

## Two case studies on HIA and GIS in Slovak Republic and Slovenia

*Gabriel Gulis<sup>1</sup> & Branko Kontic<sup>2</sup>*

<sup>1</sup>University of Southern Denmark,  
Institute of Public Health,  
Niels Bohrvej 9-10, 6700 Esbjerg, Denmark  
Email [ggulis@health.sdu.dk](mailto:ggulis@health.sdu.dk)

<sup>2</sup>Jozef Stefan Institute  
Department of Environmental Sciences  
Jamova 39, 1000 Ljubljana, Slovenia  
Email [branko.kontic@ijs.si](mailto:branko.kontic@ijs.si)

The objective of this paper is to communicate experience on integration of GIS and health impact assessment (HIA) in the Slovak Republic and Slovenia. Two cases are presented and discussed in terms of differences when applying conventional HIA approach without GIS, and the one with using GIS:

- i) An investment dilemma between public drinking water supplies or sewage collection and treatment facility is analysed for a society with lack of resources to do the win-win solution (build up both facilities contemporary). The presentation aims to show practicability and supportive role of GIS in a decision-making process and as major input for HIA procedure. The case refers to Slovak Republic and is presented on the conceptual level.
- ii) Siting procedure for a radioactive waste repository (low and intermediate level) when applying "risk" and "dose" as safety indicators. Justification of site selection is discussed particularly in the view of health impact, while decision making is treated on a strategic level (energy technology options, national energy policy). This case refers to Slovenia; results are presented in a form of GIS maps showing different levels of suitability of Slovenian territory for radioactive waste disposal from the health point of view. The approach introduces certain innovations in the "standard" safety evaluation process.

In spite that HIA has not been widely practiced in Slovak Republic and Slovenia so far we list methodological improvements and benefits on conceptual and practical level after introducing GIS into HIA – we do this based on the experience on the two case studies. We particularly stress the purpose of HIA and its features as an effective optimisation tool for creating and justifying preventative public policy. Reference to Western Europe, Canada, Australia and New Zealand is also made.

Regarding needs for further developments/integration of HIA and GIS we discuss the following issues: wider use of HIA in the evaluation phase of decision-making, i.e., when alternatives are considered; selection of appropriate measures/indicators to investigate and show the impact of different alternatives; uncertainty in the evaluations. All of these are not sensitive only in terms of scientific knowledge, availability of data, and practicability of supporting decisions, but also regarding transparency, trustworthy, and societal acceptability.