The environment and human-nature relations are one of the priorities of the Bulgarian national security policy. Environmental security is the tool for implementing this priority, so vital for the existence of the nation. Environmental security is therefore considered a sectoral national security policy (Updated National Security Strategy of the Republic of Bulgaria, 2018, pp. 20-21).

1. Security policy consists in meeting environmental expertise and protection standards and in joining global or regional initiatives and environmental projects aimed at improving environmental quality and protecting environmental security.

2. The Republic of Bulgaria continues to work to reduce the negative impact of anthropogenic factors, as well as to lead an adaptation policy with regard to the effects of climate changes. Protecting and enhancing the resilience of the population remains a priority.

3. An essential aspect in the protection of environmental security is the prevention, control and consequence management of industrial accidents involving emission of pollutants, transboundary air, water and coastal pollution, as well as the threat of terrorist activity using weapons of mass destruction.

4. The management of the country's water resources is carried out on the basis of a unified information system through an inter-institutional mechanism for planning, monitoring and evaluation.

5. Efforts are also being directed towards establishing a working system for managing and overcoming the consequences of natural disasters with the active assistance of citizens and their organizations.

The forecast for the coming years is that the most likely dangers to environmental security will be the intensive growth of the global population; damage to biological diversity; climate change; groundwater pollution and drinking water shortages; food hazards; waves of refugees due to environmental pollution and environmental disasters; deforestation; industrial air and ocean pollution; soil pollution and erosion; nuclear hazards; ozone depletion; global warming (Vladimirov L., 2012, p. 15).

'Common goods' are only fragmentarily protected. Air pollution in many major Bulgarian and world cities significantly exceeds all existing international standards. The aggregate effect of industry, transport, heating with solid fuels, the inability of many municipalities to cope with the growing volume of waste, water scarcity and quality, environmentally unsuitable soil use, leads not only to an environmentally unsustainable economy, but also to significant economic and social instability. Industrial air pollution is often transboundary and can lead to international tension.

In 2011, the Security Council recognized climate change as a significant security risk. All climate models predict drought in the Balkans. Water scarcity and extreme weather phenomena might have catastrophic consequences for the country, whether caused by global or cyclical climate change. Climate change is also leading to climate refugees and conflicts, which undoubtedly will put external pressure on the country (Popov, S., Ganey, G., Popov, Yul., Stambolova, Al., Kabakchieva, P., Garnizov, V., 2013, p. 46).

The Earth's natural resources are vital to the survival and development of the human population. Some of these resources, such as minerals, energy resources, species and natural habitats, etc., after being depleted or destroyed, never recover and cease to exist. Others, such as air, water and forest resources, are renewable, but the natural recovery process is extremely slow and difficult.

Although many effects of overexploitation are felt locally, the growing interdependence of nations, and international trade in natural resources, make their demand and sustainable management a global issue (European Environment Agency, 2021).

Depletion of resources – a prerequisite for vulnerability of the international security

The well-being of mankind depends on the use of natural resources. Extracting resources and turning them into food, buildings, furniture, electronic devices, clothes, etc. is a very natural process. In recent decades, however, this exploitation goes beyond the environmental capacity to regenerate. This raises the serious question of how to ensure the long-term well-being of society. Making the economy 'green' can no doubt help.

Humanity can extract as much as it wants to have a continuous flow, but is it possible to achieve this? And, if it is, what impact shall it have on the environment? How much can actually be extracted without harming the environment?

The short answer is that we extract a lot more than the planet can produce or renew for a given period of time. Some research shows that over the past 100 years, global consumption of materials per capita has doubled while the consumption of primary energy has tripled. Or, to put it another way, each of us consumes three times more energy and twice as much material than our ancestors did in 1900. And for the time being these are more than 7.2 billion people compared to 1.6 billion in 1900.

After the end of the Cold War, issues related to environmental protection have become a subject of increasing attention in discussions on global security. The topic is not new, but if, before the deepening of globalization processes, it used to be associated with the issues related to conservation of natural resources and environmental pollution, today the range of issues is much wider. Global resource scarcity should be considered first. (Velev, S., 2015, p. 186).

The challenge can be seen in three dimensions: first of all, the inability to meet the vital needs of people which is directly related to the growth of the world's population; secondly, food shortages

due to the depletion and degradation of resources; thirdly, the structural scarcity associated with the allocation of resources (Velev, S., 2015, p. 186).

By that logic, all environmental issues could be regarded as part of the resource scarcity issue. At the same time, the issues related to prevention of wars and armed conflicts that arise from scarcity of raw materials and their deteriorating indicators, as well as to prevention of natural disasters (the reasons for which, although indirectly, are again related to insufficient resources) or environmental pollution are also an element of 'environmental security' (Velev, S., 2015, p. 186).

