

NEXUS BETWEEN ENVIRONMENTAL CHANGE AND SECURITY: DIMENSIONS, PRIORITIES AND CHALLENGES

Abstract: *In today's contemporary world, security is increasingly perceived as a variable category that means different things according to who talks about it, the entities at risks and the nature of risks they identify as well. In this regard, the question arises about whether and in which way the environment can be set as reference security object and moreover, whether and how environmental change can be accepted as a generator of problems for national and human security. This paper analyses such effects and impacts of environmental change on security. Actually, through the prism of a broader theoretical and academic frame, the paper explores the interrelationships and dynamics between environment and security, with the main goal of recognizing and determining the impact of environmental change and environmental risks on security. Finally, regarding to such an analyze, the paper explores the main aspects and challenges for considering environmental change as a security issue.*

Key words: *environment, threats, risks, security, securitization.*

INTRODUCTION

A multitude of understandings and definitions about security are present in security theory and security studies. One of the reasons for such a situation arises from the fact that different researchers apply different starting points and approaches in security analysis and research. In this regard, an additional reason is related to the fact that security is a variable category and thus means different things with regards to who talks about it and the entities at risk and the nature of the risks they identify. Therefore, security should be perceived as a concept that needs to be specified by the context it is used in. However, in its broadest sense, security mainly implies freedom from threats.

*) Ass. Prof. Dr. Sc. Institute for Security, Defence and Peace, Faculty of Philosophy – Skopje, Ss. Cyril and Methodius University.

In the traditional aspect, the understanding of security is generally related to external relations among the states. Actually, the understanding of security in this regard is generally focused on the military threats. Military actions of a country against another harms the core values of independence and sovereignty. Moreover, military activities and endeavors also harm the lives of military personnel, as well as ordinary people. According to such notion of security (dominant during the Cold War period), security exists only in the absence of any direct military threats, which means that the environment is not included in such an understanding of security.

On other side, the so-called non-traditional understanding of security moves beyond physical and military threats and includes a wider range of tangible and intangible threats affecting human lives. Compared to the traditional security understanding, which considers security for the boundaries of the states and conflicts between countries, the non-traditional security understanding considers individual and community security. In this regard, non-traditional or critical security views have proposed several new security concepts, starting from the so-called human security to global security.

Human security refers to the protection from all threats that endanger human lives, which include hunger, poverty, disease and violence as well, while global security emerged as a response to the growing unprecedented threats of global warming, epidemics, international terrorism, etc. There isn't a country which can prevent and resolve itself alone such global issues and therefore the elimination of global threats and risks requires common action with participation of everyone, and not just a select few countries. Regarding to the research focus of this paper, it should be noted that environmental change as a security risk can be related to the both human and global security concept.

Actually, between these two concepts, additional concepts have been also developed in the past period, such as the following: environmental security, climate security, food security, pandemic security, energy security, cyber security, societal security, financial security etc. Such security concepts have directly

confirmed an evolutionary character of the security concept in the context of specific security environments. Actually, such security concepts are drawing the increasing attention in security research and on the security agenda, and the reasons in this regard are mainly related to the increasing frequency of non-traditional security threats and risks. In this regard, it should be noted that such concept of human security goes beyond physical security and now includes economic security, food security, health security and environmental security.

In the following section, the focus is specifically put on the analysis of the concept of environmental security, mainly through the prism of whether and how environmental issues are becoming security ones.

1. THEORETICAL ASPECTS OF THE ENVIRONMENTAL SECURITY

There are numerous interpretations of environmental security, depending on how the environment and security are understood themselves. Actually, during the last decades, the concrete ways of achieving environmental security within the global framework of sustainable development and security agenda have become an increasingly important subject of the international and academic debate. A multitude of high-level meetings, regional forums, international scientific conferences and other multilateral events have instigated public and academic discussion on the root causes of the global environmental crisis, its possible consequences for present and future generations, as well as possible approaches to rebalancing current (economic) growth, with responsibility for the whole planet.

