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The Water Abstraction Licence Regime in Italy: a case for Reform?

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1. Definition of flow and abstraction

Abstraction is the removal of water, permanently or temporarily, from water bodies or from underground strata. May causes the alteration of the natural flow regime, directly or indirectly.

Environmental flow, Minimum flow, Ecological flow
No unified definition. Two key aspects in common: the flow regime that should be considered and the level of conservation for the ecosystem that is intended.

The **River Basin** is a **system** in which all living things are inextricably linked by their common water course.

The **main challenge** in managing abstraction is to meet the reasonable needs of water users, while leaving enough water in the environment to conserve river, lake and wetland habitats and species.

2. The European framework on water abstraction

The Water Framework Directive 2000/60

EC Communication on Water Scarcity and Droughts

EU Resource Efficiency Flagship

The Blueprint to safeguard

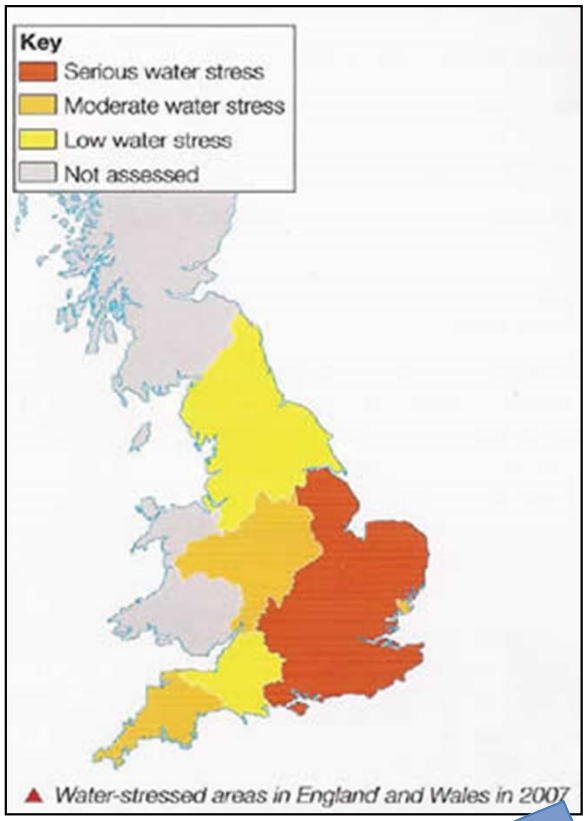
Europe’s water resources

The EU Climate Adaptation Strategy

Common aspects:

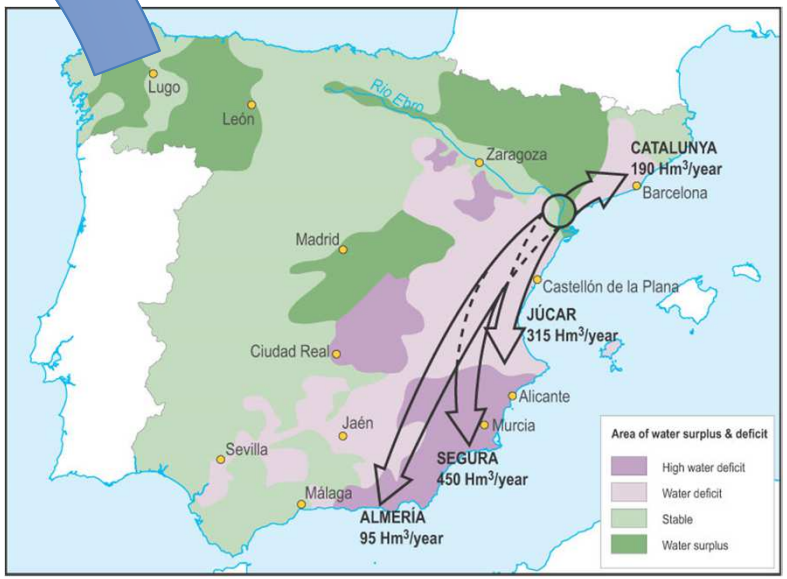
- Environmental flow is not explicitly mentioned
- Achieve good status for Europe's waters (of sufficient quantity)
- Move towards a resource (water)-efficient economy
- Development of strategies for the management and conservation of water

