Lessons learnt by applying the water footprint to the Spanish water policy

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Overview presentation

1. Scope and aims
2. General framework of water in Spain
3. Basic socio-economic data of Spain
4. Water footprint in Spain
5. Introduction of economics (apparent water productivity, subsidies, import and export)
6. Lessons learned: Food (virtual water) trade drivers
7. Other factors guiding water policy in Spain
8. Conclusions

1. Scope and aims

- Ongoing research – Water footprint in Spain (2010-2012)
- Distinctive aspects:
  - Integration of hydrological, ecological and economic aspects
  - Socio-political and institutional drivers pending
  - Participation of the stakeholders-farmers. WIN-WIN solution
- In Spain the policy of ‘more crops and jobs per drop’ has to change to ‘more cash and care of nature per drop’ Is this feasible?
- Upcoming application to the Latin American context

2. General framework of water in Spain

The driest country in the EU

- Water policy is fraught with frequent and diverse conflicts
- Population: 45 M
- Country total area: 500,000 km^2
- Cultivated area: 170,000 km^2
- GDP: 30,000 US$/capita
- Total renewable water resources (precipitation): 350 km^3/year

  Blue surface water: 80 km^3/year

  Blue groundwater: 30 km^3/year

Source: Aquastat (FAO, 2010)

3. Basic socio-economic data of Spain

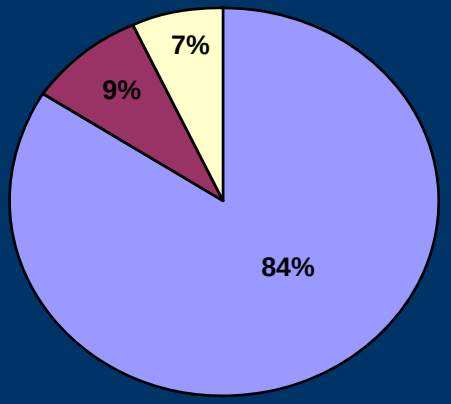
Gross domestic product and employment in Spain at current prices (2005)

	Gross Domestic Product		Employment	
	Million €	%	Thousand jobs	%
Agriculture, livestock and fishing	26,473	3	1,033	5
Energy	20,415	2	149	1
Industry	122,844	14	3,130	16
Building industry	94,161	10	2,425	12
Services sector	546,929	60	13,324	66
Total	905,455	100	20,061	100

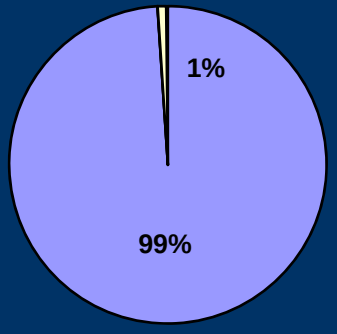
- Agricultural jobs in the 1950's were 45%
- Great social change in the last half century
- Spain is now an industrialized country

4. Water footprint in Spain

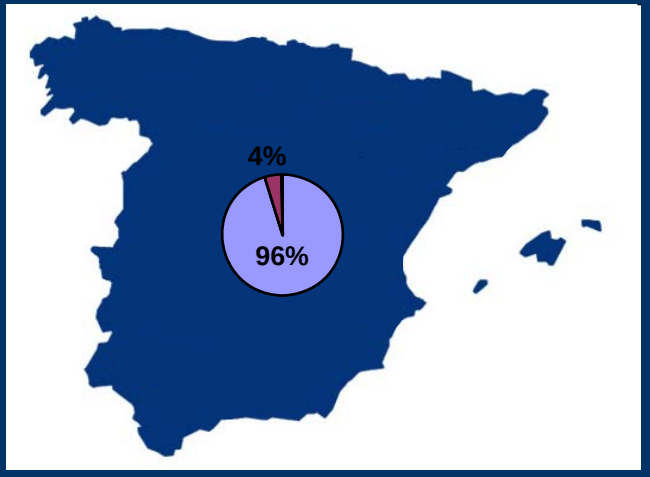
Water footprint of Spain (46 Km^3) (2004)



External WF (in other countries)
33 Km^3 (72%)



