22nd International Conference of EURO-INBO

Thematic Session 2 – Adapting Climate Clange :
How to better manage and prevent floods

Floods of October 29 in Valencia: lessons learned

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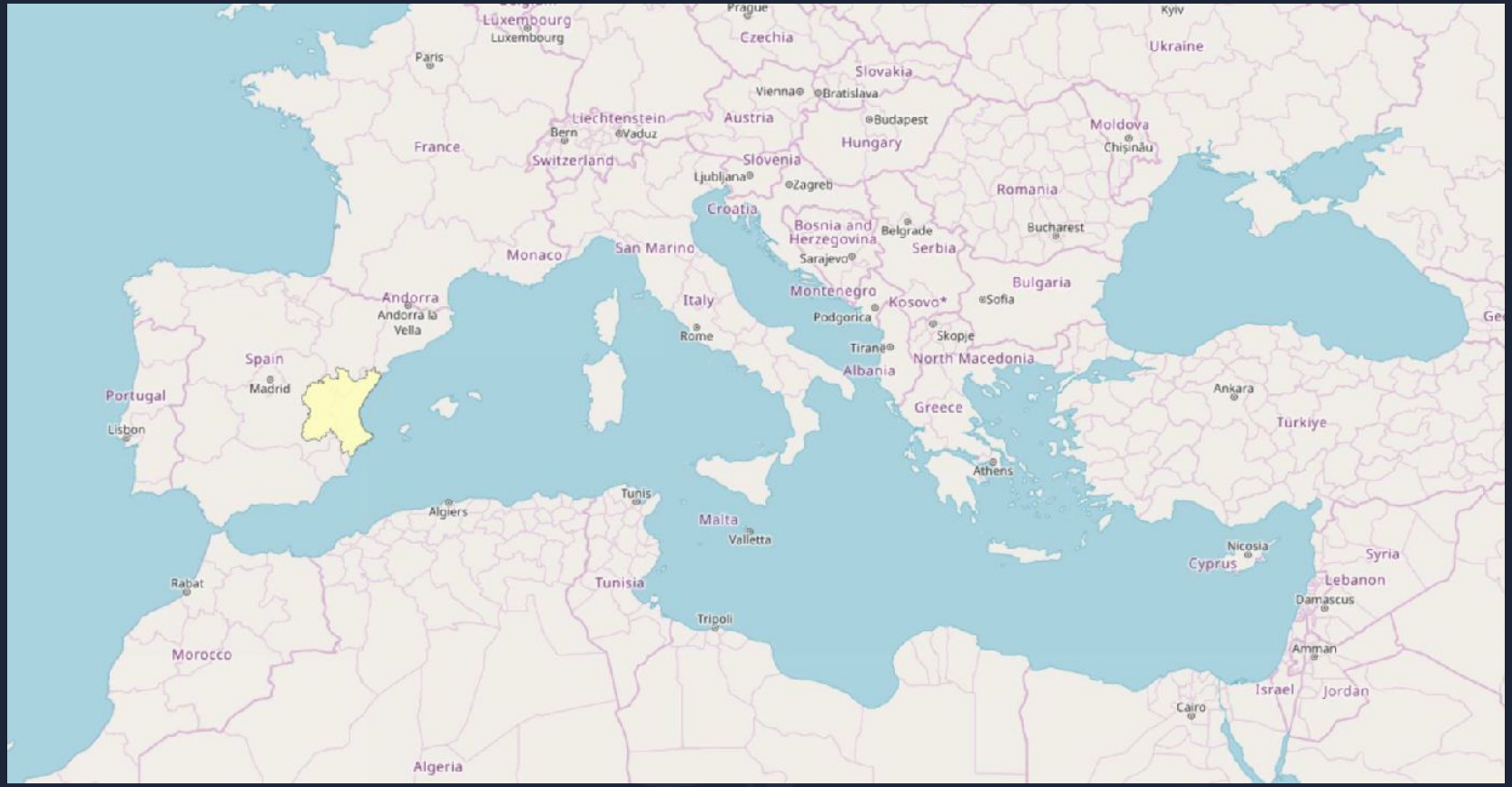

