Spatial Data Acquisition from Maps for Disaster Management Analysis – Balkan Floods 2014

Franka Grubišić
Faculty of Geodesy University of Zagreb
fgrubisic@geof.hr

Abstract

Floods are acknowledged to be among the most manageable of disasters (Keys et al 1996). Croatia, Serbia and Bosnia and Herzegovina (BiH) have been affected this Spring by cyclone Tamara experiencing extremely heavy rain – including three months' worth in three days followed by other bad weather conditions (ACT alliance 16/05/2014).

Heavy rainfall began on 13th of May. It was the worst rainfall the Balkan countries have seen in 120 years and it resulted in devastating floods and more than 3000 landslides. More than 1 500 000 people were affected in some way and the total cost of recovery varies between one and two billion euros.

In this paper, cartographic data from various resources was collected in order to determine, compare and analyze spatial data to show its relevance for risk management. Even though not yet operational, Copernicus' Sentinel I has provided radar data for mapping the floods as well as Modis Aqua Satellite and EO-1. Open Street Map was also included in mapping the flooded areas via their Tasking Manager for the Humanitarian OSM Team with total 12 tasks.

On the example of collected maps related to Balkan floods 2014, the relevance of acquiring spatial data for disaster management is be shown. Furthermore, due to all of the new data, in this paper are presented some of the future plans with 4P method - predicting, planning, preparing and protecting by using GIS for effective flood management but also the most biggest issue of the Balkan region in making a flood emergency system.

Keywords: spatial knowledge, acquisition, maps, natural disaster, disaster management, floods, Copernicus, NASA, Open Street Map