However, regarding the research focus in the paper, it can be noted that the concept of the so-called environmental security is the product of the environmental movement and the changed strategic and security landscape by the end of the Cold War. The most important interpretations of the concept concern the ways in which environmental change puts national security at risk, the ways in which it may be a factor in violent conflicts, and the ways in which environmental change puts human security at risk.

The beginnings of theoretical debates and analyzes about the meaning and interconnection between the environment and security can be traced back in the 80's of the last century. Actually, researches linking environmental problems to non-traditional security concerns in this period tend to reject the state-centric and militarized definitions of security that dominated the security studies during the Cold War. They support the more holistic or “redefined” conceptions of security that extend beyond protecting the state from external aggression, arguing that global, regional, and local environmental problems seriously threaten human health and well-being and/or economic security (Lester 1977, 55). According to this line of thinking, it is in the common interest of all actors, not merely the states, to protect the world against environmental degradation for the same reason they must protect against organized violence: because both have the potential to harm human, material, and natural resources on a potentially large and disruptive scale (Stephen 1995, 175-207).

A significant step forward in the theoretical linking of environment with security has been made by the emergence and development of the Copenhagen School of Security Studies. Actually, contrary to the dominant, so called traditional/military security understanding during the XX century, the Copenhagen School of Security Studies approach is one of the most original attempts in promotion of a new (expanded and deepened) security understanding.

The expanded security understanding refers to the security understanding through the prism of five sectors: military, political, economic, societal and environmental, while in term of security deepening, in addition to the state, the importance of other reference objects have been emphasized, such as: the individual, society, the region and the world.

In this regard, the environmental security concerns the maintenance of the local and planetary biosphere as the essential support system on which all other human enterprises depend (Buzan 1991, 47). So, compared to previous theoretical

security approaches, the Copenhagen School has been understanding security through a broader and deeper approach, which includes military, political, economic, social and environmental security dimensions and aspects as well.

Regarding the aspiration for such a broader and deeper security interpretation and understanding, the representatives of the Copenhagen School have developed the so-called theory of securitization, which has a significant impact on the expansion of the security concept. According to such theoretical approach, security signifies a situation marked by the presence of a (security) problem and existence of a measure that can be introduced against it. Actually, threats are an integral part of everyday life and the daily functioning of states, but they become a security problem only in the absence of measures and activities to deal with them.

In the context of such theoretical approach, Wæver noted that each question/issue can be presented as following: 1) non-politicized – the state doesn't deal with the issue and it is not a part of the public debate; 2) politicized – the issue is part of a public policy and the government decides and provides certain means to address it; and 3) securitized – the issue is presented as an existential threat and it should be addressed as a priority issue which opened a necessity of extraordinary measures in dealing with it (Wæver et. al.1992, 90). It means that securitization process is determined by presence of an issue that is so urgent and existential, so that it is important to be dealt with decisively by the top leaders prior to other issues.

In this context, the term environmental security was launched to place the environment on the agenda of the so-called “high politics” (Grager 1996, 109-116). If one adopts a broad conception of security as “the means of people “that they will continue to enjoy those things that are most important to their survival and well-being” (Ronnfeldt 1997, 473-482), it can be plausibly argued that serious environmental degradation or change can indeed threaten security. This would be particularly true if the most serious warnings about global warming or holes in the ozone layer turn out to be correct, but even more traditional environmental

concerns like air and water pollution can threaten or kill more people than a smaller armed conflicts or even wars. In the political context, then it makes sense to give such issues a very high priority.

Taking into account the past and ongoing experiences and consequences of the environmental or natural threats and disasters (floods, droughts, earthquakes, typhoons etc.), it is no doubt that they can and should be perceived as an existential threat (especially for human life and health), with high priority for dealing with them. It practically means that, contrary to the previous approach about the abovementioned natural threats as the “acts of God”, which resulted in a situation where they haven’t been perceived as a subject of study or debate, the Copenhagen School and the Securitization theory have considered them as valid subjects of the study in the field of security studies.

