



## Flood risk assessment and coping capacity with floods in central Vietnam

Thanh Tu Vu and Roberto Ranzi

Università degli Studi di Brescia, DICATAM-Dipartimento di Ingegneria Civile, Architettura, Territorio, Ambiente e di Matematica, Brescia, Italy (tu.vu@ing.unibs.it)

Some elements of the integrated risk assessment framework developed within the European KULTURISK project ([www.kulturisk.eu](http://www.kulturisk.eu)), named KIRAF (Kulturisk Integrated Risk Assessment Framework-KIRAF is applied for flood risk assessment in a flood prone area of Quang Ngai province, central Vietnam. Since the socio-economic condition is developing and living standards are increasing, to help decision-makers in examining the possible risks and damages associated with uncertain future flood hazards and identifying the most appropriate structural and non-structural risk prevention measures, it is necessary to apply appropriate risk assessment methodologies.

Starting from flood hazard maps estimated for different return periods in terms of depth, duration or velocity using a 2D hydrodynamic model, for vulnerability assessment and exposure estimation, direct tangible and intangible, indirect tangible and intangible costs are estimated, based on over 380 responses of local people to 39 questions in a questionnaire directly related to flood risk and preparedness. In this way cost functions for some, at least, of these four damage classes can be fitted to local conditions. Field surveys and technical reports were used for a better understanding of the questionnaire responses. In this way social and behavioral aspects influencing adaptive capacity, coping capacity and susceptibility to the physical hazard can be made more explicit for the successive Socio-Economic Regional Risk Assessment (SERRA) methodology proposed in KULTURISK.