3. The Water Abstraction Licence (WAL) in UK and Spain



▲ Water-stressed areas in England and Wales in 2007

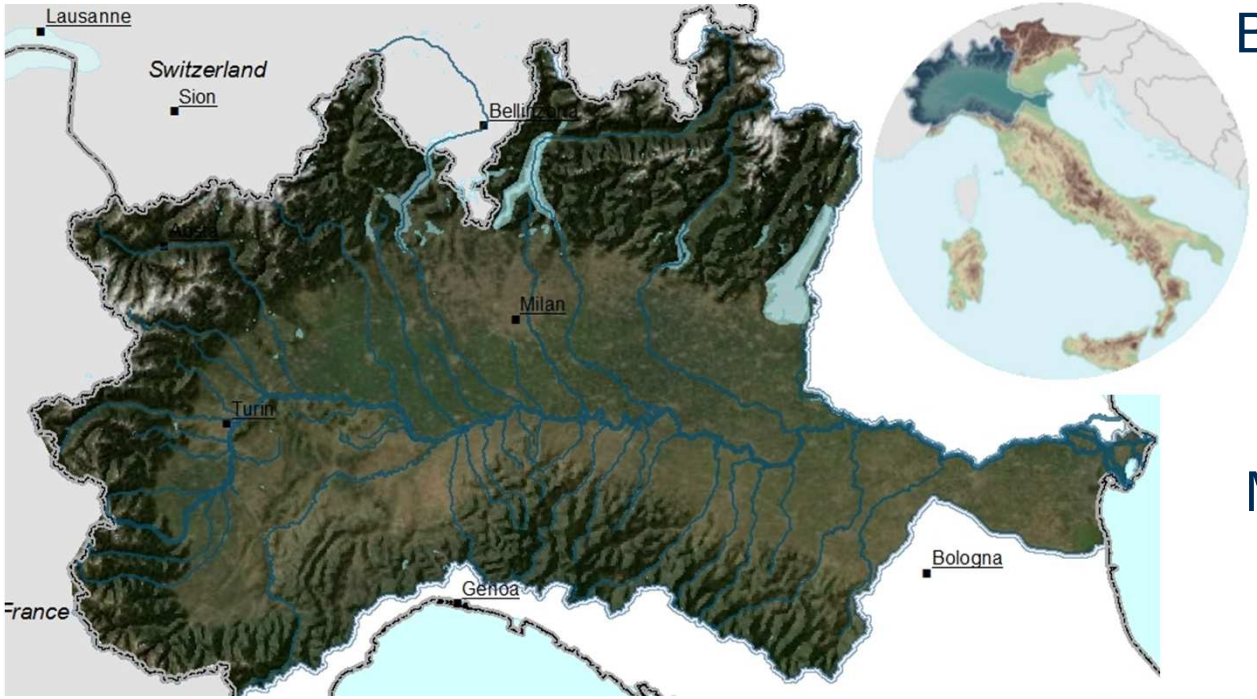
Tradable licensing regime



Water law reform in 1999, 2005

Water allocation

4. The Po River Basin District (PRBD) case study



Basin area is 70.091 km2

42% is alluvial plain

17M population

35% national GDP

Mean daily Q: 1500 m3/s

40% agriculture

80% withdrawal from surface water bodies for irrigation use

Highly exploited during summer/irrigation season

Under average climate conditions water quantity is sufficient for all water uses … but climate change is already worsening adverse natural conditions, threatening water quality

