

Report on the 3rd International Conference on Flood Recovery, Innovation and Response (FRIAR) 2012

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The terms *flood* or *flooding* are often used in different ways. According to the International Commission on Irrigation and Drainage (ICID), *flooding* is defined as *the overflowing or failing of the normal confines of a river, stream, lake, canal, sea or accumulation of water as a result of heavy precipitation where drains are lacking or their discharge capacity is exceeded*. The occurrence of floods is the most frequent amongst all natural disasters. Although flooding is a serious hazard in humid regions, it can also be devastating in semiarid areas, where high rates of runoff following storms produce widespread flood damage down valley. These hazards involve tragic loss of life, damage to buildings and natural environments, and massive short-term disruption to the lives of the affected population. One-third of the annual natural disasters and economic losses, and more than half of the respective victims are flood-related.

Flood risk is seen to be increasing worldwide due to the effects of climate change, rapid urbanization, and land subsidence. In practical terms, the chance of flooding can never be entirely eliminated. However, the consequences of these events can be mitigated by appropriate behavior and actions. New methods and measures are needed to cope with these hazards and to achieve a harmonious balance between economy and ecology. To be effective, these methods and measures must be embodied in the broader context of integrated catchment planning, and floods must be regarded as one of the many issues involved in the appropriate management of a catchment area.

An international conference on these issues took place in Dubrovnik, Croatia, from 30th May to 1st June 2012. The Meeting was co-chaired by Daniele De Wrachien, former Chairman of the European Society of Agricultural Engineers (EurAgEng) and member of the Executive Board of the CIGR (International Commission of Agricultural Engineering), Carlos Brebbia, Director of the Wessex Institute of Technology (WIT), UK, David Proverbs of the University of the West of England, Bristol, UK, and Stefano Mambretti of the Politecnico di Milano, Italy, and co-sponsored by the EurAgEng, the CIGR and the International Commission on Irrigation and Drainage (ICID).

The first of what has become a successful series of conferences was held in the New Forest, UK (2008) with the next meeting in Milan, Italy (2010).

Participants from 16 countries attended the 2012 Conference that consisted of an Opening Session and five Topic Sessions on flood risk management, flood risk vulnerability, emergency preparedness and response, flood forecasting and flood case studies, and a Special Session on responses to reduce vulnerability to flooding, organized by Jessica Lamond of the University of the West of England. Prof. Carlos Brebbia opened the Conference underlining the importance of the

meeting as part of a WIT framework that aims to disseminate knowledge at an international level. Following Prof. Brebbia's remarks, Daniele De Wrachien welcomed the participants on behalf of the EurAgEng, the CIGR, the ICID and the State University of Milan, that helped organize the Conference. Stefano Mambretti spoke on behalf of the Politecnico di Milano, and David Proverbs closed the Opening Session presenting a new approach for participatory assessment of the vulnerability of commercial property values to flood.

The Topic Sessions were opened by Prof. Daniele De Wrachien who highlighted the results of a collaborative project between the University and Politecnico di Milano and the University of Granada, Spain, on using ontology as a new approach to flood management. He stressed the role that people from different backgrounds and profiles can play to solve the complex and inter-disciplinary problems involved in the flood management process.

Among the lectures held, it is worth mentioning:

- *Flood emergency management: the value of potential and actual estimation* by Daniela Molinari of the Politecnico di Milano;
- *A multivariate model for flood forecasting of lake levels* by Magday Mohssen of the Department of Environmental Management of Lincoln University, New Zealand;
- *Impacts and preventative measures against flooding and coastal erosion in Thailand* by Siwatt Pongpiachan of the National Institute of Development Administration, Thailand;
- *Comparison of a data-driven model and a physical model for flood forecasting* by J. Choi of the Department of Civil & Transportation Engineering, Ajou University, South Korea;
- *On-line early warning system for evacuating of socially vulnerable population during flooding* delivered by K. Moreiri of the Department of Geodesy and Geomatics Engineering, University of New Brunswick, Canada.

At the end of the Conference, Prof. Hashimoto showed a video of the Great East Japanese Earthquake that caused unprecedented damage.

The Conference presented many opportunities for delegates to meet each other and for informal discussion, and provided a forum for engineers, scientists and managers from across the globe to discuss the latest scientific advances in the field of technical, social and economic issues related to the broad theme of flood recovery, innovation and exposure.

The success of the Meeting will ensure that the Conference will be reconvened in 2014 at a location and on a date to be announced shortly.

The Proceedings of FRIAR III, 284 pp (Print ISBN: 978-1-84564-588-5; eISBN: 978-1-84564-589-2) are available from WIT Press.

For more information visit the web site: www.wessex.ac.uk/12-conferences/friar-2012.html