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SLIDES: Water Allocation and Water Markets in Spain

Nuria Hernández-Mora

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Boulder, Colorado, June 9-10, 2016**

Water allocation and water markets in Spain

**Nuria Hernández- Mora,
Universidad de Sevilla
SPAIN**



Outline

- 1. Context**
- 2. Triggers, characteristics and evolution of water markets in Spain**
- 3. Lessons learned**



1. Context for water allocation and reallocation

Jurisdiction for water legislation, policy making and watershed management in Spain



The challenge to harmonize national water legislations at the EU level

The EU **is not** a Federation:
28 member states with different
political, legal and cultural traditions

The European Union



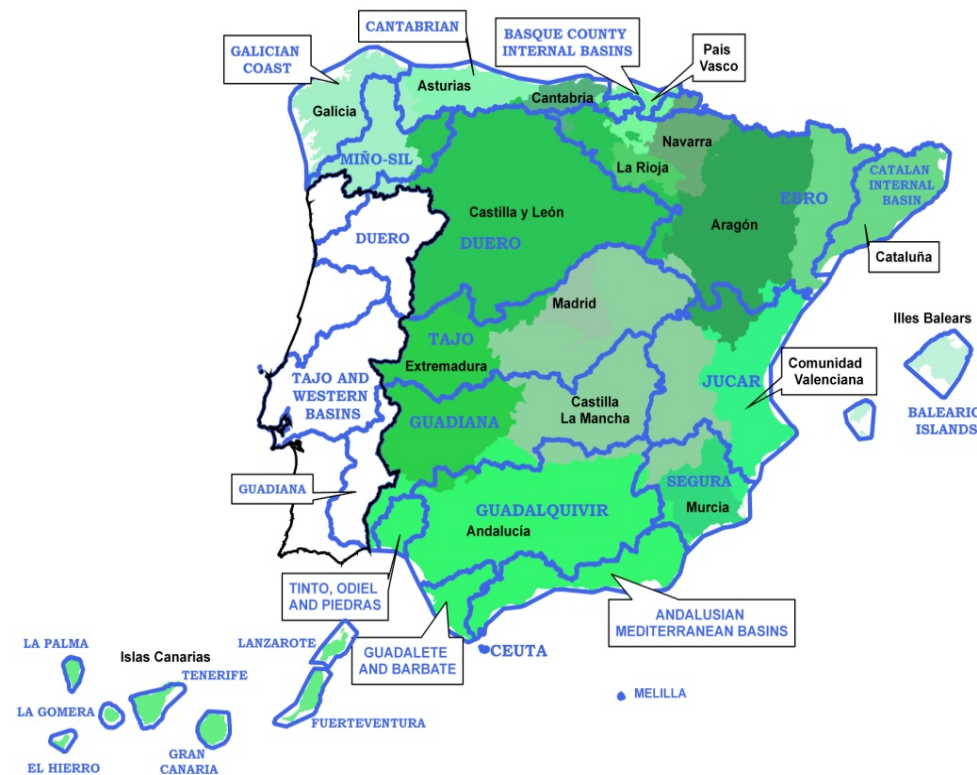
The USA: 58 federal states with a
common Constitution, shared sense
of nation and legal tradition.

The United States



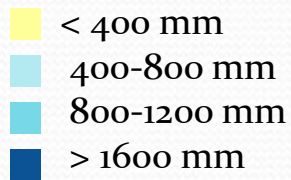
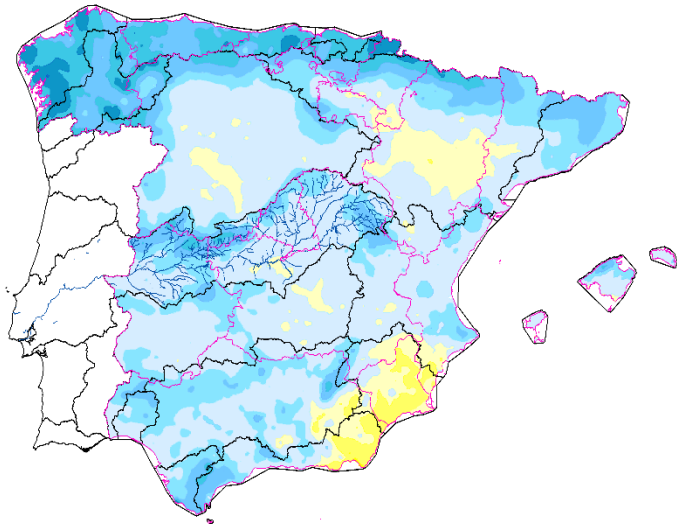
The challenge of coordination at the national level

- River basin management since the 1920s (evolving goals, methods actors and discourses)
- Decentralized quasi-federal political-administrative organization since the late 1970s
- 17 Autonomous regions and 14+7 overlapping river basin districts
- Division of authority regarding water management between central and regional governments is a contentious and ongoing process.