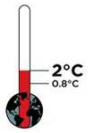
5. Main challenges in the PRBD

Alps

Ice melting from Alps

Decline and distribution of precipitation

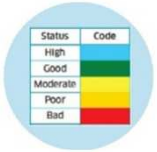
Apennines



Increase of mean temperature

Impacts of droughts

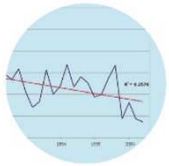
Plain



River water quality

Increasing water demand

Delta



Decline in water availability

Salt intrusion

National Adaptation Strategy

Review the Water Abstraction Licence regimes in the PRBD

Fondazione Eni Enrico Mattei

Recent droughts events and related impacts

Years 2003, 2006, 2007

21

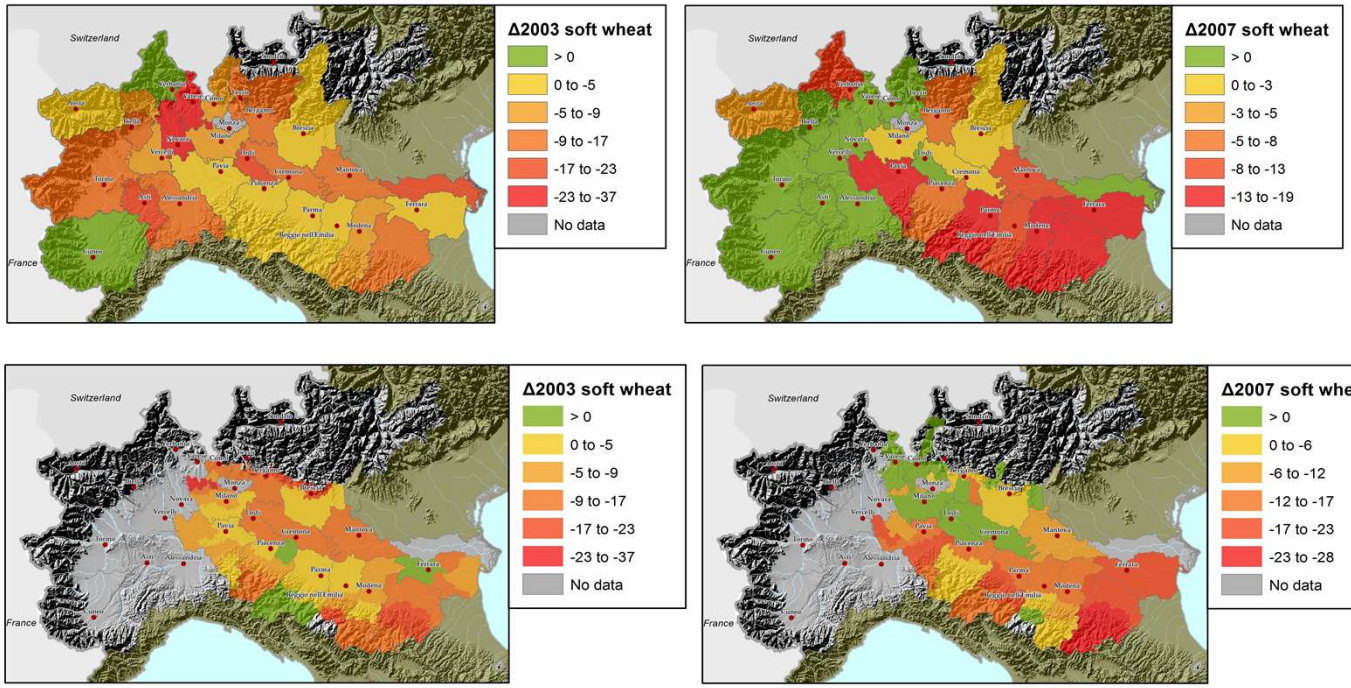
months of

(national) emergency

Drought Steering Committee

(River Basin Authority and Civil Protection Agency)

Economic impacts of droughts in agriculture (t/ha)



