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Lez karst river

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OVERVIEW OF DEMO AIM

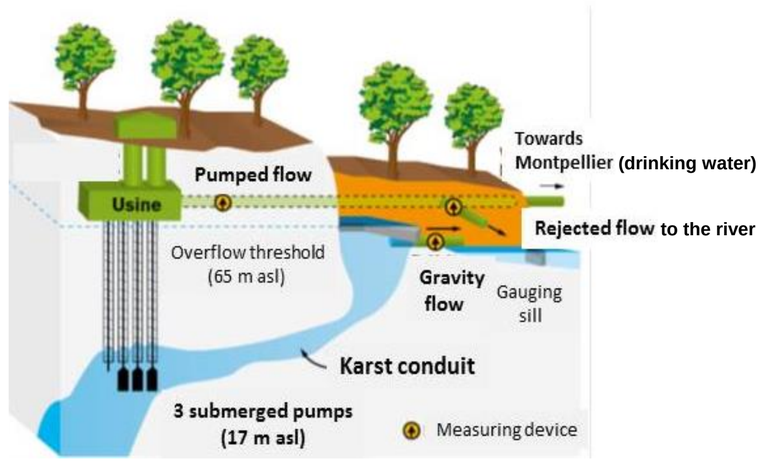
Flood is the first risk in France where it represents almost 60 % of the total natural disasters insured damages.

Drought risk for farming is supposed to tremendously increase in the future causing economic and financial problems to an industry that is already suffering.

Extreme drought are supposed not only to affect the yearly crops with **important yield and revenue losses** but also to affect perennial crops and farm financial health for several years, potentially jeopardizing the **survival of farms and implying resilience mechanisms**.

Nature based Solutions

1. The idea is to explore whether **karst water resources management** is a potential NBS to reduce both flood and agricultural drought risks: while pumping in karst aquifers during dry periods, water is available for several usages (irrigation, drinking water supply, river minimum discharge); once the aquifer is depleted, it can store more water during floods
2. **Co-benefits** will result from surface water related ecosystems in better state (no hydrological drought)
3. **Natural Assurance Scheme : institution in charge of supplying drinking water**



Lez spring active management scheme

Key Stakeholders

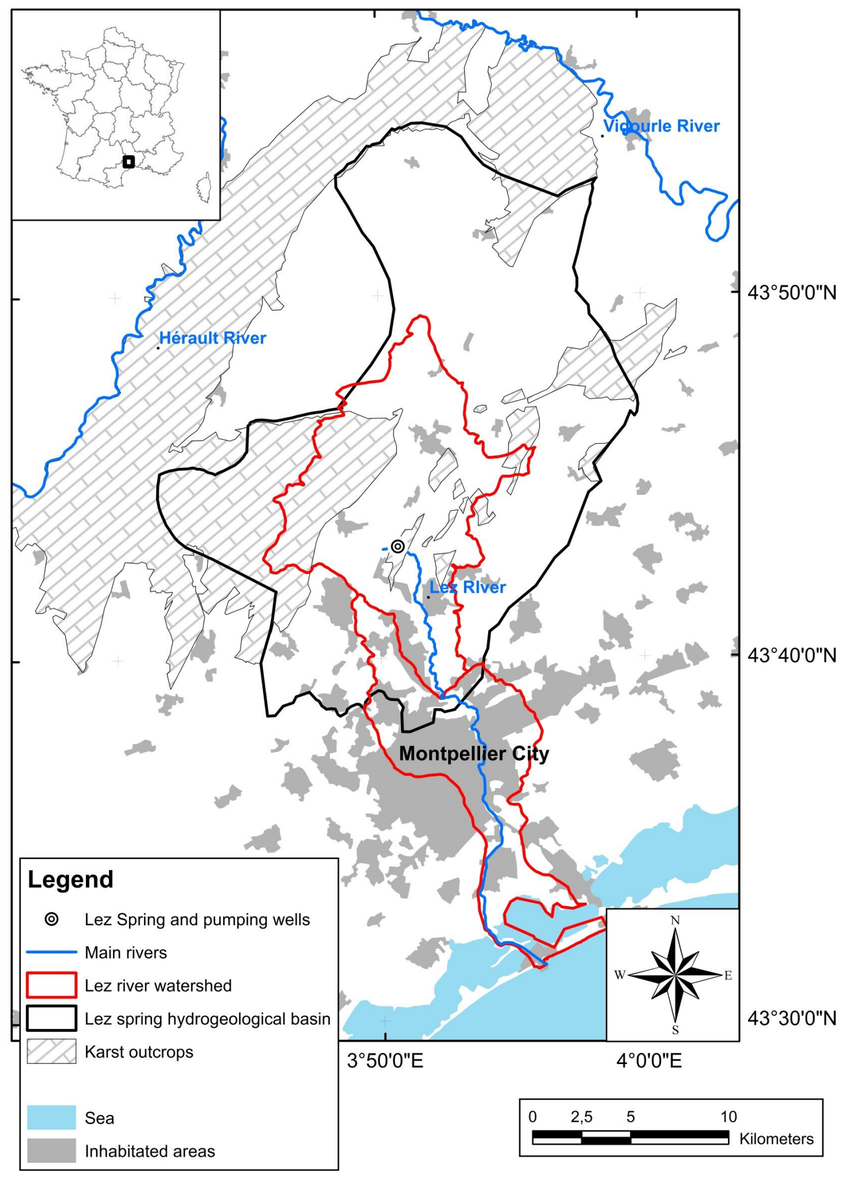
Farmers, **CCR** (French reinsurer), insurances, water agency, local communities, environmental associations, government (local and national)....
Lez case study: Montpellier city, Syndicat du Bassin du Lez (SYBLE), Flood warning service (SPC)

Methods and data to be used

- A global model accounting for water levels in the karst aquifer and discharge rates in the associated river
- Economic assessment of risks (using data from insurance and from classical survey data and interviews)
- Economic assessment of co-benefits (implementation of environmental economic methods)

INSURANCES

1. *Classical insurance for crops, with low penetration rate of insurance because high insurance rates*
   "Calamité agricole" recognition for extreme events => specific funds
2. *NAT CAT for floods risks - Specific insurance regime for properties for Natural Disasters declared, at the municipality level (managed by CCR)*



DEMO Lez karst river watershed

Main Outcomes Sought

- Demonstration of the interest of NBS / karst aquifer active management
- Demonstration of the insurance value of NBS under study
- Set up of feasible technical and institutional NBS strategies
- Acceptability of solutions

Partner participating

BRGM (DEMO COORD):

Realize the work in the DEMO to illustrate the feasibility

CCR :

Modelling of damages (residential, industrial)
Nat Cat data analysis
Damage mapping
Alternative insurance business model research
Contact : dmoncoulon@ccr.fr.

OTHER PARTNERS WELCOMED !!