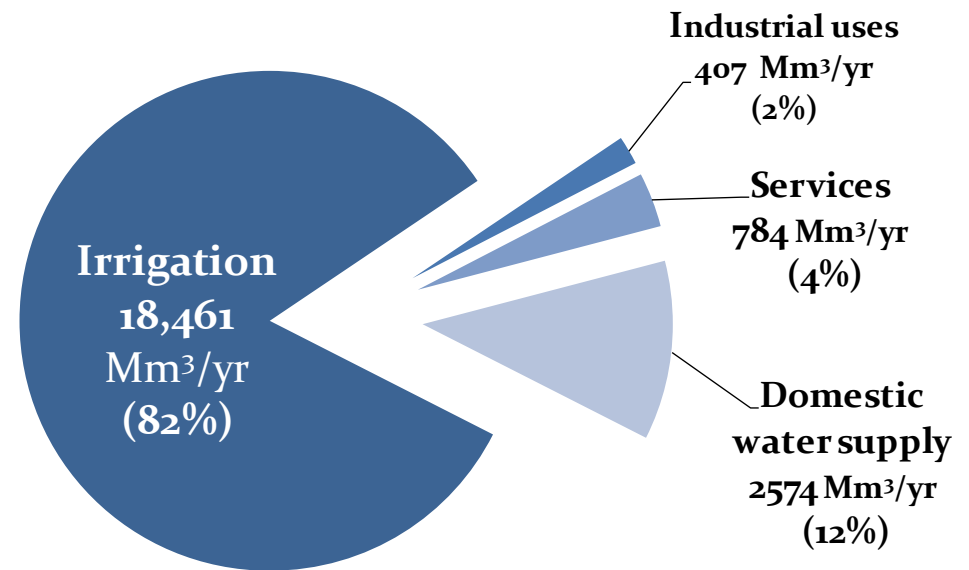


Climatic variability and main water users

Precipitation



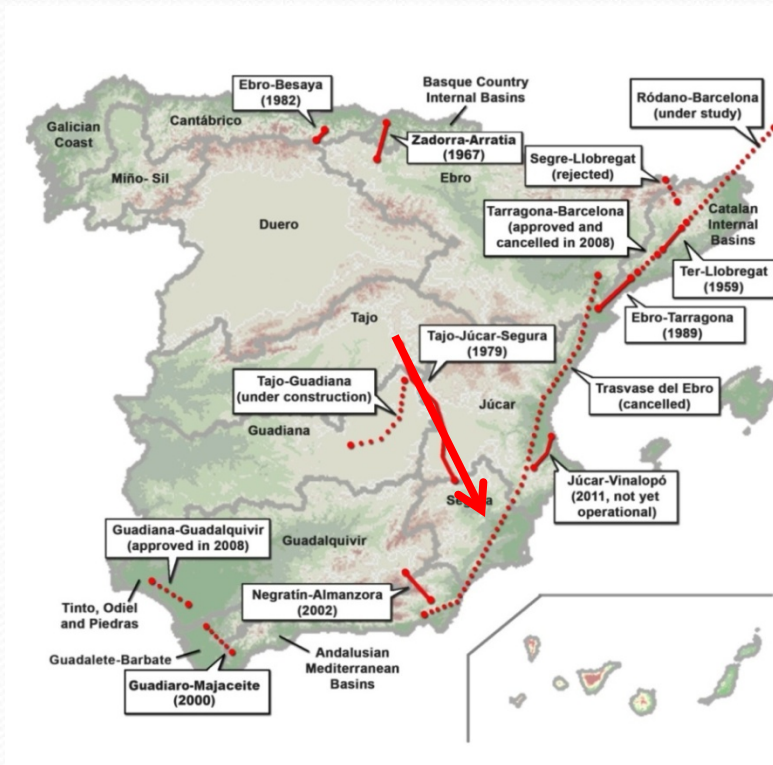
Main consumptive water uses



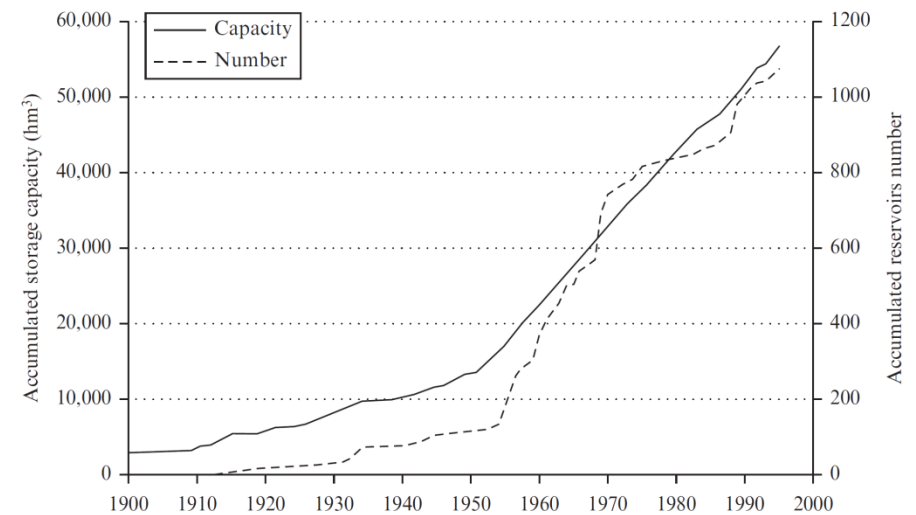
Hydroelectricity:
22,000 Mm³ stored capacity (40% of all stored water)

