

Olga SKARLATO\*; Irena TELESH

\* Mauro Centre for Peace and Justice; St. Paul's College; University of Manitoba; 252 – 70 Dysart Road; Winnipeg MB, R3T 2M6 Canada.  
olyaskar@yahoo.com

## **Environmental security and policymaking: concepts and practices in North America and Europe**

**a review**

### **Abstract**

The paper presents brief excursion into history of the concept of environmental security and its practices in North America and Europe. The concept of environmental security was first introduced in the end of the XX. century when new unconventional threats were added to national security agendas of individual states. Along with traditional military aspects, such components as economic stability, rapid population growth, natural resource depletion and environmental degradation became “state security issues”. Research of the links between environment and security includes environmentally caused scarcities and conflicts, as well as the influence of environmental problems on health and on economic and political stability. The main components of this concept form the basis of the environmental policymaking on national, state and local levels. In the European countries, environmental policies are closely interlinked with and incorporated into the scheme of relevant measures of the EU which has developed the guidelines for protection of natural resources and ecological policy framework for its member-states. The Integrated Coastal Zone Management in Europe is described in more details as a powerful tool of the strategic importance for achieving sustainability in the Region.

**Keywords:** Environmental security, policymaking, Integrated Coastal Zone Management

### **1 Introduction**

The concept of environmental security has become increasingly popular in the past decade, and is discussed by scholars and experts in many different countries. And even though an agreed definition or a concept of environmental security is not recognized by all, it is evident today that the traditional Cold War meaning of security, involving primarily the military and nuclear issues, has undergone transformation. Security today has a broader meaning, and includes such aspects as economic stability, rapid population growth, natural resource depletion and environmental degradation. The new security concept puts more emphasis on the security of people and their overall well-being and needs, than the security of states.

There have been a number of attempts to define environmental security, and it is clear that the concept is defined and understood differently by people of various professions in different countries. Sometimes environmental security is discussed and analyzed, but not defined at all, which causes misunderstandings and inadequate conclusions or actions. The debates over environmental security often originate from the confusion about who is securing what and how. Most attempts to specify the links between the environment and security have focused on environmentally caused scarcities and conflicts, as well as on the influence of environmental problems on health and on economic and political stability.

## **2 Defining environmental security**

“Environmental security is the disarmament policy of the future” Klaus Toepfer, former Executive-Director of the United Nations Environment Programme

In the recent years there has been an increased interest among academia, as well as the media and the public, in the influence of environmental changes and degradation on the lives and health of people. Often environmental degradation has serious negative consequences, for example, droughts can become a cause of food shortages and infectious diseases, Global warming leads to severe climate changes which may cause deadly floods and hurricanes, etc. The scope of this problem shows the importance of taking measures on the level of national governments and international organizations. The key questions in this case are: can environmental problems be considered as part of the national security issues, how dangerous are these problems and who should deal with them.

In the framework of the debate about reconsidering the term “security” there are two main arguments. The first one states that in the contemporary world there are new unconventional threats to the security of countries (see e.g. BROWN 1977; ULLMAN 1983; CONCA 1994; LEVY 1995). These unconventional threats include, among others, natural resources depletion, the failure to respect human rights, the outbreaks of infectious diseases, global warming and population growth. The second argument is based on the assumption that the concept of the security of a country as a whole has become obsolete and requires redefinition (see e.g. DALBY 1996; MATHEWS 1991).

In the 1970s, the debate was started in scientific publications about including environmental threats in the category of threats to national security. In the framework of this debate a number of different concepts was discussed, that ranged from regarding environmental threats as the threats to national security to regarding environmental deterioration as one of the main criteria of global security. A well known environmental researcher Richard ULLMAN was among the first scholars to suggest and provide arguments to the fact that the concept of security requires a broader interpretation, because non-military threats at times can be very dangerous (ULLMAN 1983). One of the arguments states that the fast population growth in the developing countries, and, as a consequence, the struggle for natural resources and population migrations can cause serious conflicts (ULLMAN 1983). There was also a theory that the roots of the redefinition of security and adding the new unconventional threats to security was partly in the world oil crisis of the 1970s (MEADOWS et al. 1972). And even though these studies did not use the term “environmental security”,

they formed the basis for developing the concept of environmental security by describing the new threats to security and recognizing that environmental pollution and degradation is one of them.

The report of the World Commission on Environment and Development entitled "Our common future" (1987) is widely known for introducing the term "sustainable development". However, there was more to it: this report included the statement about the importance of security as an integral part of environmental sustainability. The Commission also noted that environmental problems can trigger regional conflicts.