Each year, the international organization for sustainable development, Global Footprint Network calculates the Earth Overshoot Day, i.e. the date by which humanity's demand for ecological resources and services in a given year exceeds what Earth can regenerate in that year. With each passing year, this date comes earlier on our annual calendars. Interestingly, we first 'overshot' the Earth's budget far back in 1971, when the Earth Overshoot Day occurred on 21 December 1971. For comparison, in 2020 the Earth Overshoot Day, occurred on August 22. This means that after this date until the end of the year, humanity will have to live in debt and overspending because the Earth won't be able to regenerate the resources and services, we take from it to meet our needs. And another interesting fact, due to the closure of economies during the coronavirus pandemic, the so-called Earth Overshoot Day came three weeks later than in 2019, when it fell on July 29, and in 2018 on August 1. These dates are calculated on average for the whole planet, but for each different country the Earth Overshoot Day falls on a different date. For 2020, Qatar's Overshoot Day was the earliest – on February 11. Luxembourg and the United Arab Emirates followed, and the United States and Canada depleted their renewable natural resources on March 12 and 14, respectively. Indonesia, Niger, Myanmar and Kyrgyzstan reached their Earth Overshoot Day last - in late December. Bulgaria's Earth Overshoot Day for 2020 was reached on 22 June (Marinov, M., 2020).

Environmental and economic security priorities replace traditional security concerns, such as national defense systems, of each individual country.

In most European countries and in the EU as a whole, waste generation is growing, but at a slower rate than the economy itself. However, according to a recent report by the European Environment Agency, there are no indications that the overall goal of reducing total waste will be achieved soon.

Waste prevention is a key element of Europe's strategy to move towards a climate-neutral, resource-efficient and circular economy. Waste generation in Europe increased by 5.2% between 2014 and 2018, while EU GDP increased by 14.8% according to the EEA report, Progress towards preventing waste in Europe - the case of textile waste prevention. These patterns in the data also show that the adoption of the first waste prevention programs by countries, applied in most EU countries since 2013 or earlier, were not sufficient to reduce the amount of waste generated.

The analysis of the European Environment Agency (EEA) shows that waste generation still depends to a large extent on economic development; the EU as a whole, however, has managed to achieve a waste generation growth lower than the economic growth, or a so-called relative decoupling. Nevertheless, more needs to be done to ensure that waste is reduced in real terms in the context of economic growth.

Circular economy creates new opportunities by introducing environmental principles in the production of goods and services in order to reduce consumption and optimize the use of raw materials, water and energy sources. Circular economy imposes a new economic model, which, unlike the linear one, functions on the principle of 'closing the circle', the life cycle of products, services, waste, materials, water and energy.

By adhering to the principles of circular economy, where the value of products, materials and resources is kept for as long as possible in the economic cycle, the industry achieves sustainability in production and consumption, which leads to environmental protection, competitive products and markets, new jobs and sustainable growth. (European Environment Agency, 2022).

Geo-economics prerequisites in the struggle for resources

Energy resources, which are mainly of natural origin, occupy the first place among the strategic resources. Some of them are renewable, others are not. Common strategic resources are important

both for the world economy and the national economies.

In a market economy, production competitiveness depends a lot on what resources are.

In the light of the foregoing, it is time to chart the course for the transition from waste to resources by promoting the secondary raw materials markets and waste water reuse.

Action needs to be envisaged in the context of priority areas such as plastics recycling, food waste management, basic raw materials, construction and demolition waste, biomass and bio-based products, innovation, investment and other horizontal measures. We have already had legislative changes and measures in that direction, but they still do not have any significant effect.

A European directive on banning the use of single-use plastics - Directive (EU) 2019/904, has been adopted. The implementation of the directive aims at preventing and reducing the environmental impact of certain plastic products as well as promoting the transition to a circular economy by introducing a combination of measures tailored to the products covered by the directive, including an EU-wide ban on single-use plastics, when alternatives are available. The directive provides the EU with a strategy for plastics, an important element in the EU's transition to a circular economy.

The typical model of processes includes several stages – extraction of raw materials, production, consumption and disposal of products at the end of their life cycle. On the other hand, the circular process aims at low environmental impact by minimizing the waste quantity and excessive resource use while turning goods at the end of their lifespan into resources for other purposes through re-use, re-manufacture, re-cycle, reduction of waste material and other practices. In other words, the concept of the Circular Economy aims at renewal.

In December 2015, the European Commission published an Action Plan for the establishment of a circular economy, placing it at the center of the implementation of sustainable development policy. The Commission then proposed that the European Union rethink its approaches and make changes to the product life cycle stages: design; production; consumption; waste management and re-treatment of secondary materials.

It is no coincidence that in recent decades, humanity has witnessed various regional conflicts, including military ones, resulting from the struggle for redistribution of resources. The Gulf War can be defined as such a conflict, and, if we were to make a bolder assumption, the conflict between Russia and Ukraine can also be considered as a struggle for redistribution of resources and areas of influence.

Conclusions

Security issues have always been on the national and international agendas of countries. The struggle for resources and survival that humanity has been waging and continues to wage even today, has passed through search and finding food and shelter, to providing security from other tribes, to reach to our days when we talk about organic food or cybersecurity - concepts so unfamiliar to people only a century ago.

The article deals with some aspects of 'environmental security', including depletion of natural resources as a threat to environmental security and their relationship to economy. The policy pursued in the Republic of Bulgaria should be aimed at building a security environment comparable to the one established in the ecologically developed countries. Ecological balance and security, as well as the protection of natural resources can be achieved with economic instruments and high public awareness, as well as good institutional governance in the field of national and international security.

The implementation of the principles of circular economy, where the value of products, materials and resources is kept for as long as possible in the economic cycle, the industry achieves sustainability in production and consumption, which leads to environmental protection, competitive products and markets, new jobs and sustainable growth.

It is time for the world to adopt measures that will ensure the maintenance and preservation of the normal state of the environment and the renewal of natural resources, so that we can live in a world of environmental security.

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