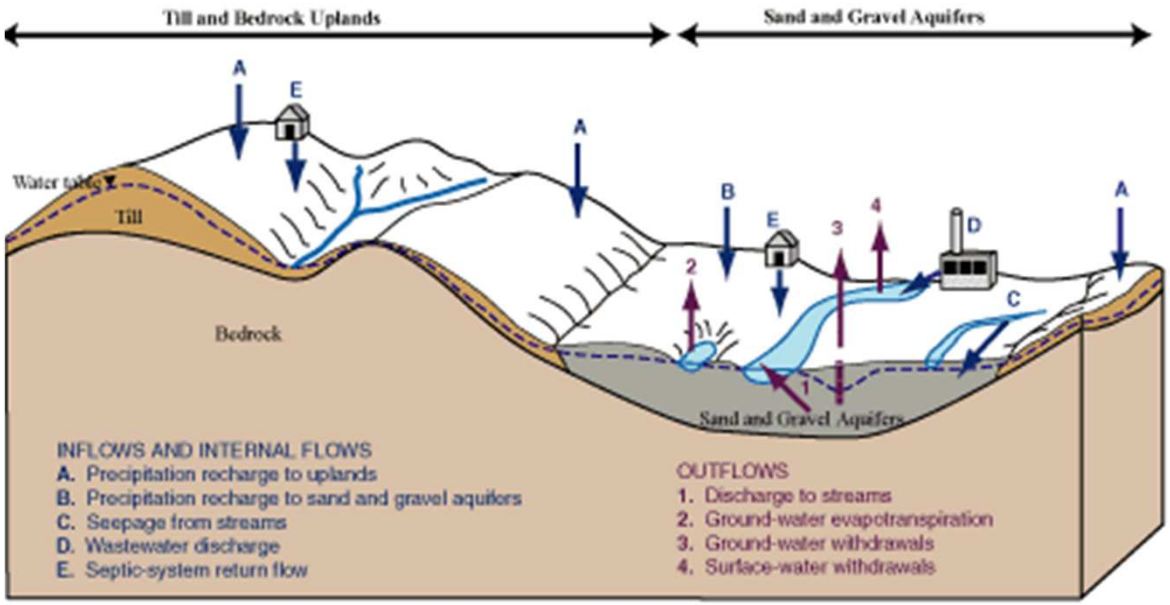
Provinces (NUTS3)

Agricultural Regions

(*Mysiak et al, 2013*)

7. Increasing demand of water availability

The **River Basin is a System** in which all living things are inextricably linked by their common water course (Environmental Protection Agency)



…. INFLUENCED by :

