HISTORICAL UPSCALING OF THE SOCIO-HYDROLOGICAL CYCLE: THREE CASES FROM THE MEDITERRANEAN SPAIN

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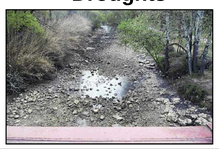
INTRODUCTION

How can we **explore the co-evolution of coupled human-water systems** to be able to make **future socio-hydrological predictions**? (Sivapalan et al, 2012):

- ❑ Learning from the past socio-hydrological changes (temporal analysis)
- ❑ Comparing the socio-hydrological patterns in different basins (spatial analysis)
- ❑ Studying in detail several basins (process socio-hydrology)

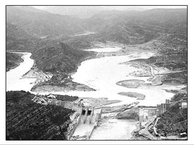
Hydro-social processes likely to be affected by climate change in the Mediterranean Europe, causing potential conflicts due to:

Droughts



Source: www.levante-emv.com

Floods



Source: www.misionaprendizaje.com

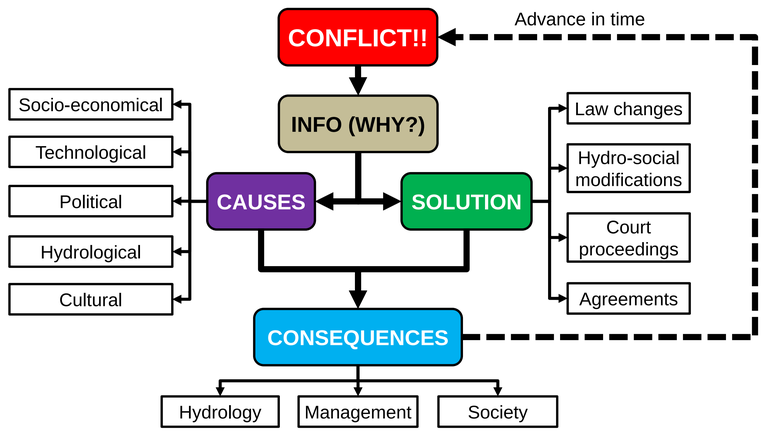
GOAL & APPROACH

GOAL: identify the past socio-hydrological processes co-evolution, conflicts and their resolution in the Mediterranean Spain.

APPROACH: comparative analysis of three river basins (spatiotemporal analysis)

METHOD & MATERIALS

METHOD: locate historical conflicts and analyse them in detail



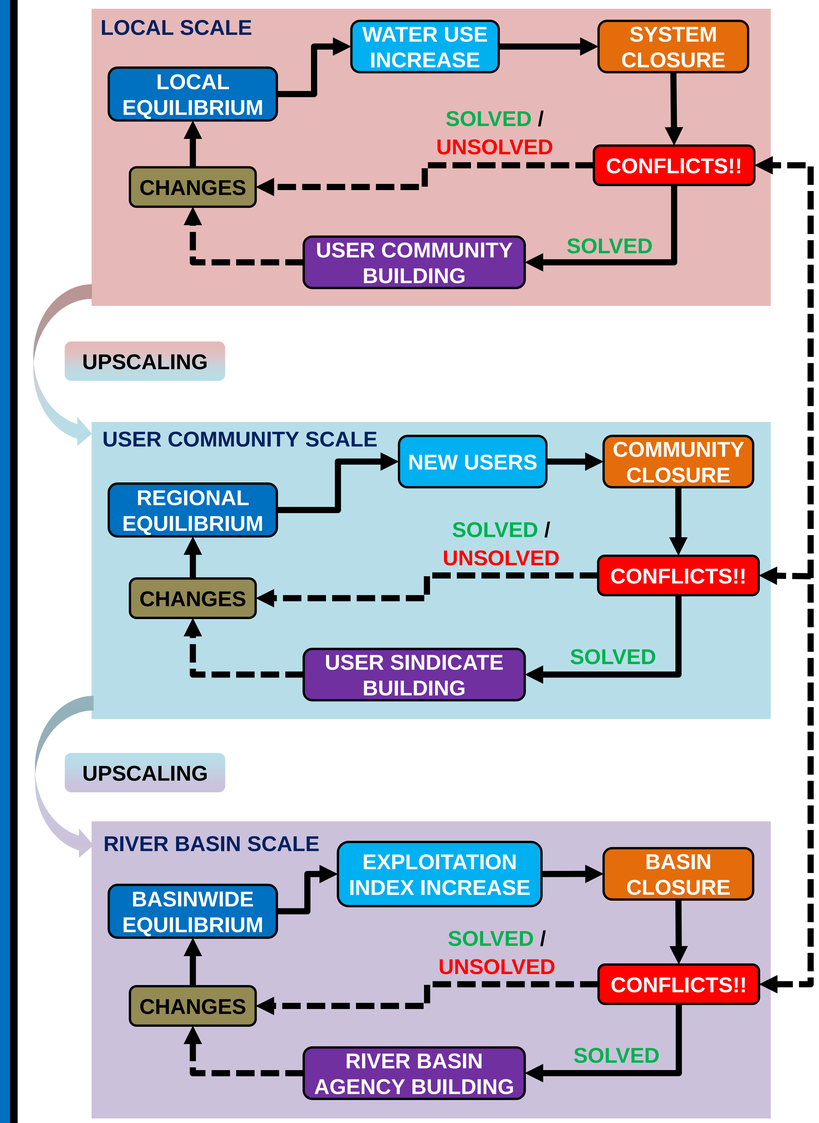
MATERIALS: some of them available since the Middle Age