In the beginning of 1980s research started addressing the security concept using a broader definition, rather than the previously adopted narrow military meaning of this term. The UN Commission on Disarmament and Security issues, chaired by Olof Palme, made a distinction between the terms "collective security" and "common security": "collective security" refers to traditional interstate military security issues and "common security" refers to the new non-military aspects of security, including economic development of countries, natural resource depletion, population growth and environmental degradation (LONERGAN 1999). In the process of researching "comprehensive security" WESTING (1989) expanded the concept of "comprehensive security" by identifying its two main components: political security, which includes military, economic and human factors, and environmental security, which includes the aspects of utilization and protection of the environment. According to WESTING, "comprehensive security" meant being protected from certain threats, including nuclear war, poverty, and global environmental problems. However, this definition requires clear understanding, which threats exactly are the threats to environmental security.

In the 1990s, the debates about the nature and the significance of the concept of environmental security took place (see e.g. Environmental Change and Security Project Report 1995-1999, <http://www.wilsoncentre.org>). One of the main questions of the debates was: can environmental security be considered an integral part of national security and how important and urgent is ensuring environmental security. In 1994 Robert KAPLAN published an article which contained clear arguments about the coming anarchy. According to KAPLAN (1994), such factors as population growth, pollution, urbanization and the accessibility of weapons in West Africa lead to chronic violence and the forced migrations of people. Moreover, KAPLAN stressed that the combination of these factors is achieving a critical level in other countries of the world as well, and even the developed countries of the North are not protected from the threat of the coming anarchy. The article led to mixed reactions, from support and approval to criticism for its one-sided arguments, the lack of thorough analysis and being overly alarmist (DALBY 1996).

As mentioned above, the meaning of the term "security" in the context of environmental security concept varies from the narrow military interpretation connected with armed conflicts to a broader concept, aimed at improving the human wellbeing. There were attempts to interpret environmental security ignoring the term "security" and concentrating on environmental problems and natural resource depletion connected with the emergence of violent conflicts (see e.g. HOMER-DIXON 1991; LIBISZEWSKI 1992). Furthermore, environmental security research can be used in the process of political decision making in order to integrate environmental issues into government policies (MATTHEW et al. 2002). This requires defining the links between environmental problems and security issues.

The process of identification of environmental problems that can threaten state security is difficult and controversial, because by far not all environmental problems fall into this category. Moreover, most environmental problems are not directly related to security issues. Richard ULLMAN defines threats to national security as an action or sequence of events that (1) threatens drastically and over a relatively brief span of time to degrade the quality of life for the inhabitants of a state, or (2) threatens significantly to narrow the range of policy choices available to the government of a state or to private, non-governmental entities (person, groups, corporations) within the state (ULLMAN 1983). According to this definition, most environmental problems are not related to the sphere of national security, because they don't cause such fast and significant complications.

While researching environmental security within the department of Environmental Technologies of the Northwest Nation Laboratory, Brian SHAW suggested the following mechanism of revealing the links between environmental problems and national security: these links should be regarded either from the environmental or from the security point of view (SHAW 1995). If regarding this issue from environmental viewpoint, one should identify all environmental problems typical for a particular region, characterize the likely consequences of these problems, and then identify the particular aspects of security which can be threatened by these problems. The second approach – regarding environmental security from security standpoint – requires comprehensive and clear definition of “national security” issues and identifying those environmental problems that can threaten national security (SHAW 1995). According to SHAW, after the end of the Cold War due to elimination of the direct threat from the Soviet Union, other threats to US security – regional conflicts, in particular – are on the national security agenda. SHAW regards stability of US development on the country level during the Cold War according to the equation in which *state stability* is equal to *military parity of the Superpowers*. For the same period of time he considers that *regional stability* is a combination of *regional military parity*, and *economic, political and cultural aspects*. Today this equation has undergone transformation, and while *regional stability* remains a combination of the above mentioned factors, one new aspect – *environmental resources elements* – has been added to the combination (SHAW 1995). In his research SHAW comes to a conclusion that environmental problems in every region threaten the stability of this region's development, but only occasionally the stability of the region's development is harmed badly enough to threaten the security of this region (SHAW 1995).

Saimon DALBY, a professor of geography and economy has a similar point of view. He argues that while certain links between environmental pollution and emergence of violent conflicts do exist, the likelihood of starting a large-scale war for natural resources is very small (DALBY 2002). Moreover, DALBY considers it necessary to place empiric research of environmental security into a broader context of global economy and urbanization (DALBY 2002).