Internal WF (inside Spain)
13 Km^3 (28%)



Source: based on Garrido et al. (2010)

4. Water footprint in Spain

Incorporating the Water Footprint and Environmental Water Requirements into policy : Reflections from Doñana Region (Spain)

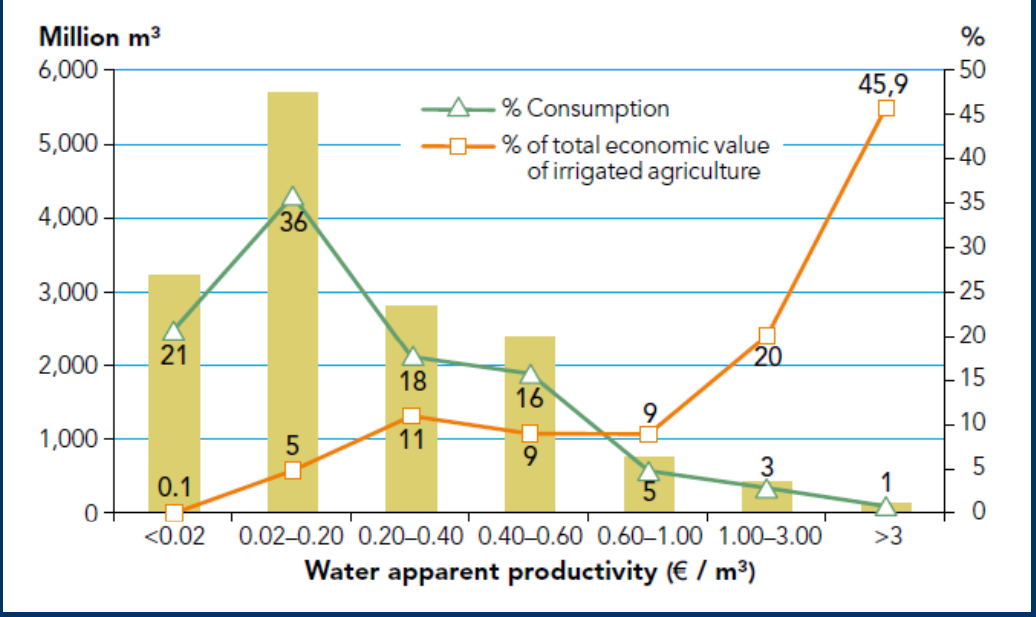
Source: Aldaya et al. (2010)

5. Introduction of economics

Most blue water irrigation in Spain is used for low value crops:

- 10% of the blue water (mainly groundwater) produces 80% of the economic value of irrigated agriculture
- 80% of the blue water produces low value crops

Total water use in agriculture by crop productivity range as percent of volume and value added (2001-2002)

