**Managing Floods and Droughts: Best practices and Engineering Contribution**

**Acronyms and abbreviations**

**Acknowledgements**

**Executive summary**

1. **Introduction**

*Framework*

*Objectives*

*Outline and reading guidance*

1. **General framework**

*Floods and droughts in the World*

*Social, economic and environmental impacts*

*Effects of climate change*

1. **Evolution of water policies to manage extreme hydrological events.**

*Traditional approaches*

*Disaster Risk reduction*

*Risk based approaches*

1. **Knowledge, technology and innovation**

*Hydrologic and hydraulic models*

*Flood hazard and flood risk maps*

*Actions: technology and innovation*

*Advances in warning systems*

1. **Experiences and Best practices:**

**5.1. Flood and Drought Risk Management Plans.**

*Risk management approach*

*Flood Risk Management Plans*

*Drought Management Plans*

* 1. **Measures to cope flood risks.**

*Structural measures: dams, dykes, channeling, drainage works,…*

*Green infrastructure*

*Natural Water Retention Measures (NWRM)*

*Floodplain management and restoration*

*Urban and territorial planning*

*Flood prone building codes*

*Flood warning systems*

*Insurances*

* 1. **Measures to cope drought risks.**

*Integrated Water Resources Management (IWRM)*

*Water resources allocation*

*Water saving*

*Drought warning systems*

*Insurances*

1. **Lessons learnt**

*Importance of Planning*

*Adaptative management*

*Technology to improvement results*

*Measures combination*

*…*

1. **Challenges for engineers**

*The current role*

*Indicators of current activity*

*Innovation and technology*

*Social responsibility*

*Emerging and future areas*

*New roles and challenges*

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