However, among the research community there are also proponents of the concept of environmental security, who stress the advantages of the concept. For example, Richard MATHEW (2002) notes that environmental security has reinvigorated important elements of security research and policy that were marginalized or abandoned during the Cold War period and the research of environmental security has made important and pioneering contributions to understanding the shifting sources of violence and changing requirements of security in an age of unprecedented inequality and interdependence. Jon BARNETT (2001)

concludes that environmental security is more important than many other political issues of today and that it is a risky but necessary venture.

The comprehensive and full definition of the concept of “environmental security” has not been developed at this point. In order to work out such a definition it is important to understand, which key elements are included in the concept of environmental security. Basing on the analysis of scientific publications in this field, the following points can be considered as key to the meaning of the environmental security concept:

- Public safety from environmental dangers caused by natural and human processes,
- Natural resources depletion and scarcity and the growing gap between supply and demand of environmental resources,
- The correlation between violent conflicts and environment degradation.

Environmental security is also conceived as a way of addressing new unconventional threats. The major threats to environmental security include: climate change and global warming, ozone depletion, air and water pollution, water scarcity, human population growth, deforestation, nuclear safety issues, and the possible usage of biological weapons and spreading of unknown viruses. Addressing and eliminating these threats properly and in time will increase the security of people and improve the state of environment.

Basing on the above mentioned considerations and having analyzed the attempts of researches to define the concept of environmental security, the conclusion can be made that the existing definitions of this concept do not include all the essential components. Moreover, in the developing countries the concept of environmental security is often considered as a program meeting the interests of developed and wealthy nations, and because of this, developing countries are not taking environmental security seriously (CONCA & DABELKO 2002). Due to the fact that the comprehensive definition of environmental security has not been developed at this point, the concept of environmental security in this publication is regarded as a combination of the main components of environmental security and the major threats to environmental security discussed above.

## **2.1 The main tendencies in environmental security research, and institutions, agencies and projects that provide it**

The concept of environmental security was introduced in the end of XX c. At present there are several institutions working on environmental security projects worldwide. While some of them concentrate their studies on research of environmental security concept in general, others regard environmental security according to their specific field of study.

Environmental security research is being conducted in the frameworks of various agencies and departments of individual countries. For example, in the USA, the Environmental Protection Agency (EPA) is responsible for environmental research and policymaking on the national level, and ensuring environmental security

is a task, which is spelled out in EPA mission “to protect human health and the environment” (<http://www.epa.gov/epahome/aboutepa.htm>). EPA is working to develop tools and information that will help prevent and detect the introduction of contaminants into buildings or water systems, as well as decontaminate and dispose of contaminated materials should contamination occur. The focus of these efforts is aimed at providing advice, guidance and scientific expertise to emergency response personnel, decision-makers, and government officials that will result in improved protection for all citizens. Furthermore, EPA National Centre for Environmental Assessment (NCEA) conducts risk assessments, carries out research to improve the state-of-the-science of risk assessment, and provides guidance and support to risk assessors (<http://cfpub.epa.gov/ncea/>). Moreover, the Department of Defense and the Central Intelligence Agency (CIA), among other federal departments, contribute to environmental security research and implementation. For example, the National Defense Center for Environmental Excellence (NDCEE), which was established in 1991, serves as a national leadership organization which addresses high priority environmental problems for the Department of Defense, other government organizations, and the industrial community (<http://www.ndcee.ctc.com/>). The Central Intelligence Agency contributes to environmental security research and implementation by conducting analysis and developing forecasts of potential threats to national security (<http://www.cia.gov>). In 2000 CIA published a report “Global Trends 2015: A Dialogue About the Future With Nongovernment Experts” in which the forecast of world development for the next 15 years was presented. Natural resources and environmental problems are analyzed in the report among the main factors of world development for the given period of time, and it is stated that contemporary environmental problems will persist and in many instances grow over the next 15 years. Particular alarming are increasingly intensive land use, significant degradation of arable land, the loss of tropical forests, the increase of greenhouse gas emissions and significant loss of biodiversity (Global Trends... 2000).

The example of Germany provides a case of European country where the Federal Ministry for the Environment, Nature Protection and Nuclear Safety is responsible for establishing national environmental policies, and the Green Party plays a key role in implementing these policies. The Green Party has first entered the German national parliament (Bundestag) in 1983 after it received 5.6% of the vote in the federal election, and now the Greens (Bündis '90/Die Grünen) are firmly established within the party system in Germany (JÄNICKE & WEIDNER 1997). The major issues of the Green's policymaking include phasing out nuclear energy and ecological tax reform (RÜDIG 2002; KERN et al. 2004). These issues are dealt with by the Federal Environmental Ministry, the principle functions of which include dealing with fundamental environmental policy issues like climate protection, soil and water conservation and remediation of contaminated sites, and nuclear safety issues.

