

Assessing the risk of ecosystem services provision in the Czech Republic

Adam Pártl¹, David Vačkář¹, Blanka Loučková¹, Eliška Lorencová¹, Tomáš Hák², Svatava Janoušková², Zbyněk Stein³

1 CzechGlobe, Global Change Research Centre, Academy of Sciences of the Czech Republic, Bělidla 986/4a, 603 00 Brno, the Czech Republic

2 Environment Center, Charles University in Prague, José Martího 407/2, 162 00, Prague, the Czech Republic

3 CENIA, Czech Environmental Information Agency, Vršovická 1442/65, 100 10, Prague, the Czech Republic

INTRODUCTION

Global environmental change and its interplay with social, political and economic changes may pose a significant security risk to human society and ecosystems.

This poster presents a partial results of an ongoing project dealing with the integrated assessment of global change impacts on the environmental security in the Czech Republic.

OBJECTIVES

The four-year project *"Integrated assessment of global change impacts on environmental security of the Czech Republic"* (EnviSec) funded by Czech Ministry of the Interior aims at **developing integrated approaches to the assessment of global change impact on the environmental security in the Czech Republic.**

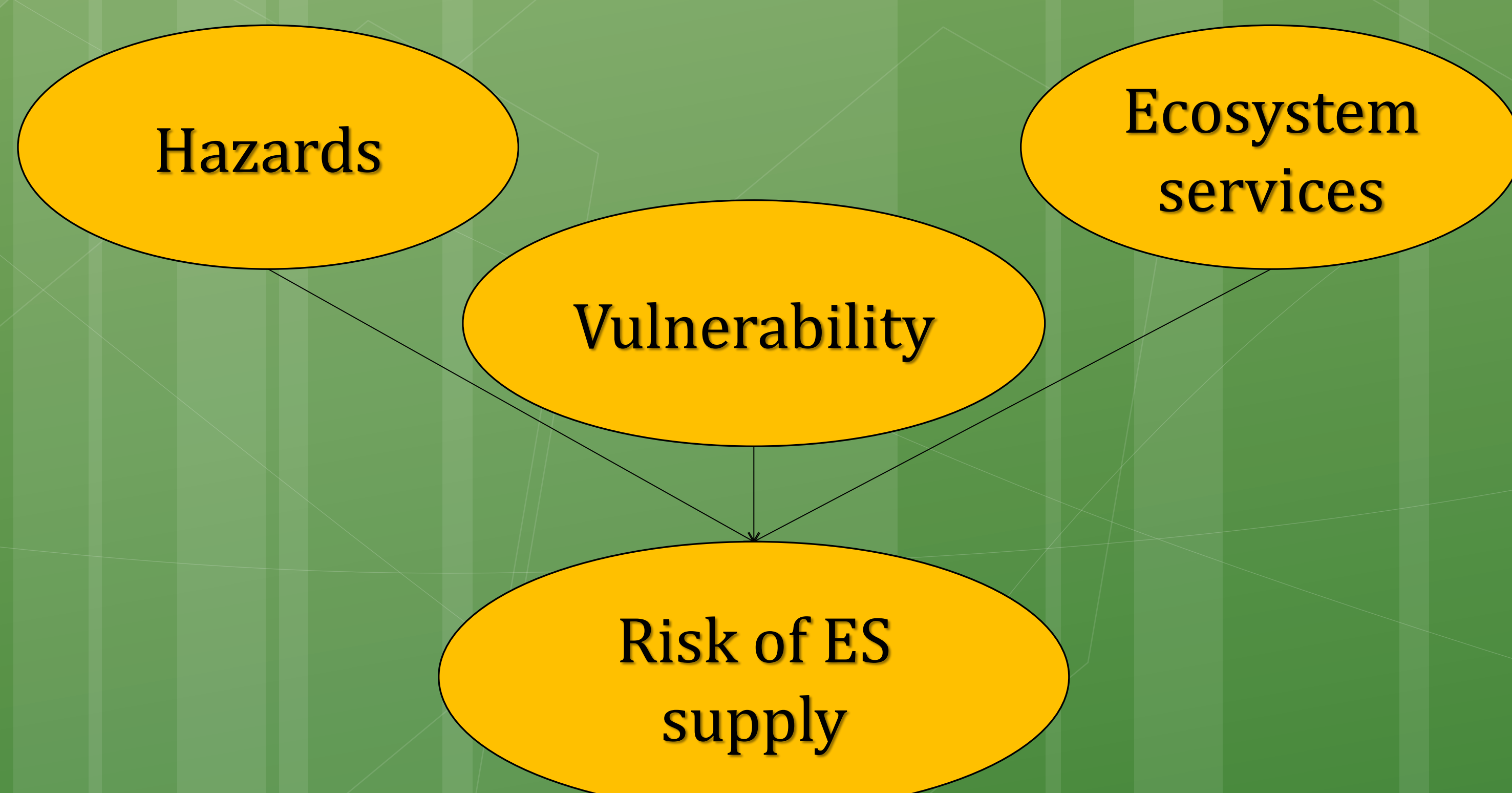
The objective of this project is to **develop integrated framework for environmental security assessment** in order to **evaluate the security risks for ecosystems and ecosystem services** that are particularly vulnerable to the changing trends in natural processes and human society.

The project identifies and classifies **significant environmental hazards** that pose threats to the environment in the Czech Republic, such as pollution/eutrophication (water quality, nitrogen deposition), natural hazards (floods, erosion, invasive species) and anthropogenic impacts (urbanization, contaminated sites).