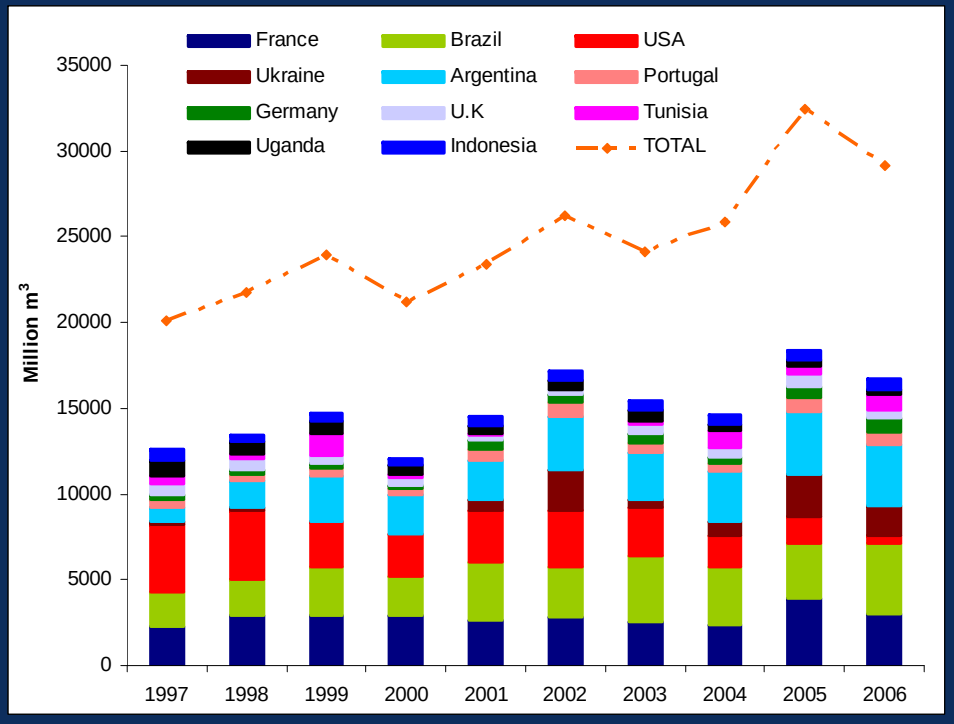


Source: Aldaya et al. (2008)

5. Introduction of economics

- Livestock economic relevance has increased during the last decade;
- Most livestock is exported (mainly pork) while grown with imported fodder (virtual water);
- Increased water dependency.

Crop-related virtual water imports by country of origin



Source: Garrido et al. (2010)

6. Lessons learned: Food (virtual water) trade drivers

- Virtual water trade mitigates drought cycles (acts as a counter-cyclical effect)
- Virtual water trade is mainly a consequence of agricultural (crop and livestock) policies:
  - boosts water and land productivity
  - favours specialisation and efficiency
  - permits more efficient use of available green water
- Enables a closer connection of water uses in the basin with global water use

7. Other factors guiding water policy in Spain

1. Desalination and water transfers

- About 7% of Spaniards drink desalinated seawater.
  Good solution for urban water supply and tourism in coastal areas.
  Energy consumption has decreased from 20 to less than 4 kWh/m^3
  Cost 0.5 euro/m^3 (for large plants in continuous operation)
- The socialist government (2004-2008) cancelled the Ebro water transfer (from the Ebro river to the Mediterranean region) and planned building 20 large seawater desalinating plants. The current socialist government (2008-present) has discontinued the plan.

7. Other factors guiding water policy in Spain

2. Water as a political issue

- New legislation has practically abolished the water administration by river basin
- Each autonomous region claims ‘the water precipitated on my territory is my water not a state water’
- Frequent political conflicts between autonomous regions. Water has become a political weapon.

EBRO TRANSFER CASE

SARAGOSSA, Oct 2002

BRUSSELS, Sep 2001

VALENCIA, May 2003

Clamorous example of social conflict arising from poor groundwater management.

7. Other factors guiding water policy in Spain

3. Water footprint into policy

- Spain is the first country that has included a water footprint analysis into governmental policy making in the context of the EU Water Framework Directive (WFD) (2000/60/EC).

  In 2008 the Spanish Government approved a regulation requiring the water footprint analysis for the development of the River Basin Management Plans according to the EU WFD (BOE, 2008).