There are several non-governmental projects and research centers in North America and Europe that do the most extensive and detailed research in the field of environmental security.

*Environmental Change and Security Project (ECSP)* at Woodrow Wilson International Center for Scholars, Washington, DC, brings policymakers, practitioners, and scholars from around the world together to address the public and fellow experts on topics of environmental and human security importance and to inform policymakers, activists, researchers, and the general public how global population dynamics interact with environmental degradation within a broad foreign and security policy context (<http://www.wilsoncenter.org/ecsp>).

Since 1994, ECSP has explored the connections among the major challenges facing the world in the 21st century, like population growth, water scarcity, degraded ecosystems, forced migration, resource depletion, etc., and their links to conflict, human insecurity, and foreign policy. ECSP programs and publications have examined the relationships among population, biodiversity, disease, water, economic development, migration, political stability, and violent conflict. Moreover, ECSP's China Environment Forum creates special programming and publications to facilitate dialogue among U.S. and Chinese scholars, policymakers, and nongovernmental organizations on environmental and energy challenges in China (China Environmental Series 2007). ECSP publishes two annual journals, the *Environmental Change and Security Project Report* and the *China Environment Series*, as well as the biannual newsletter *PECS News* (A Population, Environmental Change and Security Newsletter).

Environmental security is also associated by some researchers with the concept of human security, which was developed in the framework of UN Development Programme (UNDP). The UNDP Human Development Report 1994 stated that security has far too long been interpreted narrowly: as security of territory or as protection of national interests or as global security from the threat of nuclear holocaust; forgotten were the legitimate concerns of ordinary people who sought security in their daily lives (Human Development Report 1994). In the framework of rethinking the concept of security, it has been proposed by UNDP to shift the focus from nuclear security to human security (BOOTH 2005). Moreover, human security can be said to have two main aspects: firstly, safety from such chronic threats as hunger, disease and repression, and secondly, it means protection from sudden and hurtful disruptions in the patterns of the daily life (Human Development Report 1994). This sentiment became a guiding principle of Global Environmental Change and Human Security Project (GECHS) which was founded in 1996 and developed theoretical basis for environmental security and human security (<http://www.gechs.org>).

GECHS is an interdisciplinary research project that strives to advance research and a policy effort in the area of human security and environmental change, and it is a core project of the *International Human Dimensions Programme on Global Environmental Change (IHDP)* (<http://www.ihdp.uni-bonn.de/>). Located in Bonn, IHDP is part of an international network of research alliances that brings together social scientists and natural scientists from around the world to study and develop solutions to environmental problems.

GECHS arose from the nexus of two areas of study: the human dimensions of environmental change and the reconceptualisation of security. The basic objectives of the project are threefold: 1) to promote research activities in the area of global environmental change and human security; 2) to promote dialogue and encourage collaboration among scholars from around the world; and 3) to facilitate improved communication and cooperation between the policy community, other groups, including NGOs, and the research community (LORENGAN 1999).

It is the primary purpose of GECHS to promote research on various topics related to environmental change and security through facilitating the networking of researchers, circulating information, and linking with other organizations active in this area. The key research themes include: Conceptual and Theoretical Issues in Environment and Human Security; Environmental Change, Resource Use, and Human Security; Population, Environment, and Human Security; Modeling Regions of Environmental Stress and Human Vulnerability; Institutions and Policy

Development in Environmental Security. These activities are facilitated through the recently developed International Network on Environment and Security (INES). The mission of INES is to promote research cooperation and collaboration among research institutions worldwide addressing the links among environment, impoverishment and security. The research network - even in its formative stage - is truly multidisciplinary, involving researchers from geography, economics, sociology, environmental science, engineering, biology and political science. The objective then is to link policy makers and researchers in order to facilitate implementation of environmental measures and projects. The major research findings of the project can be found in the annual *IHDP Reports* and *GECHS' AVISO Bulletin*.

The *Global Environmental Change and Human Security Project at University of California, Irvine (GECHS-UCI)* was established in 1999 by Dr. Richard Matthew, who is an expert in unconventional security and transnational security issues such as terrorism, global environmental change and landmines. The objectives of GECHS-UCI were to undertake original, interdisciplinary and participatory research; collaborate with academics and policymakers in developing countries; develop policy recommendations and educate the public on the ways in which environmental change interacts with other transnational forces to affect the lives and welfare of individuals and groups around the world, especially in developing countries. In 2003, GECHS-UCI was incorporated into the *Centre for Unconventional Security Affairs (CUSA)* at the University of California, Irvine. CUSA conducts research and provides a range of educational and public services focused on four areas related to threat and vulnerability: Biological Security, Environmental Security, Global Terrorism, and Human Security (<http://www.cusa.uci.edu/index.html>).