The project is contributing to **the implementation of GMES** (Global Monitoring for Environment and Security) **and GEOSS** (Global Earth Observing System of Systems) **services** in the Czech Republic and to **integration of different data sources** on extreme events, natural disasters and global change risks into a coherent information system.

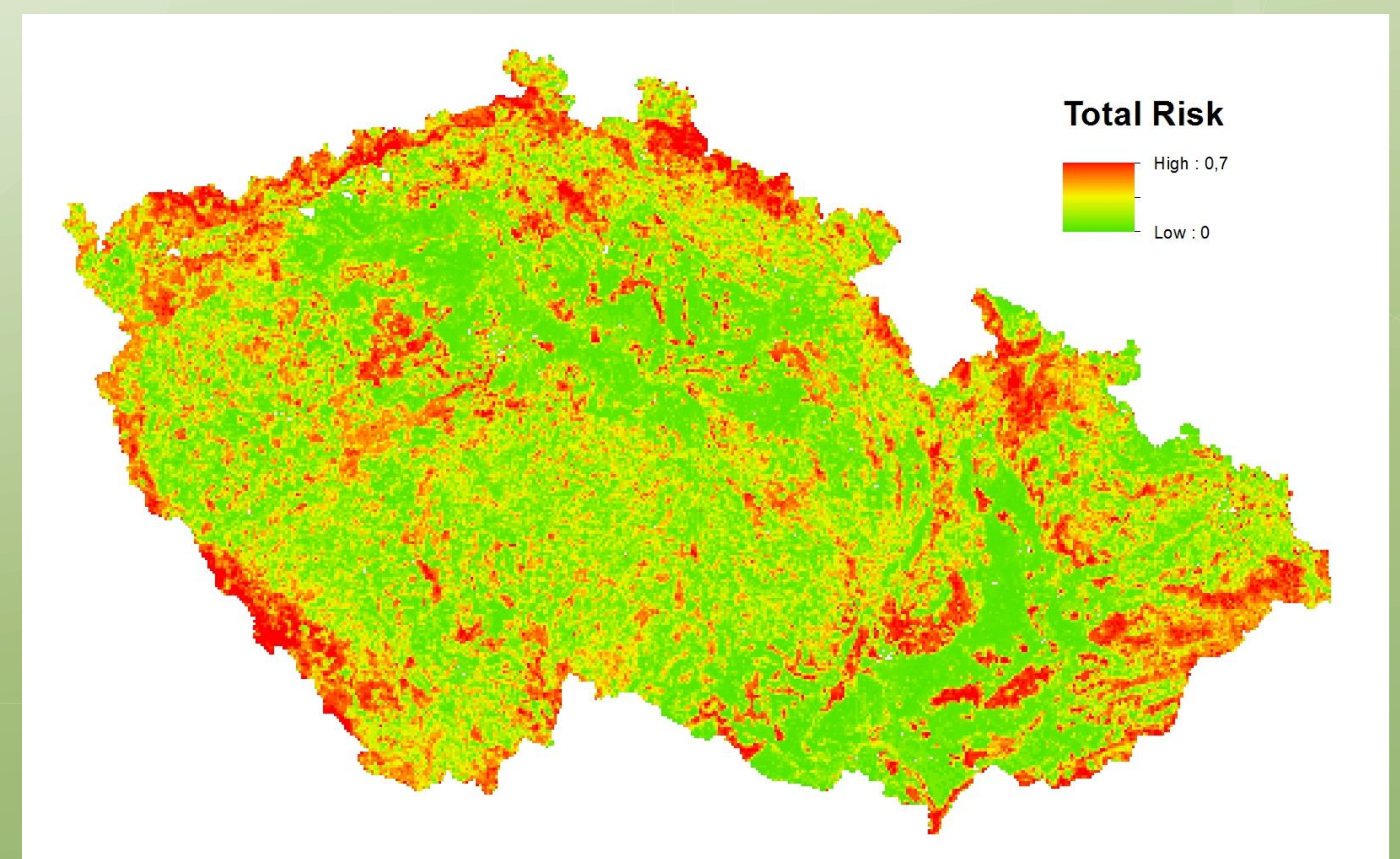
STRUCTURE OF THE ANALYSIS

Conceptual analysis of risk to ES provision tries to identify the places, where are the all three components (individual hazards, vulnerability and ecosystem services values) of risk the highest.



RESULTS

The overall risk for the provision of ecosystem services in the Czech Republic was calculated based on fuzzy gamma overlay of hazards, vulnerability (population density, fragmentation) and ES values which were adopted from Frelichova et al. (2014).



FOLLOW UP WORK

Integrated assessment of ecosystem services and security scenarios

- Development of software tools for environmental security assessment

Results dissemination

- Developing information tools for local authorities, government and bodies of emergency management network

OUTCOMES

- Software tool for detecting and evaluating of environmental security risks and ecosystem services threats
- Methodology for environmental security information system
- National map of security hotspots, areas with both high concentration of hazards and high vulnerability to identified risks.

CONTACTS

Adam Pártl
partl.a@czechglobe.cz

PROJECT WEBSITE: www.enviseccz.cz

REFERENCES

Frélichová, J., Vačkář, D., Pártl, A., Loučková, B., Harmáčková, Z. V., Lorencová, E., 2014. Integrated assessment of ecosystem services in the Czech Republic. *Ecosyst. Serv.* (In Press).