

# Development of A Web-based Decision Support System (DSS) for the use of risk information in risk reduction

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Nowadays, web based decision support systems (DSS) play an essential role in disaster risk management because of their intellectual abilities which help the decision makers to improve their performances and make better decisions without needing to analyze sophisticated problems while reducing human resources and time. Since the decision making process is one of the main factors which highly influence the damages and losses of society, it is extremely important to make right decisions at right time by combining with advanced web technology of Geographic Information System (GIS), Remote Sensing (RS) and Decision Support System (DSS).

This paper presents the development of an internet-based decision support system (DSS) for the use of risk information in risk reduction while highlighting the importance of a decision support system in the area of risk reduction. Beyond the conventional DSSs, it considers the complexity of changing environment from different perspectives and sectors with diverse stakeholders' involvement in the development process leading to an integrated risk management approach. It intends to contribute a part towards the natural hazards and management society by developing an open-source web platform where the users can define their own risk management strategies and perform cost benefit analysis with the support of tools and resources provided. There are different access rights to the system depending on the user profiles and their responsibilities, and certain users can update and add knowledge to the knowledge base of DSS through a validation procedure. The developed system will be applied and tested in four case study areas in Europe: French Alps, North Eastern Italy, Romania and Poland. However, the generic framework of the system can be applied in any other areas. This research has been undertaken as a part of the CHANGES project funded by the European Commission's 7<sup>th</sup> framework program.