Education is a crucial component required for resolving environmental conflicts and ensuring environmental security. Education in this case is considered in a very broad sense and includes environmental education and peace education starting from the nursery school, continuing throughout the school years into undergraduate and graduate studies. It is also important to include the general public education via media/conferences/seminars, as well as educating policymakers.

One of the examples of an undergraduate University program in Canada that specifically concentrates on environmental conflict resolution is the Trudeau Centre for Peace and Conflict Studies at the University of Toronto (<http://www.trudeaucentre.ca/>). This B.A. degree program examines violent strife, from war between countries to revolution, insurgency, ethnic clashes, terrorism, and genocide within countries and concentrates on the underlying causes of this strife, including poverty, resource scarcity, weapons proliferation, competing claims for justice, and failures of foreign-policy decision making (<http://trudeaucentre.ca/undergradprogram-programoverview.html>).

One of the key elements in this approach to environmental security is natural resources and its unequal distribution. Dr. Thomas HOMER-DIXON, Programme Director and one of the recognized world's authorities on environment and security, names the following reasons to resource scarcity: the overall decrease of quality and quantity of renewable resources, population growth and as a result increased demand and unequal access to natural resources (HOMER-DIXON 1994). Furthermore, he names four social factors that have a considerable influence on emerging of violent conflicts: the decrease of food production; economic recession; population migrations; ineffective social and civil institutions (HOMER-DIXON 1991).

This program is associated with large internationally known research projects that addressed emerging of violent conflicts due to resource scarcity. The completed studies include a 3 year project on Environmental Change and Acute Conflict, a 4 year project on Environmental Scarcities, State Capacity, and Civil Violence, and a 2 year project on Environment, Population and Security (<http://link.library.utoronto.ca/pcs/search.cfm#Related>). The researchers have completed papers on water scarcity and conflict, rapid urbanization and urban violence, environmentally induced migration and ethnic violence, the determinants of social adaptation to environmental and population stress and methodological issues (e.g. HOMER-DIXON & BLITT 1998). They have also conducted and published case studies of environmental stress and violence in Rwanda, South Africa, Bangladesh-Assam, Bihar (India), Pakistan, China, the Philippines, Indonesia, Nicaragua, Chiapas (Mexico), Gaza, and the Jordan and Senegal River basins. Materials accumulated over the course of the above projects have been compiled into an extensive Environmental Security Database containing approximately 20,000 items relating to the study of the links between environmental stress and violent conflict in developing countries (<http://link.library.utoronto.ca/pcs/search.cfm>).

Therefore, the conclusion can be made that environmental security research is conducted in the frameworks of several institutions, agencies and projects according to their primary field of study (e.g. human security, resource scarcity, population dynamics, etc.). For example, the Trudeau Centre for Peace and Conflict Studies at the University of Toronto regards environmental security mainly from the angle of the possibility of emerging of violent conflicts due to resource scarcity, while GECHS Project emphasizes human security as being the key aspect of environmental security concept. There is no one organization that would concentrate on environmental security research in particular, and consider all existing approaches to environmental security. Moreover, the term “security”, as well as the components of environmental security concept, are often understood and defined differently by various institutions. Such variety of approaches to environmental security provides stakeholders and politicians with a chance to choose a suitable approach to environmental security in the course of the policymaking process.

## **2.2 Environmental policymaking: Integrated Coastal Zone Management in Europe, with emphasis to German experience**

The increased security concerns of the past years have got their implications on European environmental policies. Environmental security aspects, for example, the consequences of war for environment and the links between scarce resources and conflict, have moved up to the European policy agenda (2003 Environment Policy Review).

The Baltic Sea region provides a good example of ensuring environmental security not by a single country, but by the means of European governance of the “Baltic community” (a regional case of “global governance”). The concept of global governance has been widely discussed by the academia in the recent years, even though the clear definition of this concept hasn’t been agreed upon at present (see e.g. BIERMANN 2004). In general, global governance is an international regime, which is carried out by one or several institutions with certain authority and power. In the Baltic Sea Region there are three main forms of governance beyond the nation state: Helsinki Convention (international regime, the form of international governance by nation states), Baltic 21 (international policy network, the form of international

governance with nation states), and Union of Baltic Cities (transnational network, the form of transnational governance without national states) (KERN & LÖFFELSEND 2004). In the case of the Baltic Sea Region, the above mentioned institutions of the European governance, along with the single nation states, play the major role in developing and implementing environmental policies and measures. Therefore, when applying the concept of environmental security to the Baltic Sea Region, one should take into consideration environmental policies and regulations of individual Baltic countries, and place it in a sustainability oriented framework of the multi-level European governance.