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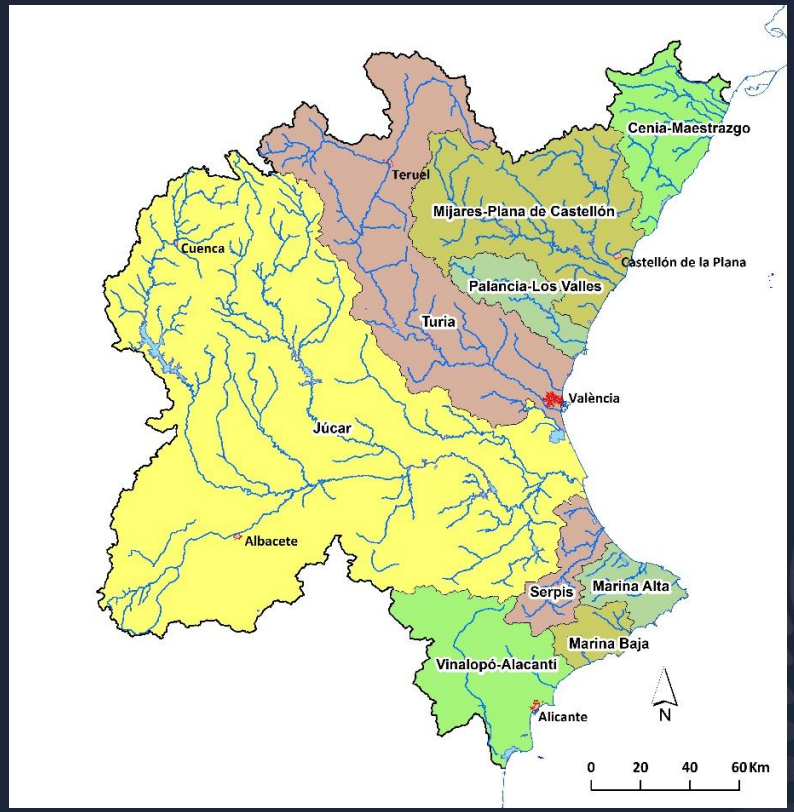
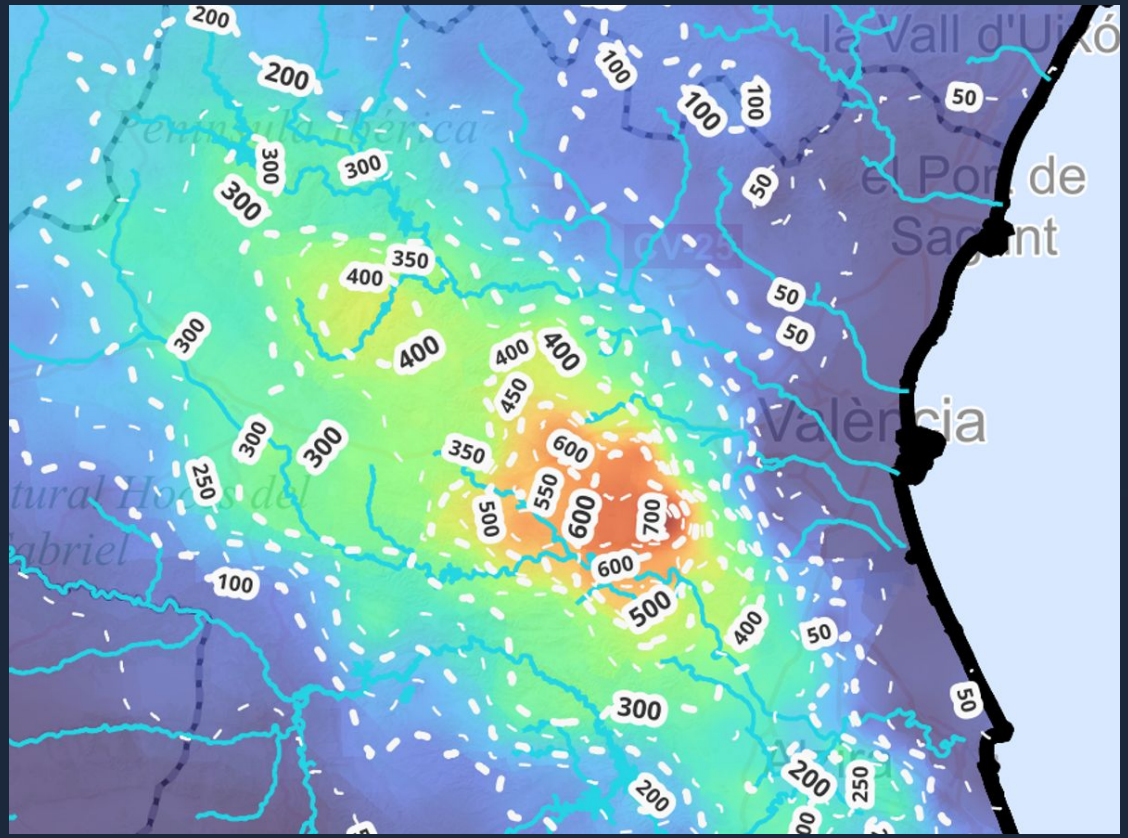


Public water management functions, hydrological planning, construction, and operation of hydraulic works.

