

## SPAIN

# Spain faces growing desertification

Federal system and agencies struggle to meet water shortages

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A water reservoir in Saint Llorenç de Morunys, Spain, nearly went dry in the summer of 2008. Rationing of water and a growing black market are the outcomes of accelerated climate change and inadequate water management practices in a country that has yet to develop a water conservation culture.

BY VIOLETA RUIZ ALMENDRAL

**D**ESERTIFICATION – THE TRANSFORMATION OF ARABLE LAND into desert – has hit three of the 17 Autonomous Communities that make up Spain, and there are serious water shortages in others. Water, like other natural resources, tends to be unrelated to political boundaries.

Authority over Spain's water – formally a shared competence – has shifted from the centre to the Autonomous Communities, the equivalent of states or provinces, and to municipal authorities in a number of cases. But the system has come under acute stress in the last decade because of severe water shortages.

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“The rain in Spain falls mainly on the plain,” or so the song goes. Well, not anymore. Spain is one of the countries most deeply affected by climate change. Vast areas in the Communities of Murcia, Andalucía and Valencia are slowly but surely becoming desert. There are several reasons for this.

The first, which is quite obvious, is climate change. The average temperature in Spain has increased 2.7 degrees Celsius since 1880, compared with the 1.4 degrees globally recorded for that period. Other estimates include a projection published by the United Nations suggesting that rainfall will fall about 40 per cent by 2070.

Another reason for the growing scarcity of water is the irresponsible use of resources in Spain, including the use of more than 80 per cent of water resources for farming. Irrigation-based farming produces higher yields and is very profitable for farmers (who pay discounted rates for water), so it is very widely practised.



REUTERS/ALBERT GEA

A drought in late 2007 depleted this reservoir north of Barcelona of any trace of water, forcing the city to import from afar. The Spanish Environment Ministry warns that one-third of the country is at risk of becoming a desert.

### Water system stressed

The irrigation systems themselves are under a lot of stress, as most of them are old and inefficient in terms of water usage. Greenpeace, the environmental organization, claims that poor maintenance and the use of very old watering systems account for about 18.5 per cent of the water being lost to leakage.

The geographic distribution of water makes matters more difficult because Spaniards tend to live, and the economy thrives, in water-poor areas, particularly on the coast. The coastal settlements were not agricultural and therefore traditionally not dependent on large quantities of water. However, as coastal cities grew from the boom in tourism and other industries, the demand for water outstripped the supply. Water usage in urban centres now amounts to 14 per cent of total consumption, and tourist areas have seen rapid growth. This aggravates the problem because water is scarcer in areas with the most tourism.

As well, the tourism model that has been fostered since the 1960s, beginning under Franco's dictatorship, is that of Sun and Beach. This included the massive building of water-consuming resorts, including golf courses, part of a booming industry in Spain, swimming pools and artificial lakes. One of the best examples of this is Murcia, a former poor farming region that has become a growing tourism resort centre in the past two decades.

This has clearly contributed to the drying up of land in southern and eastern Spain, and to the need for rationing water in a growing number of areas. Finally, this has also led to water disputes and a booming black market for water. The construction of illegal wells in Spain has become alarming. Although a licence from the Ministry of Mines is required to drill a well, many Spaniards don't bother to get one. Some estimates suggest there are up to 510,000 illegal wells in the country, accounting for up to 45 per cent of total water extraction.

### Aquifers drying up

The sad reality is that the aquifers, underground reservoirs of water, are drying up. The Spanish Environment Ministry estimates that one-third of the country is at risk of becoming a desert because of climate change and poor land use.

Aside from the problem of scarcity, water pollution is also a major issue in Spain, one that has been partially ignored for decades. One cause is the increasing use by farmers of pesticides that are eventually washed away and absorbed by the water systems. Ministry of Environment officials say 33 per cent of Spanish rivers (with a total length of about 25,000 kilometres) are severely contaminated. (see [www.marm.es](http://www.marm.es)).

A third major water problem in Spain, besides scarcity and pollution, is the lack of a "water culture," a sense of its importance and preciousness. There are several reasons for this. An obvious one is the price of water, which is way too low for consumers or farmers to grasp its importance and scarcity. The price does not even cover all costs, which are subsidized by general taxes. Environmental taxes established by municipalities and some Autonomous Communities have not helped much. A major side effect of the price problem is the low level of recycling. Only in seriously water-depleted areas such as the Canary Islands or Ceuta (a province in northern Africa across the Strait of Gibraltar), is water normally recycled by desalinization plants. In 2005, the average household's annual bill for drinking water was nearly US\$300 in France but only US\$224 in Spain.

