



Flood Risk Mapping in Europe

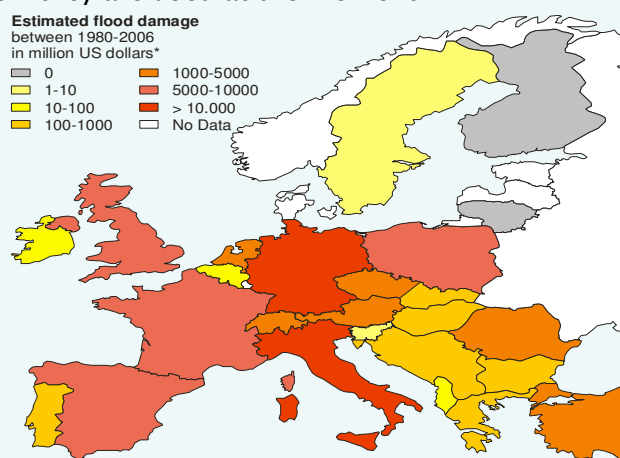
A comparative analysis of methods availability and use

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INTRODUCTION

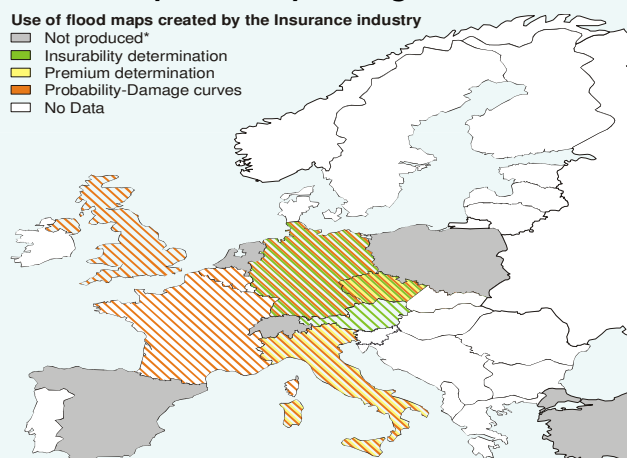
River flooding is one of the most costly natural disaster. Managing such floods, both with respect to the hazard as well as the consequences, is becoming increasingly complex because of ongoing developments in floodplain areas and future uncertainties associated with climate change. The basis of many flood risk management strategy is the mapping of the flood hazard/risk, which member states need to conduct under the recent EU directive (2006/0005(COD)). Already many governments and other institutions have created flood maps for various purposes. Here we present an overview of what types of flood risk maps are currently available in Europe and how they are used at the moment.



* Data acquired from the OFDA/CRED International Disaster Database (www.em-dat.net)

AVAILABILITY AND USE - INSURANCE INDUSTRY

Besides national governments, the insurance industry is a major producer of flood maps. Flood zones can be used to **determine insurability**, or coupled with data on insured objects to **determine premiums**. Additionally it is used by reinsurers to guarantee financial solvency of the primary insurer based on **probability-damage curves**.



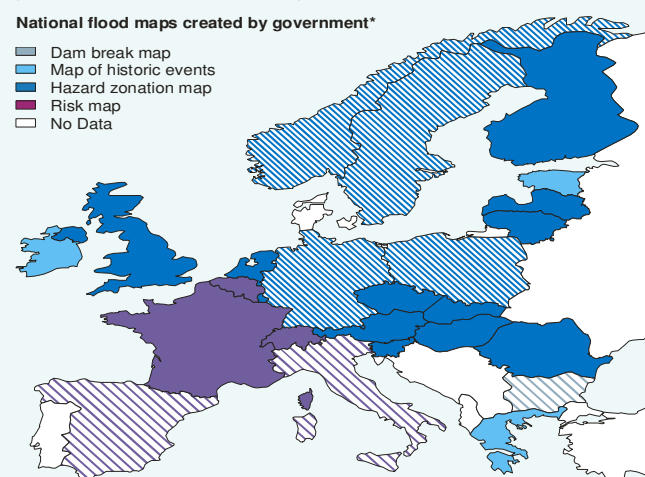
* Information acquired from report by the Comité Européen des Assurances (2005)

*European Property Market shared experience: flood risk mapping and zoning

AVAILABILITY AND USE - GOVERNMENT

Most countries have some flood maps available, though some more comprehensive than others (fig. 2). Most countries possess hazard zonation maps for all or most of their territory. There are many differences in method and zone characteristics, but most countries use hydraulic models to create zones for x-year (usually 100) events, though in eastern Europe historic events are widely used as basis. In most countries flood maps are created by regional authorities, sometimes resulting in significant differences within a country as well.

The most frequent use of flood maps is in **spatial and emergency planning**, though the legislative framework concerning spatial planning varies greatly, ranging from purely informative to prohibiting development in the highest risk zone. Another common use of flood maps is to increase political and public **awareness**, often accompanied with the online publication of the maps.



* Filling indicates the coverage of the respective maps. Fully colored means coverage is national and hatches indicate that it differs per region or exists for selected waterways

CONCLUDING REMARKS

- Quality of maps is sometimes limited by the quality and availability of data.
- In countries that have experienced high damages from floods in the recent past the (re-)insurance is very active with regard to hazard/risk mapping.
- National governments do not often use data on potential damage.
- Maps usually serve an advisory role in spatial planning and the implementation can differ between regions (e.g. Spain, Italy). The implementation of national legislation is sometimes hindered at the local level because of short-term economical developments and gains (France, Poland).

SELECTED LITERATURE

- ARMONIA, 2005. Report on the European scenario of technological and scientific standards reached in spatial planning versus natural risk management. ARMONIA Project.
- Jelinek, R. and Wood, M., 2006. Flood Mapping and Flood Data in New Member States and Candidate Countries., Draft Report. EU Joint Research Centre, IPSC, NEDIES.