A hydraulically mature society

INTERBASIN WATER TRANSFERS



DAM CONSTRUCTION

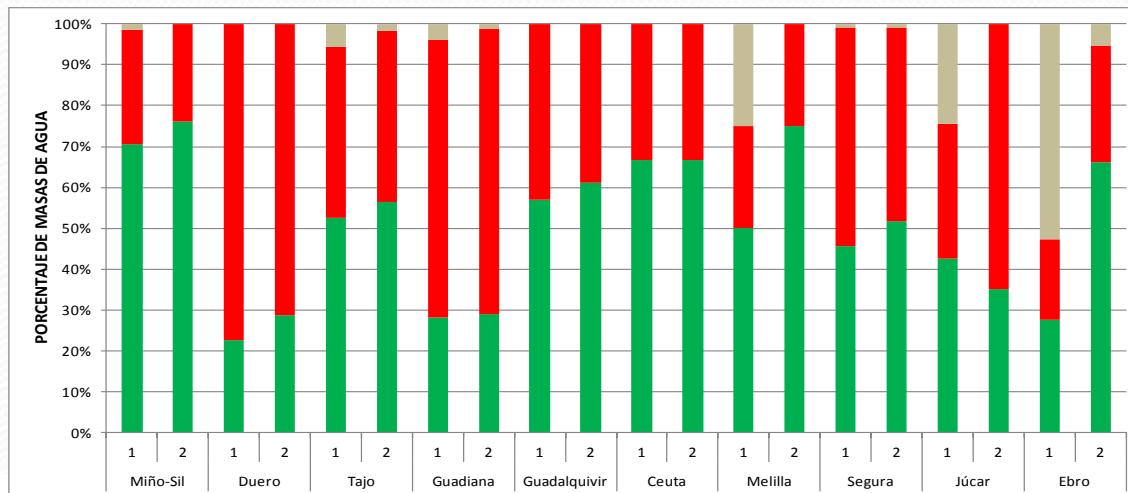


Water resources under pressure: Status of surface water in Spain

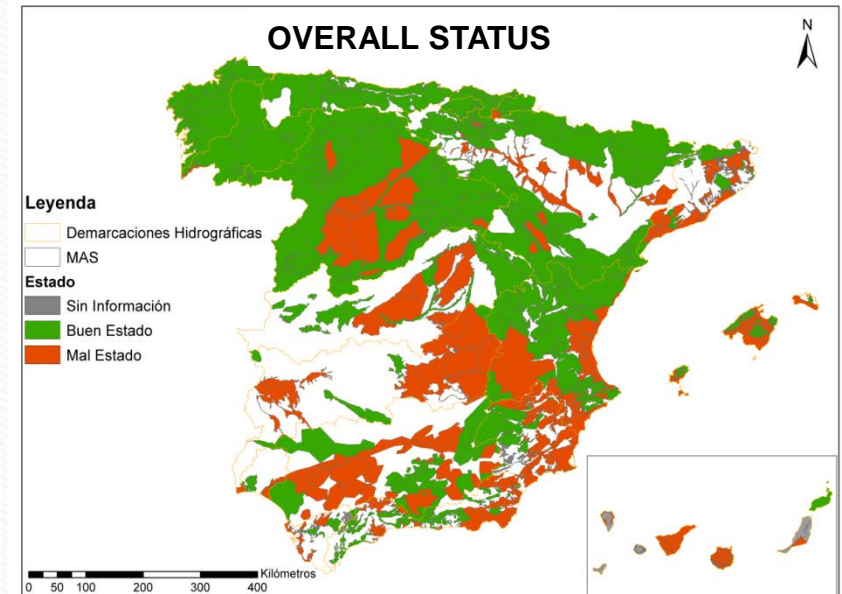
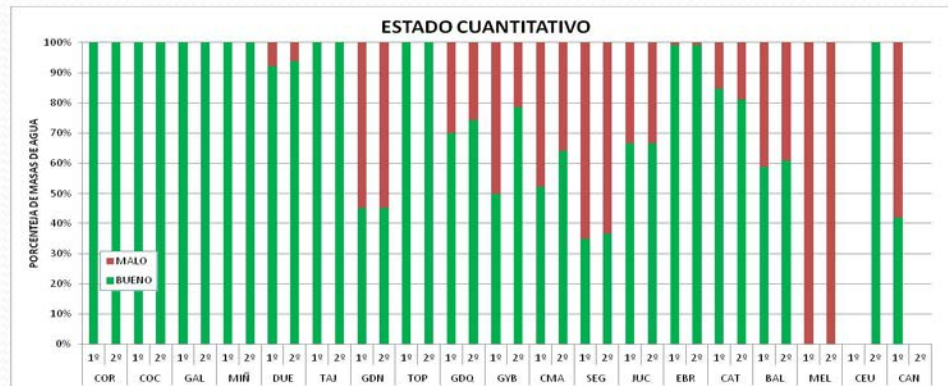


Main pressures:

- Agricultural diffuse pollution
- Insufficient urban and industrial wastewater treatment
- Hydromorphological alterations
- Over-allocation of water rights



Water resources under pressure: Status of groundwater in Spain



Main pressures:

- Agricultural diffuse pollution
- Over-abstraction
- Uncontrolled abstractions

Administrative mechanisms for water allocation

Spatial scale	Characterization	Legal/administrative instrument	Dominant allocation criteria
International	Spain shares four major river basins with Portugal (40 % of country's territory)	Albufeira Convention	Guarantee hydroelectric production, water supply, flood protection and environmental flows.
Country	Allocation of water resources among river basin districts	National Hydrologic Plan	"National hydrological balance" for economic and territorial strategies
River Basin District	Allocation of water to different users	Basin Hydrologic Plan	Regional economic and sectoral development.
User	Holder of water use rights	Water use permits (<i>concessions, private groundwater rights, historical irrigators</i>)	Existing rights

Water rights (*concesiones*)

- Water is a public good, the “hydraulic public domain”
- Water permits (*concesiones*) grant use rights for up to 75 years for a specific use in a specific location
- Long licensing periods limit management flexibility and create a sense of “private property” over water
- Restrictions and administrative reallocation takes place in times of drought and to guarantee domestic water supply (agreed upon in user-participated Management Boards at the river basin scale)
- Water use permits often pre-date the introduction of environmental concerns in water management
- Permit review processes (for environmental, socioeconomic, scarcity or efficiency reasons) are politically challenging, potentially expensive, and seldom undertaken

Informal water markets in Spain



- Informal water markets
- Public water banks
- ↔ Water use permit trading

- Trading concentrates in southeastern Spain: highest socioeconomic scarcity and very profitable water-dependant activities (irrigation and tourism).
- Private contracts between users that are sometimes approved by the water administration.
- A majority of contracts take place between irrigators and between irrigators and urban water users.
- There is scarce information on volumes exchanged or prices paid.
- Prices often exceed official rates for water & show ability to pay/scarcity value.