- ❑ Royal archives
- ❑ Courts' archives
- ❑ Municipal archives
- ❑ Farmers' documents
- ❑ Social knowledge / traditions
- ❑ Field works

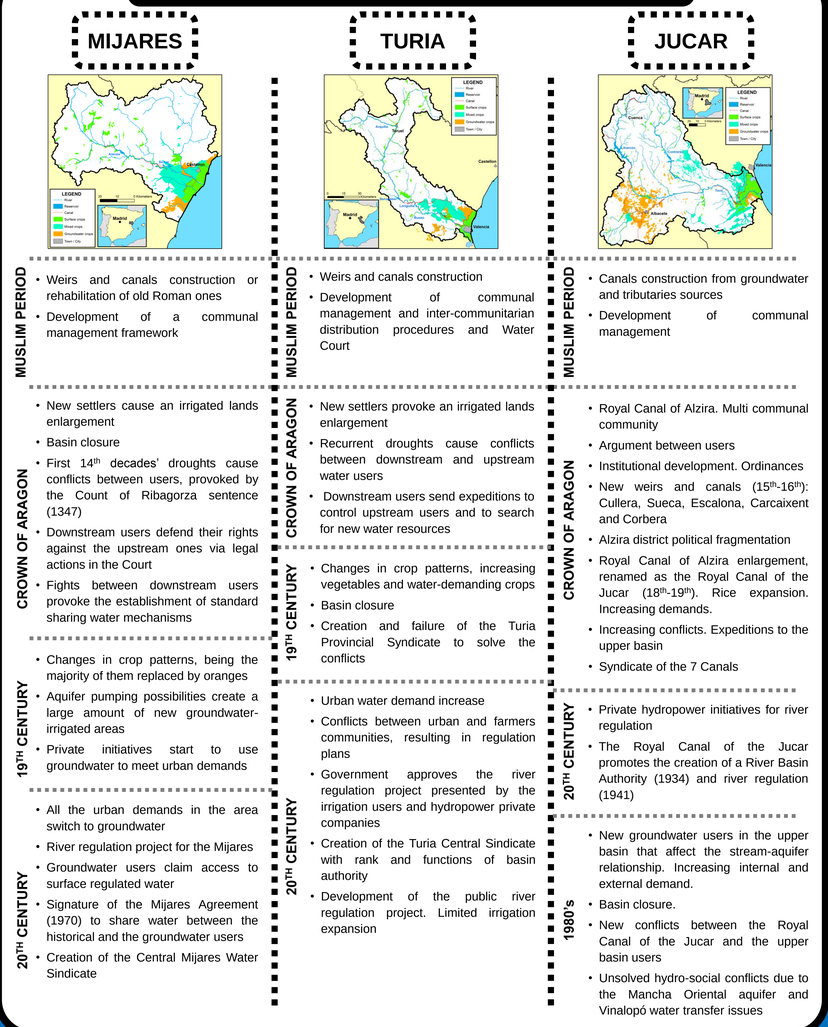
CONFLICT UPSCALING PATTERNS

System closure – system reopening cycle:

- When the system was open, neither conflicts nor significant institutional evolution noticed
- When the system was closed, conflicts boost evolution, establishing management rules, building institutions and developing collaborative frameworks
- Historical institutional upscaling (bottom-up) linked to increasing pressure on water resources, and parallel to social awareness of the hydrological cycle complexity (from the local system to the basin concept).



COMPARATIVE HISTORICAL ANALYSIS



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