Another important feature of the theoretical aspect of the interconnection among environment and security is the issue of access and control over natural resources. In this regard, Renner claim that, throughout the human history, and especially since the introduction of the system of sovereign nation states, struggles over access to and control over natural resources, ... have been a root cause of tension and conflict and that history provides numerous examples of how states and nations were destabilized by environmental collapse leading to famine, migration and rebellion (Renner et al.1991, 109). Johan Galtung has also argued that “wars are often over resources” (Galtung 1982, 99), while Lothar Brock, asserts that “control over natural resources has always been important in enabling a country to wage war” (Brock 1991, 409). Sverre Lodgaard has also argued that “where there is environmental degradation, or acute scarcity of vital resources, war may follow” (Lodgaard 1992, 119). Regarding such understandings, it can be noted that access and control over natural resources may be perceived as a potent factor or factor of contribution to violence and thus threaten security in the sense of exacerbating open disputes or conflicts or by adding new dimensions to them.

2. SECURITIZATION OF THE ENVIRONMENTAL SECTOR

As mentioned above, the debate about environmental security (which dates back to the last two decades of the XX century) represents one of the first claims of broadening of security concept. Actually, according to the securitization theory, environment has become one of the five security sectors (besides military, political, economic and societal) of the broader security concept. In this regard, according to Buzan, the environment was recognized as one of the sectors that needed to be considered in their specificity for analyzing contemporary security dynamics (Buzan, 1991, 38).

The emergence of global environmental problems, such as global warming and ozone depletion, resulted in one of the first attempts to securitize the environment on a global scale. The Brandt Report (1980) suggested that ‘few threats to peace and survival of the human community are greater than those posed by the prospects of cumulative and irreversible degradation of the biosphere on which human life depends’ (Brauch 2003, 24). The World Commission on Environment and Development, in its 1987 report, recognized two major threats: (1) threat posed by the possible use of nuclear weapon; and (2) environmental degradation, as a present threat all over the world (WCED, 1987). In general, such new (environmental) threats implied the need to redefine the nature of security in an interdependent world facing new challenges.

One of the most striking features of the environmental sector is the existence of two different agendas - a scientific agenda and a political agenda (Buzan et al., 1998, 78). The scientific agenda, which is about the authoritative assessment of threat, refers to natural science and non-governmental activities. In fact, the scientific agenda consists of scientific and research institutions that investigate and analyze environmental problems. In that context, within this agenda, threats are assessed and a precondition is created for the securitization or de-securitization of an environmental issue.

On other side, the political agenda animates the public about environmental issues that are recognized by the scientific agenda and accepts political responsibility for solving such recognized issues. Actually, the political agenda creates public awareness of the problem and provides common instruments for solving it.

As most serious issues in the sphere of environmental security, around which the scientific and political agenda overlap, are perceived the following:

- disruption of the eco-system, climate change, deforestation, various forms of erosion, reduction of the ozone layer;
- energy problems, involving depletion of natural resources, nuclear disaster management, oil transportation problems;
- demographic problems, demographic expansion, epidemics, politically and socially uncontrolled migrations, urbanization;
- food problems, poverty, loss of fertile soil and water sources;
- economic problems;
- suffering of the civilian population as a result of military destruction of the natural environment, degradation of the environment by violence (Buzan et al. 1998, 74-75).

Within the securitization process in the natural environment sector, the reference object is the natural environment itself, as well as its connection with human civilization. From the securitization actor aspect, it is characteristic that in this sector, in contrast to the securitizing actors (those who emphasize the problem), there are also a large number of actors who prevent or limit the securitization process (mostly for the economic reasons). Functional actors, i.e. those who influence the dynamics in the sector, are mostly the economic entities, the chemical and nuclear industry, the fishing industry, etc. On the other hand, states and intergovernmental organizations that formulate certain rules for economic actors are also the functional actors within this sector.

Regarding the securitization concept, there are three major groups of threats to the natural environment: 1) threats to human civilization that arise from the natural environment and that are not caused by human activity (earthquakes, volcanoes, meteors, etc.); 2) threats from human activity to the nature or structure of the Earth, when the changes that are caused create an existential threat to the humanity (greenhouse gas emissions, ozone depletion etc.); and 3) threats from human activity to the nature or structure of the Earth, when the changes caused do not create an existential threat to humanity (Georgieva 2006, 57).

