High N retention in Mediterranean catchments enhanced by water management practices

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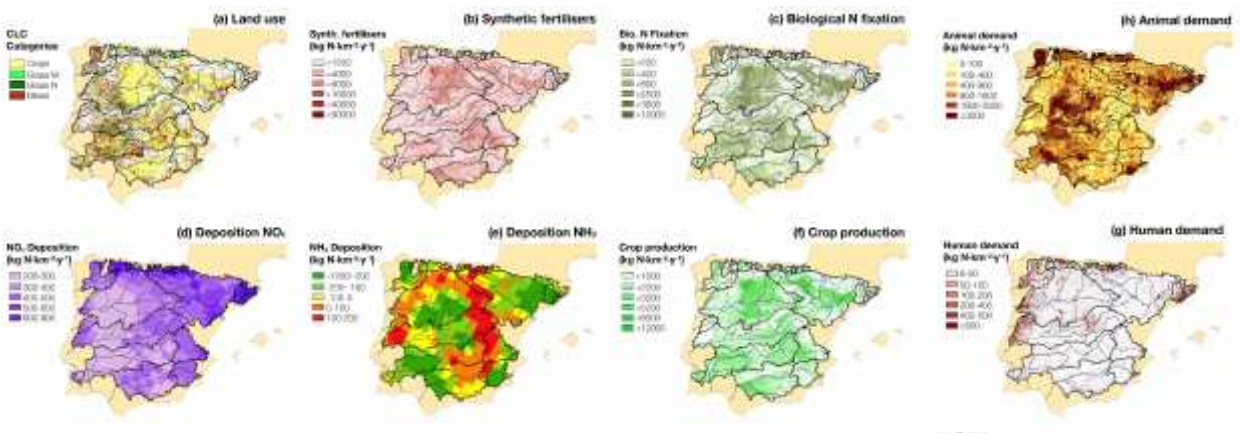
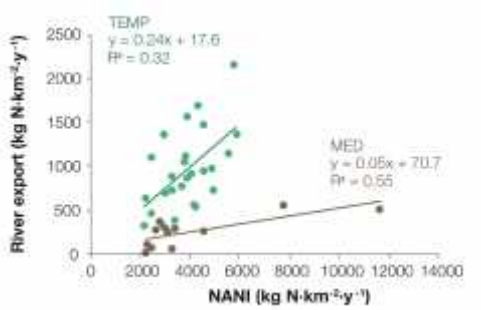
Fluxes and N retention 38 Iberian catchments

Contrasting climates (temperate *vs* Mediterranean), land uses, water management strategies

Hypothesis: N retention is tightly related to water regulation practices

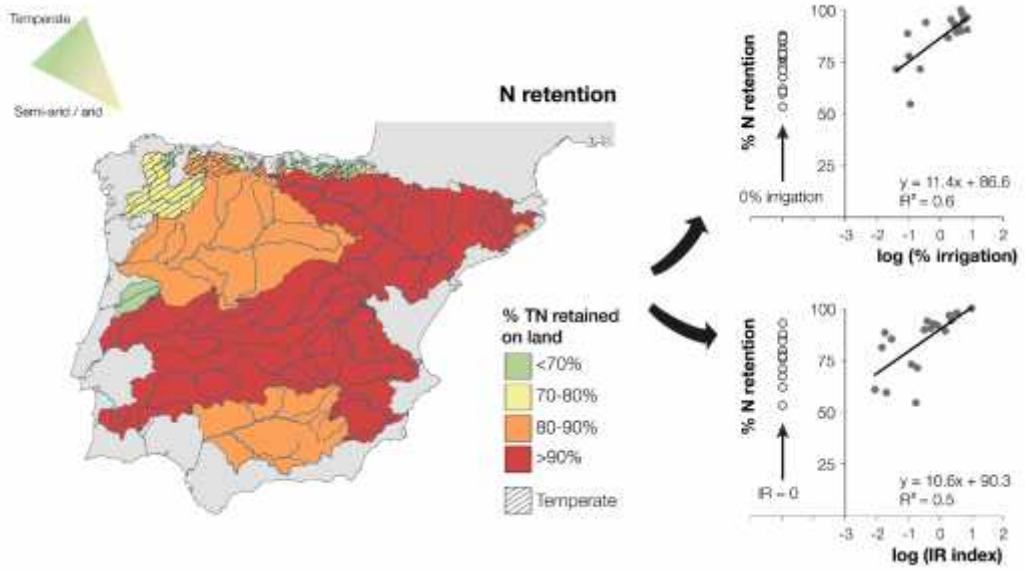
2000-2010 period → N Retention = spatialized NANI inputs - river outputs





For similar N inputs, retention is higher in the Mediterranean

Water regulation features | number of dams and reservoirs, water storage capacity
Impounded Runoff (IR) = f (Hm^3 storage capacity, annual runoff)



Reservoirs and irrigation channels account for >50% of the variability in N retention

Above a certain threshold of water regulation, N retention is consistently >85–90%

Future climate projections

decrease in rainfall + agricultural intensification + increased irrigation

= Increased water demand + flow regulation

similar to Iberian Mediterranean catchments