Elaboration of Products Derived from Geospatial Data for Flooding Risk Analysis in Romania

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In the last years, important high-floods occurred along most rivers in Romania, many recording historical discharges, engulfing wide areas and triggering life loss and heavy damage. The Romanian Flood Risk Management Strategy aims at mitigating the impact of flood events on the population and property, through adequate planning and policy in accordance with the standards and expectations of the human community and protecting the environment. The modern management of spatial data related to river flood risk largely relies on the functional facilities supplied by the Geographic Information System, combined with Earth Observation data-derived information, Digital Elevation Models and hydrological modelling. The paper assumes this multidisciplinary approach, in view to establish a methodology, which should further allow the elaboration of products useful for flooding risk analysis, such as: more accurate updated maps of land cover/land use, comprehensive thematic maps at various spatial scales with the extent of the flooded areas and the affected zones, maps of the hazard prone areas, flooding risk maps for several probabilities of the maximum discharge occurrence etc. Optical (TERRA/MODIS/ASTER, LANDSAT–ETM, IRS–PAN/LISS, SPOT-PAN/XS) and radar satellite data (RADARSAT, TERRASAR X) have been used to perform the analysis for inventory purposes and to extract different kinds of flood related thematic information. These kinds of products started to contribute to preventive consideration of flooding in land development and special planning in the flood-prone areas, and for optimizing the distribution of flood-related geo-information to end-users. The results obtained for different basins of Romania are presented and discussed.