In general, security dynamics in the environmental sector are complex for several reasons. First of all, the dilemma is always open about the way a specific environmental problem will manifest itself and whether it will be politicized or securitized. The opponents of securitization in this sector, as well as the motives of the functional actors, represent an additional challenge. Even more, the situation may become more complicated if the environmental problems are linked to certain structural problems in society.

3. NEXUS BETWEEN ENVIRONMENTAL CHANGE AND SECURITY: DIMENSIONS, PRIORITIES AND CHALLENGES

After a long period of debate and analysis about environment and security, nowadays, there is a much clearer understanding regarding how environmental changes affect security concerns. In this sense, it should be noted that long-term environmental degradation is not a major or pervasive cause of international wars, ethnic wars, or revolutionary conflicts. Such degradation often brings misery and can exacerbate local tensions and conflicts in a society, yet such misery does not generally trigger the elite alienation and opposition necessary for large-scale violence to occur. Short-term disasters, however – floods, hurricanes, droughts, earthquakes and major accidents – can contribute to major political conflicts if

elites and popular groups blame the regime for causing or for a particularly poor or corrupt response to such disasters. In addition, where environmental resources represent concentrated and scarce sources of wealth, then even if those resources are not degraded, conflict over control and exploitation of those resources can be a source of internal violence.

Actually, environmental change poses risks to the territorial integrity and economic growth of the states, as well as to the health and welfare of people and communities, and it may increase the risk of violent conflict. Therefore, environmental change can be perceived as serious risk for national and human security. Regarding the trajectory of the so-called environmental insecurity, it should be noted that the broad history of human-environment relations and interactions has been the one of the increasing population growth, increasing use of resources per capita and increasing inequality between the richest and poorest people in the world in terms of consumption and pollution. These trends, combined with the development of industrialization as the dominant mode of production, capitalism as the near-universal economic order, and the centralized control of the means of violence (mainly by the state), have given rise to a condition where environmental change increasingly poses risks to people, states, and peace (Giddens 1985, 79).

The world's population has rapidly grown from 2.5 billion people in 1950, to around 6.7 billion in 2008 and will most likely peak at 9 billion people in 2050 (Boyden 1987, 2-3). The vast majority (80 %) of people live in developing countries. Such a growing world population has directly affected bigger production and consumption of needed products for normal human existence. This, this directly produced greater use of resources, which in turn has initiated significant environmental pollution. In many states, population and environmental changes together combine to produce environmental changes with global impact. That is in countries with large populations and large or rapidly increasing levels of per capita

such an environmental impact (such as carbon dioxide output, forest reduction, natural habitat destruction and colonization), and thus environmental changes occur with global implications for security (Goldstone 2001, 46).

In addition, although overall population growth and population density do not directly predict political risks, still, a number of distinct types of demographic changes – particularly the rapid growth in the labor force, shifts in the age distribution, unequal population growth rates between different ethnic groups, urbanization that exceeds employment growth and migrations that change the local balance among major ethnic groups – do increase the risks of violent internal political and ethnic conflicts.

Poverty is also a powerful driver of vulnerability to environmental change, as the poor have few means at their disposal to avoid, reduce or adjust to risks to livelihoods created by environmental changes. In an average day, environmental degradation and poverty combine to cause the death of 5,200 children due to diarrhea, and 2,300 children due to malaria (Bryce 2005, 33). Undernutrition is an underlying cause of over 4.6 million child deaths each year (Black et al. 2008, 140), and inadequate access to clean water and sanitation results in the deaths of 1.4 million children each year (Bartram 2005, 89). As a result of the abovementioned, it is no doubt that the combination of poverty and environmental change is producing environmental insecurity, which is the vulnerability of individuals and groups to critical adverse effects caused, directly or indirectly, by environmental change. In this regard, environmental security is achieved only in cases when individuals and groups have the ability to avoid or adapt to environmental change so that their basic needs, rights, and values are not undermined (Barnet 2001, 120).

Climate change is another significant aspect of vulnerability to environmental change that is especially a characteristic of the so-called developing countries.