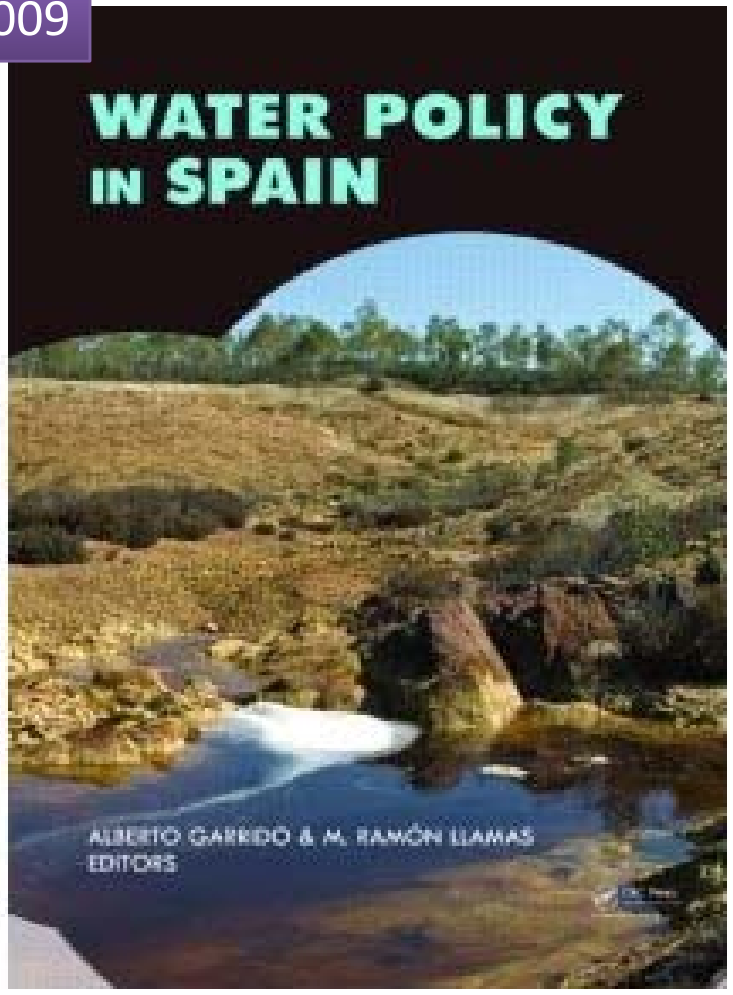
- Recently Spanish regulation about sustainable tourism mentions the water footprint (Plan FuturE 2010) (BOE, 2010)

8. Conclusions

The Spanish experiences shows:

1. The WF is a good method for IWRM, but needs further refinements
2. The food (virtual water) trade is usually driven by comparative advantages. The relative scarcity of water may not be a relevant driver.
3. Socio-political factors in water management might be as important as the environmental and economic ones. An equilibrium between utilitarian and intangible values is necessary.
4. Spanish situation suggests that it is time to change (in industrialized and emerging countries) from a policy of ‘more crops per drop’ to a policy of ‘more cash and care of nature per drop’

2009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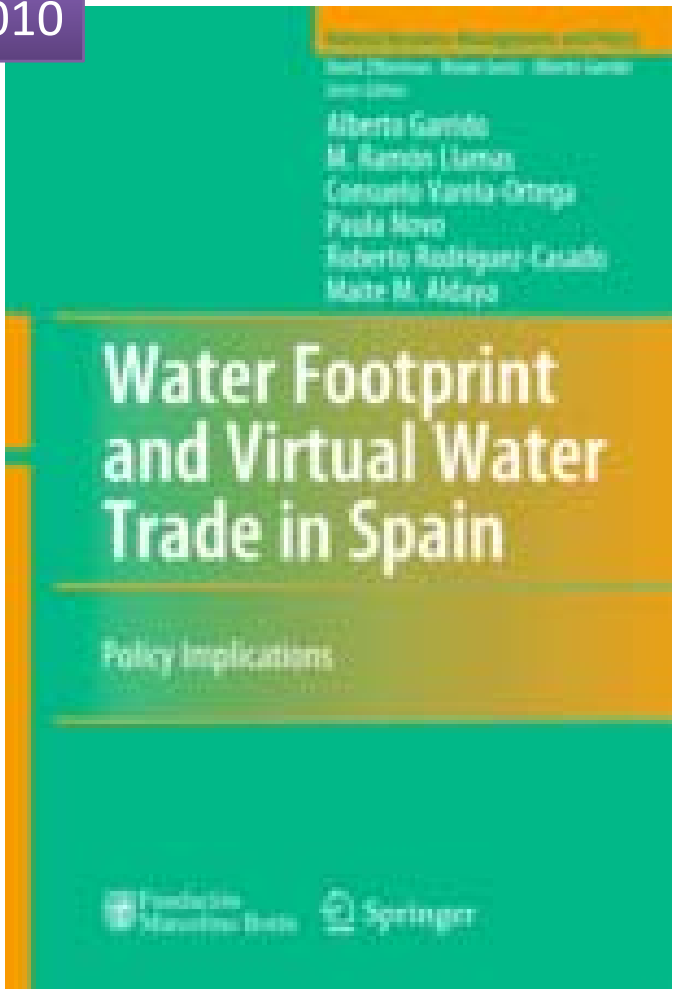
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