The environmental politics in Germany influences a lot the European environmental strategy. The main components of the environmental security concept form the basis of the German environmental policymaking on national, state and local levels (see e.g. WALLACE 1995; SCHREURS 1992), although the term “environmental security” is not often applied in Germany. There is a well developed legal basis, established environment-protection institutions, substantial ecological policies, and a number of efficiently completed and ongoing environmental projects in Germany (see e.g. WEIDNER 2002; KERN et al. 2004). The basic environmental policy projects in this country include climate protection policy, in particular energy policy and the introduction of environmental taxes, as well as the development of a national sustainability strategy (KERN et al. 2004). German environmental policies are closely interlinked with and incorporated into the scheme of relevant measures of the EU which has developed the guidelines for protection of natural resources and an ecological policy framework for its member-states (see e.g. German Environmental Report 2002; DOLZNER & THESING 2000). Climate change, the loss of biodiversity, and forest degradation are among the most serious environmental problems in Germany (STANNERS & BOURDEAU 1995). In the meanwhile, Germany shares its borders with European countries, each of them having similar environmental policies and regulations, as well as various environmental problems. Moreover, Germany is also sharing the waters of the Baltic Sea and the consequent environmental problems with eight other Baltic countries, including Russia (for details about environmental policymaking in Russia, see SKARLATO 2002). Due to the fact that environmental pollution does not respect the administrative borders in the sea as well as in the air, the environmental security issue is of exceptional importance.

One of the best examples of a program related to ensuring of environmental security in the Baltic Sea Region and conducted by Germany along with other European Union countries is the process of the Integrated Coastal Zones Management (ICZM). Coastal areas constitute geographic areas of special interest from both environmental and socio-economic development perspectives. Presently the coastal zone occupies less than 20 % of the Earth’s land surface, yet by 2025, three quarters of the world’s population is expected to live in the coastal zone worldwide, and hence human activities there will impose disproportionate pressures on the Earth System (LE TISSIER & KREMER 2005).

The definition of Integrated Coastal Zones Management was provided by the European Commission: ICZM is a dynamic, continuous and interactive process designed to promote sustainable development of coastal zones (Towards a European Integrated Coastal Zone Management Strategy 1999). ICZM has to integrate three basic objectives in the sustainable manner: coastal protection, nature and resource conservation, and economic development. The word “integrated” here means various things: integration of land and sea, integration of objectives and visions, integration of instruments and strategies to reach these objectives,

integration of stake-holders in policy making, administration, science and local population, integration of sectors, branches and interests (SCHERNEWSKI & SCHIEWER 2002). The stakeholder analyses and considerations are essential in the decision-making process concerning various aspects of coastal zone functioning: tourism, recreation, fishing, harbor development, nature protection, agricultural and industrial development (GLAESER 2002).

The promotion of ICZM in Europe was given an added impetus in 1995 following a Communication from the Commission to the Council and European Parliament on ICZM calling for action against the continued degradation of Europe's coastal zones (ROBERTS 2005). The Commission on Environment of the European Union has operated a Demonstration Program on ICZM in 1996-1999 in order to provide technical information about sustainable coastal zones management, stimulate debate among various actors involved in planning, management or use of European coastal zones, and to generate consensus regarding ICZM measures. In 2000 the Commission has adopted two documents: a Communication to the Council and the European Parliament on ICZM strategy and a Recommendation of the European Parliament and of the Council concerning the implementation of ICZM in Europe. According to these documents, EU countries should formulate their own national ICZM strategies following certain recommendations. These strategies should identify: the roles of administrative actors, the instruments for implementation of the program, sources of financing and monitoring systems, as well as develop and maintain regional or local legislation and policies in order to implement the ICZM programs (Recommendation of the European Parliament 2002). It is emphasized that an integrated, participative territorial approach is required to ensure that the management of the Europe's coastal zones is environmentally and economically sustainable (Communication from the Commission to the Council and the European Parliament on Integrated Coastal Zone Management 2000). The key principles for ICZM were identified as (1) broad overall perspective, (2) long-term perspective, (3) adaptive management, (4) local specificity, (5) working with natural processes, (6) involving all parties concerned, (7) support of relative administrative bodies, (8) using a combination of instruments (ROBERTS 2005).