Actually, the previous experience shows that climate change has potential to disrupt development in such countries. It is a result of their limited capacities for prevention and dealing with the impact of extreme weather conditions from one side, and their mostly economically dependency on climate sensitive sectors like agriculture, forestry and tourism, on the other (Wade and Jennings 2015, 89-90). However, it should be noted that the very imminent impacts of climate change are not felt only through rising temperatures. Rather, these effects come in the form of changes in the hydrological cycle. For example, changes in the average volume of annual precipitation can lead to increases in the number of torrential rainfalls, thus causing flood. Likewise, the decrease in the number of rainy days increases droughts (Ludwig et al. 2007, 48-56).

Climate change-related events have already grown into a major driver of migration, forcing families and communities to flee, mostly as a result of water scarcity, crop failure and sea level rise (Barron 2018, 67). In general, these events are expected to increasingly continue to displace people, especially in the developing countries. It is specific that such a displacement is usually interconnected with several risk factors, such as the following: homelessness, landlessness, loss of access to common property, food insecurity, joblessness, marginalization, social disintegration, etc. In fact, such factors are recognized by the conflict theory as part of the structural causes that can lead to the emergence of violence or that can seriously affect the dynamics in an existing conflict environment. It follows that the climate change consequences can also be perceived as serious security risks and threats. In this regard, the International Organization for Migration (IOM) has estimated that future effects of climate change could create 25 million to 1 billion of environmental migrants by 2050, moving either within their countries or across borders, on a permanent or temporary basis, and 1-2 billion by 2100, which could accelerate the existing conflicts or even create new ones (IOM, 2022)

Environmental scarcity also presents a significant aspect of the nexus between environmental change and security. Actually, environmental scarcity and its interactions produce several common social effects, such as the following: lower agricultural production (which can affect food security), migrations from the zones of environmental scarcity (which can affect societal security or identity security), weakened institutions (which can be related to the risks of political security). However, the influence of these social affects in threatening above mentioned security types is mainly determined by people or group perception about the existing of relative decrease in their living standards compared with other groups, or compared with their aspirations (Gurr 1993, 54).

Still, high levels of people grievance about the environmental scarcities do not necessarily lead to the widespread civil violence. Actually, civil violence, that is in general a reflection of troubled relations between the state and the society, is triggered by at least two other factors: groups with strong collective identities that can coherently challenge state authority, and clearly advantageous opportunities for violent collective action against authority. So, the aggrieved must see themselves as members of groups that can act together and they must believe that the best opportunities to successfully address their grievances involve violence.

However, there is no doubt that the presented environmental scarcities can threaten the complex relationship between the state and the society, as well as between two or more states. Falling agricultural production, migrations to urban areas (or to other states), and the reduce of economic productivity often produce hardship, and this hardship increases demands on the state. In such situations, it is no doubt that environmental scarcities can lead to the emergence of serious resentment that can even initiate violence.

CONCLUSION

In this paper, the author presented an analysis about the nexus between environmental change and security, involving multiple aspects of the ways in which environmental issues become security ones. In this regard, the presented analysis confirms that the relationship between environment and security, which has garnered increased importance since the end of the Cold war, has a complex nature, thus initiating the necessity of applying comprehensive approach in understanding such an interconnection. As mentioned above, environmental change and degradation have various impact on the behavior of the involved actors and might play a role as reason, trigger, channel and catalyst of worsening security dynamics. It is no doubt that the decrease in quantity and quality of resources, rapid population growth, climate change and the unequal resource access are the basic drivers behind the increasing environment-related security risks. In addition, scarcity of nonrenewable resources can also contribute to changing the security dynamics in the national, as well as in the international context.

On the other side, the analyzed securitization process within environmental sector also shows the existence of complex dynamics, especially in term of the way in which a specific environmental problem will be presented and whether it will be politicized or securitized. Moreover, the opponents of securitization in the environmental sector, as well as the functional actors' motive and possible connection of environmental problems with certain structural problems in society, represent an additional aspect of such complexity.

