

VULNERABLE PUBLIC INFRASTRUCTURE IN A CONTEXT OF FLOOD MODELING

FP7, SAFER Project

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ABSTRACT

Each year thousands of people become victims of natural and man-made disasters – fires, earthquakes, volcanic eruptions, landslides, humanitarian crises. Climate change leads to increased number of such hazards. In the frame of GMES ⁽¹⁾ initiative, SAFER ⁽²⁾ project reinforces European capacity to crisis response, and performs preoperational versions of the Emergency Response Service.

ReSAC, along with its European partners, participates with two work packages: “Plain Flood Risk Management” and “Assets Mapping”. ReSAC is working on two test sites, situated along Iskar River and Roussenski Lom River in Bulgaria. Each test site will be provided with the following thematic products: past flood event maps, flood hazard maps, and flood risk maps (which include also damage assessment). The final results shall be made publicly available via the Web portal, which can be accessed on the website www.floodrisk.eu.

In the context of assets mapping, the matter of critical infrastructure is very important. ReSAC is actively engaged in multitude of studies related to critical infrastructure, flood risk management and damage assessment. Critical infrastructure includes those physical resources, services, information technologies, and infrastructure assets whose damage or destruction would have serious effects on health, safety, security or economic prosperity of the citizens or the effective functioning of government (Green paper on a European programme for critical Infrastructure).

To support researches in the field of flood risk and damage assessment, ReSAC designs geodatabase about vulnerable public infrastructure for Sofia city test site. Input information includes satellite imageries GeoEye, and basic GIS datasets, created in the scope of the project. Analysis was performed using ArcGIS 9x software. In addition, there were classified ten types of objects from critical infrastructure - water treatment plants, sewage treatment plants, military sites, fire safety and protection of population, regional police offices, thermal power and hydroelectricity stations, colleges and universities, schools, homes for the elderly, hospitals.

⁽¹⁾ GMES: *Global Monitoring for Environment and Security*

⁽²⁾ SAFER: *Services and Applications for Emergency Response*