Among other ICZM related activities in Europe, the development of the ecosystem approach to management and planning in the coastal areas is of exceptional importance. For example, UK Government has advocated both the ecosystem approach and ICZM as tools for improved marine management in its recent marine strategy (ROBERTS 2005).

Integrated Coastal Zone Management is a new policy field and an important area of research; it deals with the competing demands for space and coastal resources, as well as with the resulting conflicts (GLAESER 2004). For example in Germany, in order to gradually replace nuclear energy with renewable energy and increase the percentage of renewable energy sources in power supply to at least 12.5 percent by 2010, according to 2004 Renewable Energy Sources Act (Gesetz zur Neuregelung des Rechts der Erneuerbaren Energien im Strombereich 2004), it is necessary to considerably increase the amount of offshore wind mills. The construction of such mills both initiates support and gathers criticism. The arguments for constructing more wind mills focus on macroeconomic issues, infrastructure investments, as well as energy and climate policies, while the critics are concerned with consequences like potential damage to tourism and increased risk from maritime accidents (GLAESER 2004). In this case a comprehensive and integrated strategy for managing coastal zones should be used to resolve the existing conflicting issues.

For such conflicts, ICZM has proved to be an effective process of good decision-making based on sound science, a holistic approach and public participation (ROBERTS 2005).

At present in Germany a number of national reference-projects on Integrated Coastal Zone Management are being conducted. One of these projects, which started in May 2004, is entitled "Research for an Integrated Coastal Zone Management in the German Oder Estuary Region (ICZM-Oder)" (<http://www.ikzm-oder.de/>). The Oder estuary is located at the border between Germany and Poland and is characterized by a high nature potential with multiple forms of landscape and formative large coastal waters. At the same time the whole region is suffering from massive economic problems and high gradients between east and west as well as between coast and hinterland. The ICZM-Oder Project is aimed at establishing a regional integrated coastal zone management program and at linking the German and Polish coastal region. The important goal of this Project is to work out methods and structures between these two countries in order to ensure the sustainability of region's development, in particular tourism and environmental quality. In the course of this project a number of conflicting issues came up, which indicates that the development of an Integrated Coastal Zone Management program requires careful consideration of environmental security issues. For example, tourism development and nature preservation are among the most important regional issues, but they often conflict with the social and economic activities of the region. The increasing competition for the coastal areas between such users as offshore wind energy, oil and gas pipelines, shipping ports and recreation create tension and can cause conflicts. To solve this problem and to minimize the existing tensions ICZM-Oder Project is aimed at developing of the spatial planning instruments, which will help coordinate the actions of various coastal zone users. This project is an important step towards developing a national ICZM strategy for Germany, as well as it is a tool facilitating German-Polish cooperation in the environmental policymaking process. Furthermore, specific ICZM-related research relevant to the Oder Estuary is accumulated during the Project and is put together into a database, which can be used to help prevent the emergence of new unconventional threats in order to ensure the security of the environment and the people of the region.

The Integrated Coastal Zone Management programs that are being developed in Europe and in Germany in particular, correspond to the concept of environmental security, even though this fact is not considered directly in these programs. While the environmental security concept is related to human security and is conceived as a way of addressing new unconventional threats, such as environmental resource depletion, air and water pollution and nuclear safety issues, ICZM suggests the way to deal with these problems in the coastal zone areas. With the concept of environmental security being a theoretical approach to the issues linking security and environment, ICZM is a practical solution for achieving sustainability in coastal development. Moreover, while environmental security concept deals theoretically with environmentally induced conflicts, ICZM is a tool to resolving such conflicts. Due to the fact that the coastal zones are of strategic importance to all Europeans and are considered the most valuable areas within EU by An Assessment of the Socio-Economic Costs and Benefits of Integrated Coastal Zone Management (2000), ensuring of environmental security in these regions is of particular importance.

The recent synthesis of knowledge on the ecology of the Baltic coastal waters and related aspects stresses the necessity to develop a joint, pan-European approach to ICZM which is a way to provide suitable concepts for a sustainable

development of Europe (SCHIEWER 2008). According to SCHIEWER (2008), in future there will be increasing scope for conflicts between nature conservation, tourism, different types of use in the coastal and near-shore areas, and coastal protection. Meanwhile, legislation and competence in respect to coastal area problems not only differ between European countries but vary considerably even between the federal states of Germany. Consequently, it is important to select reference and study areas for combined and comparative natural scientific and socio-economic investigations in the region, the main goal of which should be to support the function of natural rather than human-disrupted capital by feedback from society (SCHIEWER 2008).

