

The authors of the report made the following clarifying comments before presenting the study:

1. The study does not look at the institutions that are responsible for managing Spain's irrigation districts. For example, irrigation communities directly manage about two thirds of the irrigated acreage in Spain and perform crucial tasks in administering and monitoring the use of irrigation water. These legally incorporated organizational units are the result of a tradition which goes back centuries. They enjoy wide support among farmers themselves and government agencies. They have also been praised by numerous scholars as world class institutions. The benefits of these institutions are recognized and highlighted in the study, but have not been evaluated.
2. In accordance with the study, massive government irrigation modernization programmes receive about 68% of Spain's irrigation subsidies provided during the 1998-2008 decade. The study did not attempt to evaluate the environmental, social and economic benefits of such programmes. There is wide acceptance that these programmes were necessary to revamp old irrigation districts, many of them built before 1950, and to make them more competitive and environmentally efficient.
3. While a number of authors and documents have claimed there is causal relationship between irrigation subsidies and water scarcity, this report did not attempt to test that assumption. The authors harbor doubts about such a relationship and suggest there are more important reasons for water scarcity, including overall water abstraction levels, water contamination and poor demand side management. These issues may help explain the present state of water affairs in Spain.
4. The scope of the study did not include the evaluation of the benefits, both to farmers and rural areas of irrigation subsidies. Nor did it assess the varying level of income obtained from harvests in the irrigated areas.

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Measuring Irrigation Subsidies in Spain - An Application of the GSI Method for Quantifying Subsidies

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Objectives

1. Assess irrigation subsidies in Spain
2. Draw conclusions about access to data and economic information
3. Make recommendations on methodologies for monitoring economic flows in connection with irrigation water management

Two ways to measure irrigation subsidies...

GSI methodology:

1. “Net Cost to Supplier” approach:

“Difference between the cost of making irrigation water available and the revenue received as payments from the beneficiaries of irrigation water (levies, fees and tariffs)”

1. “Net Worth for User” approach:

“Difference between the financial value placed by the farmer/irrigator on the supply of irrigation water (willingness to pay - WTP) and the total cost of supplying it”

Subsidy Sources

- + Operation and Maintenance (O&M) and Administration costs incurred by governments and not paid for by end-users
 - ++Infrastructure built with preferential financing schemes for its users (low interest rates, shortfall, costs not recovered)
 - +++Cross-subsidization between multiple users of common infrastructure
 - ++++Capital investments with null or low economic and financial returns
 - +++++Prioritizing farming use/ access over uses that have a higher economic value

Background

- Martín Mendiluce (1993): 80% subsidy rate in Andalusia
- Berbel (2005): cost recovery rates of 71% in the Guadalquivir River
- Groot & Sánchez Chóliz (2006); Bielsa et al. (2009):
 - With 0 inflation, the government recovers 102% of the investment in water regulation works
 - Water use tariffs generate a 52% investment recovery rate.
 - % is lower with higher inflation rates

Background

- Pérez and Barreiro (2007): 52% recovery rate in the Gállego River (Ebro Basin)
- Valsecchi et al. (2009) subsidies of €165 million
- MMA* report (2007)

*Spanish Ministry of Environment

Background

**TABLE 2.3: FARMERS' PAYMENTS FOR IRRIGATION WATER SERVICES IN SPAIN IN 2001–2002
(ONLY IN THE INTERREGIONAL BASINS), ALL FIGURES EXPRESSED IN EUROS**

Basin	Groundwater		Surface			Surface and Groundwater		Financial cost recovery rates
	Cost per ha	Cost per m ³	Distribution (paid to WUA)	Per ha WUA and basin tariff	WUA and basin tariff per m ³	per ha	per m ³	
Duero	500	0.095	19.88	46	0.012	231	0.044	86.1%
Ebro	829	0.15	49	12	0.011	113	0.02	89.0%
Guadalquivir	744	0.15	101	70	0.035	400	0.081	97.7%
Guadiana	232	0.048	19	102	0.025	188	0.039	54.1%
Júcar	383	0.074	81	16	0.02	283	0.055	85.0%
Segura	789	0.163	34	151	0.038	463.8	0.096	n.a.
Tajo	541	0.1	36	67	0.02	199.3	0.038	n.a.
Total	500	0.09	50	56	0.021	263.5	0.051	87.1%

Source: MMA (2007b)

Information Sources Used

- MMA (2007): Costs of water services in Spain. Integrated report of cost recovery of water services in Spain.
- Reports of the River Basin Authorities (RBAs) and regional governments (WFD/DMA)
- MMA (2005): Economic report of the project to reform Spain's Royal Decree on the Regulation of the Public Water Domain.
- Academic literature
- Documentation of the PNR*-H2008 and Royal Decree 287/2006.
 - * National Irrigation Plan – Horizon 2008
- Various studies:
 - FENACORE** (2004): Survey of economic and financial information of the Irrigation Farmer Communities **Irrigation Farmers' Federation
 - INE*** (2004): Survey on water use in the farming sector. ***National Statistics Institute
 - MAPA† (2005): Study on the cost of irrigation water. † Ministry of Agriculture, Fish and Food
 - MMA (2003): Cost estimates of groundwater use in Spain.

