

## **STRATEGY OF ENVIRONMENTAL SECURITY**

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### **ABSTRACT**

The main causes of the crisis states are threats of natural (extreme floods, long term drought, extreme weather events) or anthropogenic provenance (major accidents, release of biological agents, terrorism and disruption of the function of critical infrastructure). The aim of all activities of the environmental security is primary the connection of the environmental protection and the security interests of the Czech Republic. The object of the approved strategy is: Firstly, the suggestion of an extension of the existing measures that will minimise the risks of the development of crisis situations caused by the interaction of the environment and society, secondly, the identification of the threats and finally the risks assessment of the development of crisis situations threatening the environment. The main way to reach the environmental security is to complete the system of specific legislative, institutional and information measures.

### **Key words:**

Crisis management, environment, environmental security

### **ABSTRAKT**

Hlavními příčinami vzniku krizových stavů jsou hrozby přírodního původu (rozsáhlé povodně, dlouhodobé sucho a extrémní meteorologické jevy) a hrozby způsobené činností člověka (závažné havárie, únik biologických agentů, terorismus a narušení funkčnosti kritické infrastruktury). Účelem všech aktivit v environmentální bezpečnosti je především propojení ochrany životního prostředí s bezpečnostními zájmy ČR. Cílem přijaté koncepce je navrhnout rozšíření existujících opatření, která povedou k omezení rizik vzniku krizových situací, vyvolaných interakcí životního prostředí a společnosti, identifikace hrozeb a následně vlastní hodnocení rizik vzniku krizových situací, které

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ohrožují životní prostředí. Hlavním úkolem pro dosažení environmentální bezpečnosti je dopracování systému konkrétních legislativních, institucionálních a informačních opatření.

**Klíčová slova:**

Krizové řízení, životní prostředí, environmentální bezpečnost

## **1 INTRODUCTION**

The human activity brings a wide range of risks not only for the right function of the ecosystem but also for both human health and life quality. The relationship between ecosystems and human life quality are determined by many factors. The hazards for environmental security can be both anthropogenic and natural factors, mainly disasters. The segments of environment as well as the whole ecosystems, not always replaceable by the technology development in the course of time, may be threatened. It is important to ensure the safety of ecosystem and its basic functions to sustain the life quality.

The environmental safety is defined as a state in which the probability of development of crisis situation, caused by disruption of the environment, is still acceptable.

Environmental protection against the effects of the crisis situation has not yet been systematically defined. Therefore, it was recommended during the preparation of the Strategy of Civil Protection of the Czech Republic<sup>1</sup> to work out a separate strategy of protection of the environment against risks of disasters of both anthropogenic and natural origins.

The approved Strategy of Environmental Security 2012-15 (-2020)<sup>2</sup> was created and discussed by the team of experts of the Ministry of the Environment of the Czech Republic and the Ministry of the Interior of the Czech Republic in collaboration with university scholars and representatives of other experts organisations between 2009 and 2011.

## **2 BACKGROUND AND SUMMARY OF ENVIRONMENTAL SECURITY STRATEGY**

The international documents, in particular the Security Strategy of NATO<sup>3</sup> and the Strategy of Civil Protection of EU<sup>4</sup> were in the background of The Strategy of Environmental Security of the Czech Republic. Various directions of the civil and environmental protection are mentioned in the papers of Council of the European Union concerning the prevention and reduction of disasters and they are all included in the strategy. The objectives of the Hyogo Framework for Action in Europe were taken into consideration as well as the international conventions on the prevention of transboundary effects of major accidents and the disaster risk reduction.

The Strategic Framework for Sustainable Development of the Czech Republic<sup>5</sup>, the State Environmental Policy of the Czech Republic 2012-2020<sup>6</sup> and the Security Strategy of the Czech Republic<sup>7</sup> belonged among the key documents.

The main objective of all activities in the field of environmental security is the connection between the protection of the environment and the security interests of the Czech Republic.

The aim of the strategy is to propose the enlargement of existing measures leading to the reduction of the crisis situation risk caused by the interaction between the environment and the society. Another goal of the strategy is the hazard identification and subsequently the environmental risk assessment.

The strategy includes following areas:

- hazardous chemical and radioactive substances, nuclear materials and biological agents (CBRN substances),
- critical infrastructure disruption,
- terrorism,
- major accidents,
- major flood,
- long-term inversion,
- long-term drought,
- extreme meteorological phenomena,
- wildfire.

The strategy defines two main origins of hazard, anthropogenic and natural. Two problems to be solved emerged in the field of the sources of the hazards of anthropogenic origin, firstly, the definition of CBRN substances according the selected criteria. The principal aim of the suggested measures is to prevent the risk of human failure and

the easy availability of the CBRN substances which can lead to their misuse. In general, there is enough information about the chemical substances and mixtures introduced to the market. Some restrictions preventing major accidents or use for terrorist attack were already determined on the basis of knowledge of their hazardous properties. Similarly, the sufficient measures were taken to decrease the risk connected with the use of nuclear energy and sources of ionising radiation, although an extensional definition of CBRN substances is still missing.