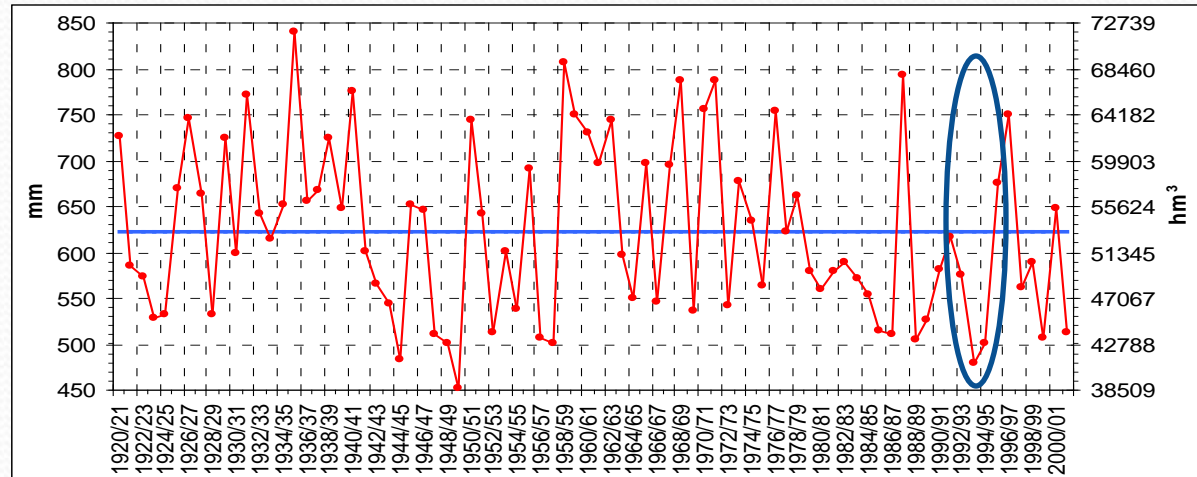
River basin district	Annual volumes traded (Mm ³)	Volumetric prices (€/m ³)
Segura	25 - ??	0.10 - 0.70
M. Andaluzas	30 - ??	0.18 - 0.28
Júcar	40-70	0.04-0.20



2. Triggers, characteristics and evolution of water markets

Triggers for the introduction of water markets in Spain

Evolution of mean
precipitation
between 1920/21
and 2000/2001



SOCIOPOLITICAL CONSENSUS

- Widespread agreement that **water markets could serve as a tool to transform the dominating hydraulic water management paradigm** in Spain.
- Help prevent water restrictions in urban areas near irrigation districts in times of drought,
- Offer an alternative to interbasin water transfers between distant regions as a solution to local water shortage problems, thus avoiding the high political, socioeconomic and environmental costs of these transfers