In general, it can be concluded that there are multiple aspects that create the complex dynamics of the relationship between the environment and security. Among others, the most important are the following: 1) the fact that environmental change, pollution and disasters transcend national boundaries, which means no state is immune to this process; 2) the fact that the threats are the result of both

human activity and the flows of the nature itself; 3) the fact that there are numerous actors involved in the securitization process of environmental sector; 4) the fact that economic development is inevitably determined by the functioning of industry, which in turns produces negative environmental change and effects; 5) dynamic lifestyle increasingly imposes a need for fast transport of people, goods and services today, which has also negative environmental effects.

It can be also concluded that, in general, environmental and demographic change can produce security problems of two distinctly different kinds. The first one, the so-called violent environmental security issues, reflect the impact of demographic and environmental changes on traditional security concerns, that is, the ways that demographic or environmental changes increase the risk of violent international or domestic conflicts. On other side, the so-called nonviolent environmental/demographic security issues reflect the changes in population or in the environment (emissions that damage the ozone or contribute to global warming, activity that reduces biodiversity, etc.) that have consequences across international borders that produce undesirable outcomes and thus become the issues of international security, even if they are not likely to produce violence.

As a result, it can be concluded that, because of its nature, environmental security is a complex category that reiterates the necessity of applying comprehensive approach both by state and non-state actors, when speaking of dealing with and preventing environmental risks and threats.

REFERENCES

1. Barnett, Jon. 2001. *The Meaning of Environment Security: Ecological Politics and Policy in the New Security Era*. London and New York: Zed Books.
2. Barnett, Jon. 2010. Energy Security. *The Routledge Handbook of New Security Studies*. New York: Routledge.
3. Barry, Buzan. 1991. *People, States and Fear: An Agenda for International Security Studies in the Post-Cold War Era*. Hemel Hempstead. Harvester.
4. Barry, Buzan, Ole, Wæver and Jaap, De Wilde. 1998. *Security: A New Framework for Analysis*. Lynne Rienner Publ. Colorado.
5. Brauch, Hans. 2005. *Environment and Human Security: Towards Freedom from Hazard Impacts*. Bonn: Institute for Environment and Human Security.
6. Brock, Lothar. 1991. Peace Trough Parks: The Environment on the Peace Research Agenda. *Journal of Peace Research* 28(4): 407-423. SAGE Publications.
7. Brown, Lester. 1977. *Redefining Security*. Worldwatch Paper No. 14 Washington, DC: Worldwatch Institute; Ullman.
8. Deudney, Daniel. 1991. Environment and security: muddled thinking. *Bulletin of Atomic Scientists*. April 1991.
9. Finger, Matthias. 1991. The military, the nation state and the environment. *The Ecologist* 21: 220-225.
10. Galtung, Johan. 1982. *Environment, Development and Military Activity. Towards Alternative Security Doctrines*. Oslo: Norwegian University Press.
11. Georgieva, Lidija. 2006. *Risk Management*. Faculty of Philosophy. Skopje.
12. Giddens, Anthony. 1985. *The Nation-State and Violence*. Los Angeles: CA – University of California Press.
13. Goldstone, J. (2001). Demography, Environment and Security. *Environmental conflict*. Westview Press.

14. Grager, Nina. 1996. Environmental security? *Journal of Peace Research*, Vol. 33, No. 1, pp.109-116. SAGE Publications.
 - a. Lodgaard, Svere. 1992. Environmental Security, World Order and Environmental Conflict Resolution. *Conversion and the Environment*, pp.115-136, ed. Nils Petter Gleditsch. Westview Press.
15. Paul, Diehl, and Nils Petter Gleditsch. 2001. *Environmental Conflict*. Westview Press.
16. Renner, Michael, Mario, Pianta, and Cinzia Franchi. 1991. International Conflict and Environmental Degradation. *New Direction in Conflict Theory*. pp.108-128, ed. Raimo Vayrynen. London.
17. Ronnfeldt, Carsten. 1997. Three Generations of Environment and Security Research. *Journal of Peace Research*, Vol.34, No. 4, pp.473-482. SAGE Publications.
18. Wæver, Ole, 1995. Securitization and Desecuritization. In: Lipschutz R.D. (ed) *On Security*. Columbia University Press, New York.