Secondly, many problems still persist in the field of biological agents. Biological agents are a non-homogenous group of organisms which may represent an important source of health and environmental hazards. As the above mentioned group is very diverse, the mechanisms of the human health, environmental and livestock protection against their negative effects must be correspondingly diversified.

It is essential to determine the safe procedures for handling with these substances used in agriculture (genetically modified organisms in particular). Only the genetically modified crops approved by EU can be planted in the Czech Republic. The regulatory compliance must be strictly controlled to avoid the potential abuse of genetically modified organisms (GMO) or the use of any specialized institutes for preparation of the genetically modified organisms (GMO) for the purpose of the terrorist attack.

There is not any possibility to avoid completely the risks of natural origin. Nevertheless, it is possible to monitor, predict and resist them on the basis of selected indicators. Two important problems appeared in the field of natural hazards. First of all, the long-term lack of water. In opposite to the EU and Czech floods legislation, which are rather sufficient, the long-term lack of water and long-term drought are not properly treated. In addition, the extreme meteorological phenomena are the other important hazards for persons, health, environment, property and critical infrastructure. The effort to reduce their consequences prevails in the case of phenomena such as long-term extreme temperature (hot weather or freeze), extreme precipitation (rain, snow), extreme wind or wildfire. Due to the climate change it is possible to expect the increase in extreme meteorological phenomena before long. Consequently, it is necessary to take adaptation measures to reduce their impact.

### **3 PRIORITIES AND MAIN TASKS RESULTING FROM THE STRATEGY OF ENVIRONMENTAL SECURITY**

The strategy imposes several goals to be achieved within the next years. The priority of the strategy is to prepare a proposal of measures leading to a better preparedness and adaptation to long-term drought periods. Above all, a proposal of a system of indicators and subsequent measures to protect the ecosystems from the impact of drought should be created.

Another goal represents the creation of a type plan for the crisis situation “Long-term drought.” At this point, it is important to analyse the existing legislation and suggest appropriate adaptations in the field of the prevention of wildfire which increases during the period of drought. An essential task is to improve the warning and forecasting service as well as the weather and water monitoring systems and harmonize them with the similar global and EU systems vis-à-vis the scientific progress. Besides, it will be indispensable in this case to consider the creation of appropriate legislation on meteorological and hydrometeorological service.

In a short time, it is also necessary to provide an analysis of existing crisis situation type plans from the point of view of the impact on environmental security. It will be significant to improve them with the adaptation measures as well as measures reducing the air, water and soil pollution caused by the hazardous chemical substances and mixtures. Moreover, some measures against intentionally released invasive species, microorganisms, biological agents and pest outbreaks must probably be taken.

The other section of the strategy, which is dealing with the increase of the civil protection, imposes to formulate the goals leading to the protection of human health, property and environment against terrorist attack. It suggests to identify potential means of the attack and to propose the effective preventive measures.

In conclusion, the strategy emphasizes in the field of the prevention of major industrial accidents the need of creation of methods of hazard identification, and a method of both analyses of environmental risk resulting from the industrial fire and release of chemical substances.

## **4. CONCLUSION**

It is crucial to complete the system of particular legislative, technical, institutional and information measures to achieve the environmental security. The Strategy of Environmental Security of the Czech Republic supports the reception of preventive, mitigative and adaptation measures which are the most effective possible. The approved strategy together with the Strategy of the Civil Protection should represent a balanced unit ensuring the maximum protection for the persons and environment.

## **5. BIBLIOGRAPHY**

### **Strategic Documents**

[1] Strategy of Civil Protection of the Czech Republic, Resolution of the Government of the Czech Republic, No. 165/2008.

[2] Strategy of Environmental Security 2012-15 (-2020), Resolution State Security Council, No. 10/2012.

[3] Strategic Concept For the Defence and Security of The Members of the North Atlantic Treaty Organisation.

[4] Internal Security Strategy for the European Union: “Towards a European Security Model” (COM (2010) 673).

[5] Strategic Framework for Sustainable Development of the Czech Republic, Resolution of the Government of the Czech Republic, No. 37/2010.

[6] State Environmental Policy of the Czech Republic 2012-2020, Resolution of the Government of the Czech Republic, No. 6/2013.

[7] Security Strategy of the Czech Republic, Resolution of the Government of the Czech Republic, No. 665/2011.

### **Current state of the Czech legislation**

Act No. 240/2000 Coll., on Crisis Management, as amended.

Act No. 241/2000 Coll., on Integrated Rescue System, as amended.

Act No. 153/2000 Coll., on management of genetically modified organisms and products and on amendment to some related laws, as amended.

Act No. 59/2006 Coll., on prevention of major accidents caused by selected hazardous chemical substances and chemical preparations and on amending Act No. 425/1990 Coll. on the District Authorities, outlining of their competence and on some other related measures, as amended (Act on Prevention of Major Accidents), as amended.

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