42,756 km² of surface area
> 5,200,000 inhabitants
800 municipalities
> 46,000 km of waterways
9 exploitation systems
22 dams
> 3,000 hm³ of storage capacity
6 main canals
5 desalination plants

The DANA of October 29 in Valencia



3 affected basins

> 700 hm3 in 12 hours

> 600 l/m2 in 6 hours

> 700 hm3 in 12 hours in three affected basins

Tr 2000- 10,000 years

Sediment drag

Flash flood in the Poyo basin

228 dead

> 13.000 M€ in losses

Climate change and floods

Increased adverse effects of flooding. Mainly due to:

1. Increase in extreme weather events. More intense rainfall.

2. Change in land use. Alteration of the hydrological cycle and runoff coefficient.

3. Floodplain occupation. Population and assets most at risk

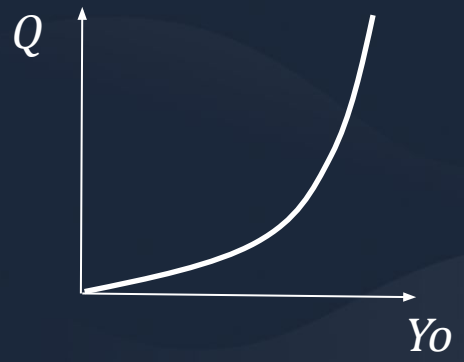
Climate change and floods

Intensification of extreme events the problem of extreme rainfall

$$Q = CAI$$

$$Q = AI^n$$

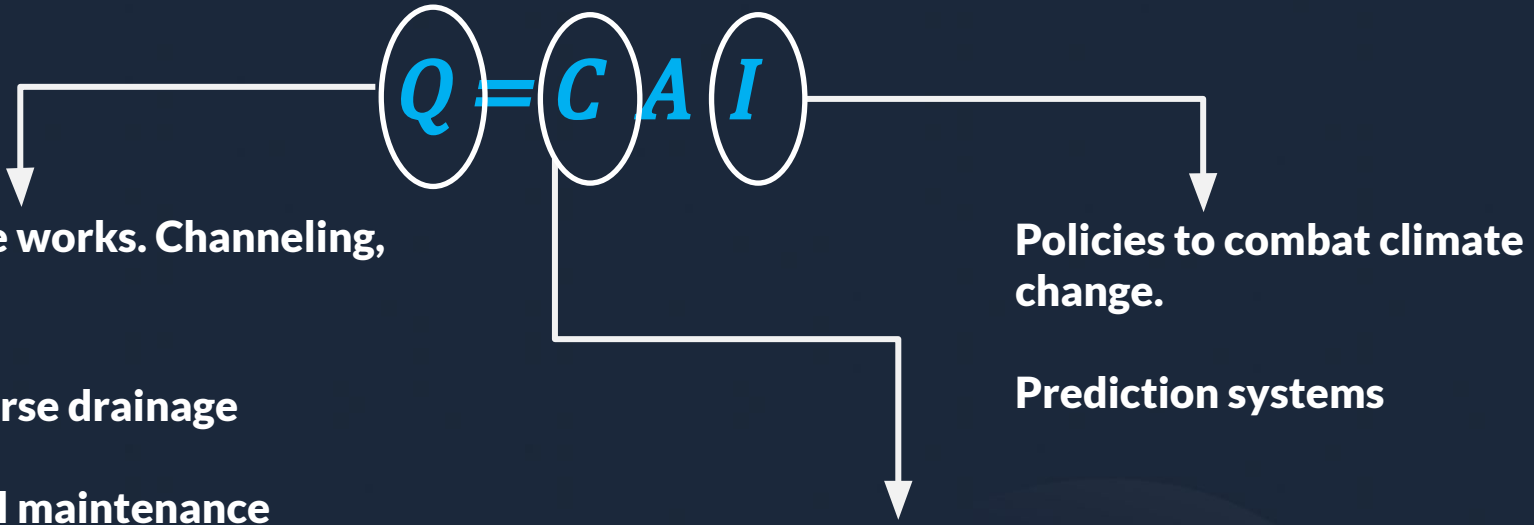
A flash flood hydrograph copy the intensity and rate of rainfall, with a variable lag depending on the characteristics of the basin, which determines the safety margin.



Tools to better manage floods

1. Multidisciplinary teams
2. Data collection systems
3. Information management
4. Communication systems

Tools for better flood management: FRMP



Final thoughts

1. If people associate risk only with a probability of occurrence, they forget that there are things they can do for themselves.

Risk = f (potential damage, probability of occurrence)

2. The greatest damage occurs with Residual Risk .

“There are two types of levees, those that have been overtopped by floodwaters, and those that were going to be.” William Hammond Hall 1880

3. The problem of the return period : it makes it difficult to perceive risk.

Final thoughts

4. The most important measure: Risk awareness or risk perception

“Risks and their perception are not two things but one and the same thing.”

Ulrich Beck

Thank you

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