

Estimating flood flows in ungauged Greek basins under hydroclimatic variability (Deucalion project)

Development of physically-established conceptual-probabilistic framework and computational tools

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Motivation

Directive 2007/60/EC – assessment & management of flood risks:

Member States must assess if water courses and coastlines are at risk from flooding, map the flood extent and assets and humans at risk in these areas and take adequate and coordinated measures to reduce this risk (complements WFD 2000/60/EC).

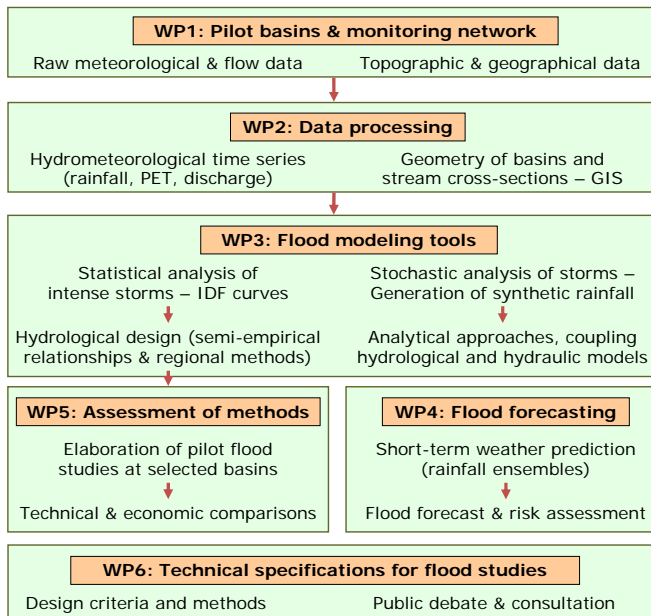
Background: Europe suffered over 100 major floods between 1998 and 2004, including the catastrophic Danube and Elbe floods (summer 2002). Severe floods in 2005 further reinforced the need for concerted action. Since 1998 floods in Europe have caused ca. 700 deaths, the displacement of about half a million people and at least €25 billion in insured economic losses.

2003-2012 IAHS Decade of the Prediction in Ungauged Basins

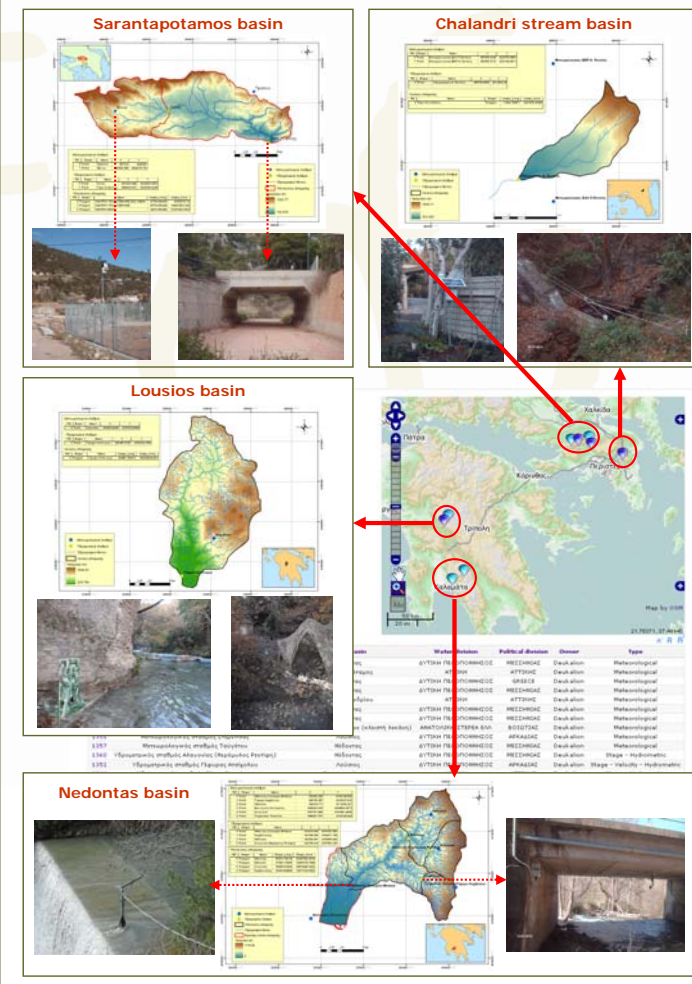
Greek conditions: Highly fragmented geomorphology shaped major river basins of few 1000-km² size (largest: Peneios river basin, Thessaly ~ 10000 km²); a typical stream basin area is 50–250 km² and ungauged. In Central & East Greece, intense storms generate critical floods in often ephemeral streams, with fast-rising hydrographs (frequently, steep terrain).

Experience: Unreliable flood protection designs from naive use of empirical regional approaches (e.g. synthetic hydrographs)

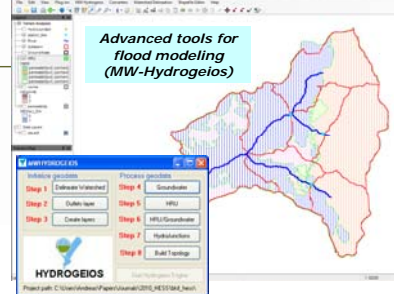
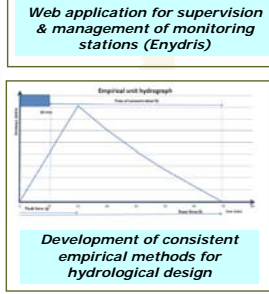
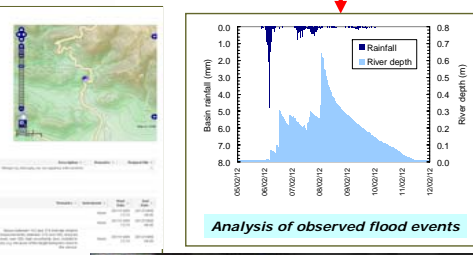
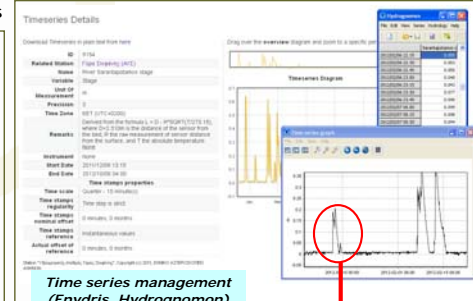
Project outline & work packages



Monitoring network & web database



Research activities



Project info

Duration: March 2011 – March 2014

Budget: €576 000 (public funding €460 800)

Commissioner: General Secretariat of Research and Technology

Partnerships: (1) ETME Peppas & Collaborators S.A.; (2) Grafeo Mahera S.A., (3) Department of Water Resources & Environmental Engineering, National Technical University of Athens; (4) Institute of Environmental Research & Sustainable Development, National Observatory of Athens

Web site: <http://deucalionproject.gr/>