Even though at present most national states in Europe have no official ICZM strategy, there exist many examples of practices reflecting one or more of the ICZM principles, and there is an understanding that ICZM is a *process* (De JONG & VOLLMER 2005). This is illustrated well, for example, by the Dutch-German-Danish political cooperation on the protection of the Wadden Sea – the trilateral cooperation which has since 1978 developed an incorporated several ICZM elements and principles (VOLLMER & De JONG 2004).

Similarly to the Baltic Region, the Mediterranean coastal zones are characterized by high concentrations of population and economic activities which lead to conflicts over the use of resources, intensive land use, urbanization, and environmental degradation resulting in formation of some 100 hot spots in the 19 Mediterranean countries (COCCOSSIS 2005). For this European region, the Integrated Coastal Area Management (ICAM) offers an integrative framework based on the principles similar to those of ICZM, which, however, still rests largely on national level environmental policy-making meanwhile the real ICZM strategy requires broadening of the actions envisaged incorporating as many actors as possible (COCCOSSIS 2005). Being a dynamic process, ICZM strives to coordinate all the development in the coastal zones within the limits set by natural system dynamics and carrying capacities. Taking into account the existing conflicts of interests, inter alia, between the exploitation of wind energy and fisheries or between harbour development and nature conservation, ICZM aims at supporting sustainable, environmentally compatible and smooth development in the coastal areas using holistic approach (LÜTKES & ELL 2005).

### **3 Concluding remarks**

While the main components of environmental security concept have already been incorporated into the North-American and European environmental policymaking processes, the concept itself has not been widely recognized yet and needs further clarification and improvement. In certain countries, for example, in Germany there exist well developed “packages” of environmental protection measures and practices. However, on the pan-European as well as on pan-American basis there is a certain lack of theoretical background for these policies and practices, and the concept of environmental security still remains one of the “overlooked” theoretical approaches.

Due to the fact that environmental security addresses new unconventional threats and conflicts, and is connected with human security, it is closely tied to the concept of sustainable development. In the meanwhile, the implementation of the

national sustainable development strategy is generally one of the priorities of the environmental policymaking. As the development of the concept of environmental security evolves, it would seem essential for any country to involve itself in the tracking of the progress of the concept's evolution and to be directly engaged in helping to shape the concept and to implement it into environmental policymaking process. The specific environmental measures (actions, programs, etc.) should be implemented based on the regional approach. The Integrated Coastal Zone Management program which is being developed in Germany is a good example of implementation of such measures into practice. By means of addressing the issues of sustainable management of coastal zone areas, ICZM serves as a tool for incorporating the environmental security concept into the environmental policymaking. In order to contribute to ensuring environmental security in the Baltic region, more international ICZM projects should be conducted. It is of special importance to conduct these projects in cooperation with those countries and regions which do not fall under the environmental requirements of the EU and which have less developed environmental policies.

Nowadays German environmental policies are among the most effective ones in the world due to a number of factors. First of all, the green movement in Germany and the creation of the Green party, which was able to gather enough support to enter the federal government and to become a member of the ruling coalition, contributed to effective environmental policymaking. Moreover, Germany is a member of the EU, which imposes certain environmental requirements on the member states. In addition to that, comparatively high public awareness and public participation (recycling, sorting out trash, promoting the use of recycled products, saving water, etc.) ensures the implementation of the existing environmental policies.

The roots of the main and the most complex current environmental problems, however, are in the decision making and policy making. Environmental issues should become a priority on the national level. Germany, along with some other European countries, set a positive example of developing and implementing effective national environmental policies. For such change to happen in other countries, the politicians there must realize the importance of protecting the environment and then incorporate environmental measures into all major areas of national politics. Considering and dealing with environmental issues both by politicians on the national level and by general public in their own regions will contribute to ensuring environmental security and will lead to more effective environmental policymaking and implementation of measures securing the environment.

## **4 Zusammenfassung**

Die Arbeit gibt einen Überblick über die Sicherheitspolitik im Kontext von Umweltproblemen in Nord Amerika und Europa. Der Begriff Umweltsicherheit wurde im ausgehenden XX. Jahrhundert geprägt. Er umfasst neben dem herkömmlichen Sicherheitsverständnis im militärischen Sinne solche Probleme wie ökonomische Stabilität, schnelles Bevölkerungswachstum, Ressourcenverknappung und Umweltzerstörung. In der Umweltpolitik sowohl auf nationaler als auch auf regionaler Ebene gewinnen Sicherheitsfragen zunehmend an Bedeutung. Am Beispiel des Integrierten Küstenzonen Managements in den Ländern der Europäischen Union wird dies näher erläutert.

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