Population growth

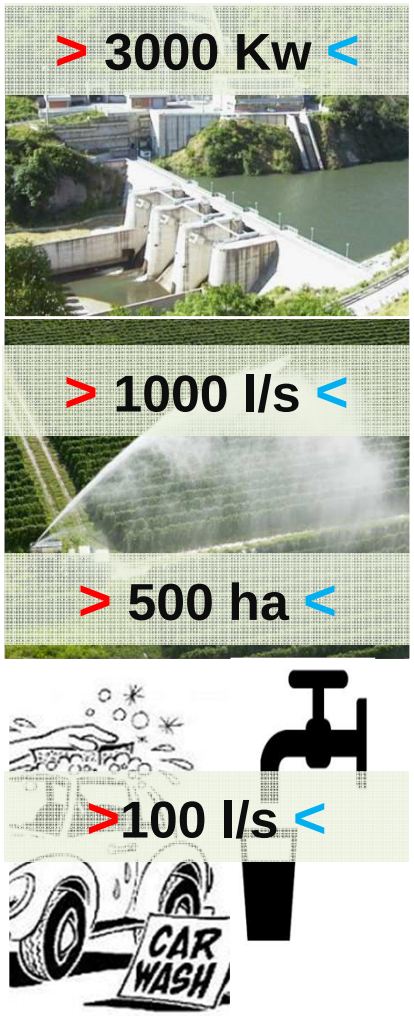
Economic activities

Climate change

8. The water abstraction licence regime in Italy

Water Abstraction National Law: R.D. n. 1775 of 1933

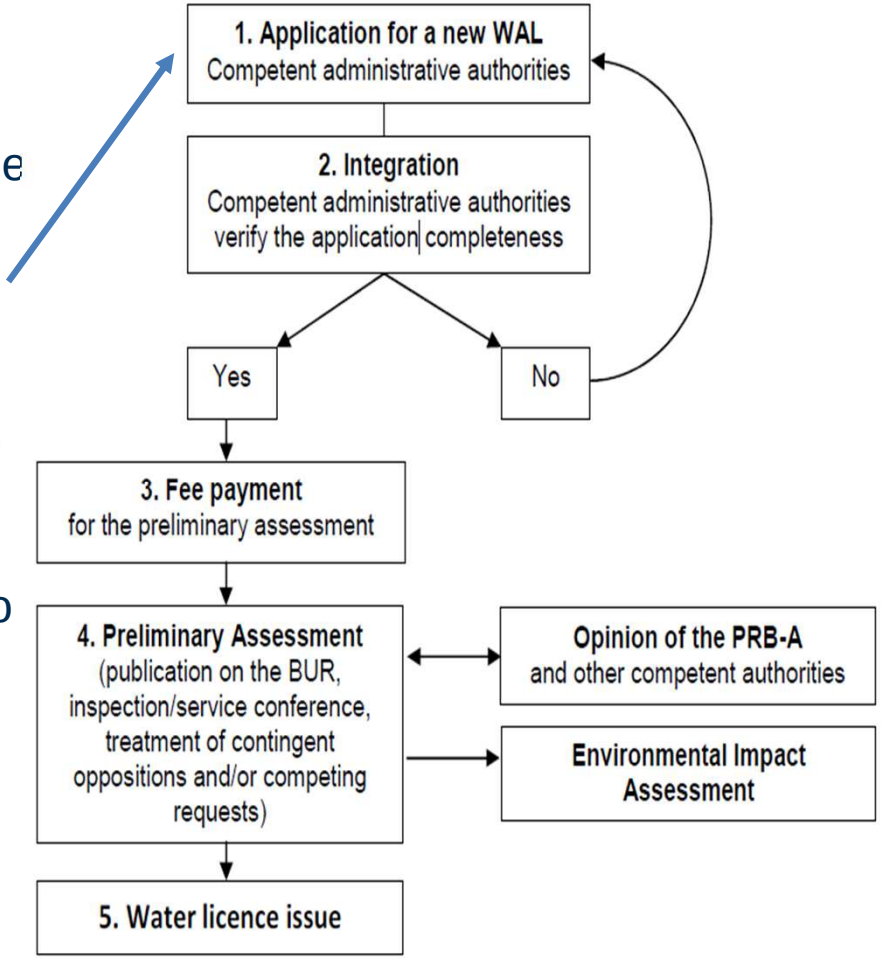
Shift of competences from State to Regions (’72, ’78), same River Basin but different regulations.



LARGE Volume >		SMALL Volume <
Emilia – Romagna Regional Law 41/2001	→	Technical River Basin Services
Piedmont Regional Law10R/2003	→	Provinces (NUTS3)
Lombardy Regional Regulation 02/2006	→	Provinces (NUTS3)
Valle d’Aosta Regional Law 04/1956	→	Region
Veneto Different regulations	→	Public Work Offices

9. Main similarities among Regions

- Water abstractions are specified in absolute terms and are not measured
- Water abstractions entitlements are not transferable
- Application procedure for a new water abstraction or renewal
- Application is consented or declined, by taking into account environmental flow
- Opinion (ecological flow for large volume) of the Po River Basin Authority
- Duration for irrigation use (40 years)
- Self-supply from groundwater for domestic use exempted



10.

Abstractions fees and inflation

Abstraction fees differ across the Regions and the use.

Over the past decades, the real value of the water concession fees declined since the applied inflation rate used for the update of the tariffs falls below the real inflation rate.

	Potable	Irrigation			Industrial		Hydropower
		no return	with return	not metered	no return	with return	
Unit	[€/m³/s]	[€/m³/s]	[€/m³/s]	[€/ha]	[€/m³/s]	[€/m³/s]	[€/Kw]
Lombardy	22.177	52.040	26.010	0,52	179.958*	362.769*	15** [30**]
Piedmont	21.890	52.000	52.000	1,14	164.280	164.280	28
Emilia-Romagna	20.130	47.470	47.470	0,43	155.042	155.042	14
Valle d'Aosta	19.309	45.310	45.310	0,41	70.802	141.605	16
Veneto	41.822	98.142	49.071	0,89	322.394	322.394	29

The water concession fees (as in 2013) for the major water uses across the PRBD regions.

Legend: * the WCF for industrial water uses in Lombardy are specified according to the volume withdrawn (more and less than 3 m3/s); ** WCF for hydropower generation is specified for small and large volume withdrawal.

11. Roadmap for a reform

- Abstraction volumes and duration of permits to be linked with actual water availability (in a long-term perspective)
- Develop and update (census) a water abstraction permits database based on river basin boundaries
- Measure water withdrawal (mandatory by the law 152/2006, the so-called Environmental Code)
- Ensure water quality introducing new criteria for new abstraction licenses (guaranteeing a water quality objective)
- Improve water pricing policies (that consider the environmental and resource costs).

Thank you for your attention

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