The crisis over water in Spain has reached the point that it is dramatically reshaping how the distribution of authority over water works in practice among the different levels of government.

Water responsibilities are shared in Spain. Thus far, the machinery of intergovernmental relations has been working well when it comes to water issues. However, it remains to be seen whether it will stand the challenge of further devolution. Right now only six autonomous communities have negotiated an expanded water authority, but others have expressed an interest in taking it on.

### Constitution deals with water

The Spanish Constitution has two provisions dealing with water. The first article, which also refers in general terms to other natural resources, emphasizes the relevance and potential scarcity of water. Article 45.2 specifies that: "Public authorities (at all three orders of government, centre, regions and municipalities) will ensure that all natural resources are managed in a rational manner, in order to protect and improve the quality of life and to defend and protect the environment, based on the essential collective solidarity." As both the central government and the

## Who Controls Water in Spain?

WATER USES	ORDER OF GOVERNMENT RESPONSIBLE		
	CENTRAL	REGIONS	MUNICIPALITIES
AGRICULTURE	LEGISLATES	ADMINISTER (SHARED)	ADMINISTER (SHARED)
TRANSPORTATION	LEGISLATES	ADMINISTER (SHARED)	ADMINISTER (SHARED)
SANITATION	SETS BASIC GUIDELINES	SET DETAILED GUIDELINES	BUILD & RUN SANITATION SYSTEMS
CONSERVATION	SETS BASIC GUIDELINES	SET DETAILED GUIDELINES	ADMINISTER (SHARED)
GROUNDWATER	SETS BASIC GUIDELINES	SET DETAILED GUIDELINES	ESTABLISH & ADMINISTER

regions have authority over the environment, this section can act as an indirect clause that expands authority over water, particularly for the central government. Article 149.1.23 of the Constitution specifies that Madrid has exclusive authority to establish the basic framework for environmental protection.

The second relevant constitutional provision concerns water exclusively. Article 149.1.22 states that the central government has exclusive authority to “legislate, co-ordinate and manage all water resources when it passes through more than one Autonomous Community.”

This section is particularly relevant because most important bodies of water are in more than one Autonomous Community, thereby justifying the role of the central government as the exclusive authority for their management.

Today, all water usage is regulated by two laws of the central government adopted in 2001: (see chart above *Who controls water in Spain?*) one establishes the basic framework for water usage; the other covers the distribution of water for a number of years. This second law, the so-called National Hydrological Plan, provides for the possibility of diverting water from one area to another. Because this can concern more than two different Communities, bitter rows over such transfers arise frequently.

The biggest controversy since the introduction of the National Hydrological Plan concerned the proposed transfer of water from the Ebro basin to agricultural and housing developments on the Mediterranean coast. First there were public demonstrations against the transfer. Then the Aragon Autonomous Community prepared an appeal to argue the constitutionality of the transfer before the Constitutional Court and reported the infringement of community directives before the European Commission. Finally, Aragon made repeated administrative appeals until the plans for the transfer were abandoned in June 2004.

The most recent planned transfer from Aragon to Catalonia, which also created political uproar, was not needed in the end as the intense drought affecting Catalonia ended in May 2008.

### Institutions share responsibility

Historically, water policy in Spain has been based on increasing water resources through building dams and other water reservoirs. Spain ranks fourth in the world in terms of major dams, with about 1,200. Today, all the country’s major rivers have been physically regulated in one way or another. Public intervention in water distribution and management issues has always been very intense.

As water is basically shared, it is an area where intergovernmental relations play a major role. The main consultative body for water is the National Council for Water, created in 1985. This semi-independent body is responsible for water planning and advising on the drafting of the National Hydrological Plan.

As well, there are key intergovernmental Water Management Confederations, which are under the jurisdiction of the central government and are the main bodies responsible for each river basin (including underground waters) that goes beyond a single Autonomous Community. The main demarcations are linked to the major rivers in Spain – the Ebro, Segura, Duero and Guadalquivir – which all flow through more than one Community.

Water basins limited to one Community are managed by the Autonomous Communities, which have taken on this authority in their Statutes of Autonomy (their basic norms that establish which level of authority each region may reach). So far, only six of 17 communities have taken on this authority: Andalucía, Balears, Canarias, Cataluña, Galicia and the Basque Country.

The distribution of authority over water is undergoing substantial changes. There are two strong forces pulling on this issue in opposite directions. One is the tendency toward greater decentralization of authority, fostered by the process of reforming the Statutes of Autonomy. The second, and by far the most difficult challenge Spain faces today, is the need for the central government to co-ordinate an increasingly scarce resource and to improve the sustainable use of water.