Data and Methodology Problems

- Data are not collected or organized for cost assessment purposes.
- Real data on O&M investments and costs are not published in reference to specific projects or works or for sufficiently long time periods.
- The MMA (2007) studies are incomplete and sources are not provided in such a way as to allow for replication or analysis, due to
 - Differences in data sources and methodologies
 - Lack of clarity in the instructions and definitions provided by the Spanish Government
 - Data are presented with a high aggregation level
- “Historical value” approach is still used.

AS A RESULT, IT IS CURRENTLY NOT POSSIBLE TO OBTAIN COMPLETELY ACCURATE ESTIMATES OF IRRIGATION SUBSIDIES

Results

Aggregate support to the irrigation sector in interregional basins

	Regulation and transportation (1) Imputed costs (per cent) Table 4.2	(2) Cost recovery (per cent) Table 4.9	(3) Water distribution subsidy rate (per cent) Table 4.14	(4) Subsidy rate (per cent)*	(5) Actual price (€/m ³) Table 4.12	(6) Full- cost rate (€/m ³)	(7) Subsidy (€/m ³) (6)-(5)	(8) Total subsidy (million Euros) **
Ebro	55.71	72.77	8.21	0.66	0.02	0.05	0.03	119.05
Duero	59.55	58.58	11.52	0.72	0.04	0.12	0.08	188.54
Tajo	82.67	100	2.33	0.17	0.04	0.05	0.01	7.29
Júcar	45.79	57.8	7.21	0.89	0.05	0.32	0.27	429.90
Guadiana	90.89	79	4.04	0.29	0.04	0.05	0.02	11.53
Guadalquivir	90.76	90.45	0.08	0.19	0.08	0.10	0.02	65.95
Segura	100	90.12	5.25	0.09	0.10	0.11	0.01	3.13
							Total	825.38

- €906 million/year, including the interregional basins
- The subsidies for storage and transportation capital infrastructure costs are calculated without consideration for inflation.

Results

A) Subsidies to abstraction, storage and transportation: €49 million/year
Subsidies to capital costs for water regulation: €21 million/year
Tajo-Segura Transfer: €11 million/year
Correction for inflation: €17 million/year

B) Subsidies to capital costs for distribution works through the National Irrigation Plan (PNR) €388 million/year over 8 years.

C) Subsidies to capital costs for distribution works through Royal Decree 287/2006: €234 million/year over 8 years.

A) +B) +C): €671 million/year

D) Cross-subsidies: €240 million/year

A) +B) +C) +D): €911 million/year

Results: Recent MARM* Estimates (2009)

- MMA (2009). Budget analysis and estimate of water provision service costs and revenue in Spain.
 - Based on the budget analyses of RBAs, SEIASAS (state water companies responsible for the development of infrastructure, modernization and the consolidation of irrigated areas), etc.
 - Provisional estimate of the annual subsidization to water storage and transportation services for all users: €680 mill.
 - Annual subsidies to irrigation water distribution €790 mill. (48% subsidy rate).
 - Provisional estimate for subsidies to irrigation €1,120 mill. (55% subsidy rate).
 - Part of the costs computed in the estimates are not related to providing water supply services.

* MARM = Ministry of the Environment and Rural and Marine Affairs

Conclusions

- Irrigation subsidies: € 906-1,120 million (55%)
- Calculations apply to the 1998-2008 period
- Two-thirds of the subsidies correspond to work and programs that finance the modernization of irrigation infrastructure.
- While the subsidies to groundwater capital costs are relatively high, this amount (estimate is €49 million/year) is low compared with subsidies to distribution infrastructure
- The subsidy budgeted under the cost assignment system is estimated at €240 million/year

Recommendations

- The Spanish government has made outstanding efforts in water cost assessment, and is at the forefront of EU countries
- Data quality and accessibility are the main weakness
- Financial information should reference specific works carried out during the project, construction and operations period.

Recommendations

- A common, clear and sound methodology needs to be established for the analysis of water costs and RBA subsidies, including :
 - The information that should be made publicly available
 - An adequate level of disaggregation
 - The creation of databases and software tools that provide access to the information via RBA websites and in more appropriate formats for economic analysis (tables, not PDF)
 - Clear indications regarding the source of the data provided
- The government should ensure greater coordination in the economic and financial information management processes involving RBAs and the regional governments