Highly regulated and publicly controlled water markets: 1999 Water Act reform

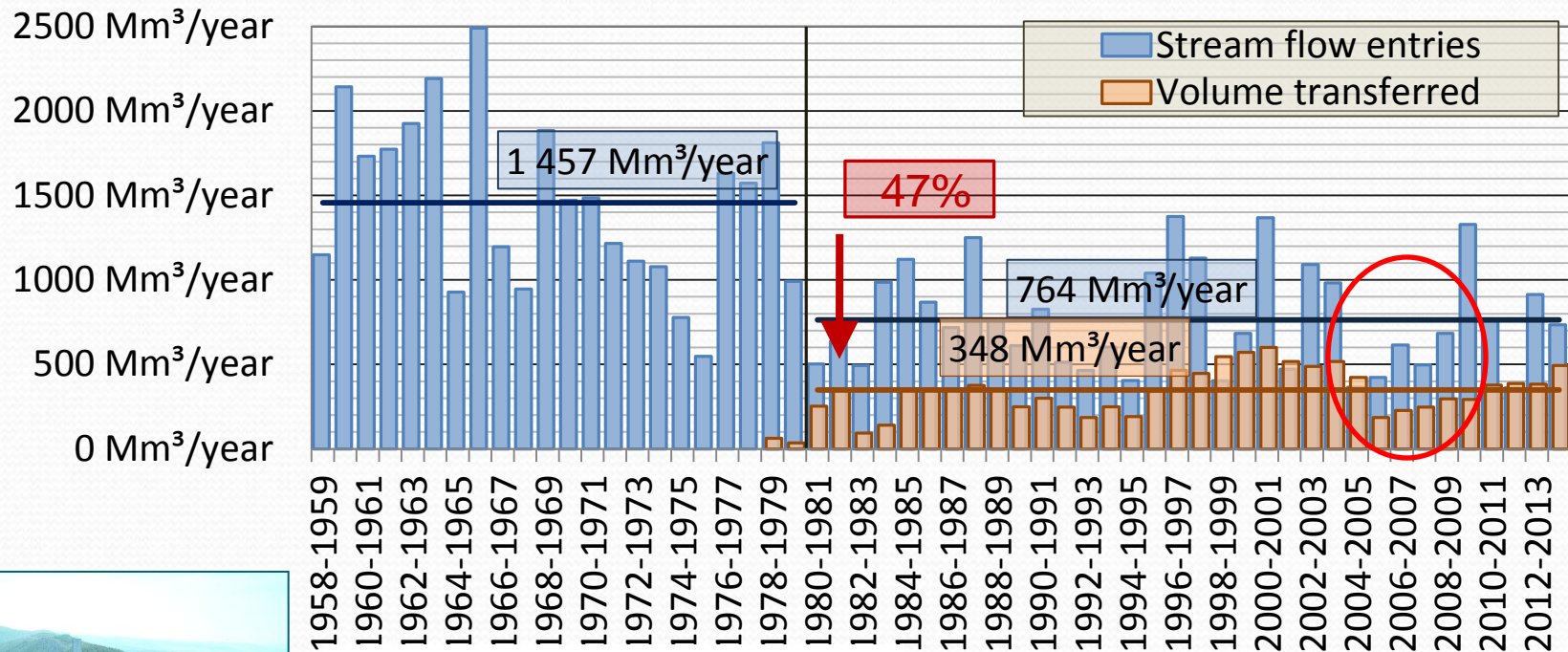
Water use permit trading

- Private contract **between water permit holders**
- Buyer and seller must be **within the same river basin district**
- Contracts are temporary (no permanent reallocation)
- Contracts must respect order of priority allocation (lower to higher)
- Non-consumptive users cannot sell to consumptive users
- **Only volumes effectively consumed can be traded**

Public water banks

- Established by River Basin Authorities (RBA) under exceptional circumstances
- RBAs publish an offer to purchase (temporarily or permanently) water use permit rights at a pre-established price
- The purchased rights can be held by the RBA (for environmental reasons or to increase supply guarantee) or reallocated to other users

Water inflows to the Tajo river headwater reservoirs and volumes transferred



Liberalization of water markets:

The 2005-2008 Drought Decrees and the 2013 reforms

Content and justification for the reform

- Incorporate pre-1985 irrigation water rights into market mechanisms
- Allow use of interbasin water transfer infrastructures for interbasin water permit sales
- Very limited use of existing market mechanisms for water reallocation (less than 1% of total consumed water but more significant in some regions)

Water trading in different river basins in 2007 (Mm³)

River basin district	Intra-basin permit sales	Inter-basin permit sales	Public water banks	Volume traded/Total consumption (%)
Guadalquivir		-33.21		0.88
Tajo		- 68.40		2.42
Segura	2,40	+74.50	9.52	4.39
M. Andaluzas	0,90	+ 33.21		2.55
Júcar		- 6.10	126.00	4.21
Guadiana			3.00	0.42

Up to 30% of volumes transferred



3. Lessons learned

Water markets

- The introduction of markets implies changes in the relative value assigned to market versus political deliberation for the management of natural resources.
- Legally prescribed water trading mechanisms are infrequently used under normal hydrological conditions for a variety of reasons (reluctance of users, legal constraints, etc.)
- Existing information indicates that the most significant volumes of formal water trading use interbasin transfer infrastructures in times of drought to avoid legal limits (and political outfall) of transfer decisions.
- In the case of Spain the progressive liberalization of market instruments responds to a desire to substitute politically contentious transfers decisions by purportedly “apolitical”, “value-neutral” and “efficient” market mechanisms.
- Informal water trading continues in many water-stressed regions and serves to resolve local problems of scarcity. However, the lack of administrative supervision fails to defend the public interest.

Some pre-conditions for the introduction of water markets

- Incorporated into broader basin management plans.
- Clearly defined, solid and stable institutional context
- Clear goals (environmental improvements, reduced social conflict, prevent drought-related losses, reduce water scarcity...)
- Transparency with regard to market characteristics and operation (contracts, actors involved, characteristics of the permits traded, volumes traded, price, location, temporal scale, etc.)
- Clearly delineated "boundaries": existing permitted uses, volumes effectively used, geographic scale, etc.
- Constant evaluation of socioeconomic, environmental, territorial impacts, BUT not aggregated, instead geographically distributed
- Public scrutiny of its selection, design, implementation and evaluation.



*Grupo de Investigación
Estructuras y Sistemas
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Thank you for your attention

Nuria Hernández- Mora
University of Seville

nhernandezmora@us.es