



*"People and Wetlands: The Vital Link"*  
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## Water policy and wetland management: The experience of Spain

### I. Introduction: The inadequacy of traditional policies towards wetlands

1. The fact that biodiversity was the first of the "hidden values" of the wetlands to be "discovered" resulted in orientation of the conservation of wetlands toward: 1) management of the wetland as a reserve or island looking only inward; 2) management of this enclosed space as an ecological reserve for fauna and flora.
2. This approach raises problems because, today, no nature area protected solely for its fauna and flora can be correctly managed from this perspective. External factors completely determine its management. Spain learned this lesson the hard way. An area that is basically or almost exclusively a reserve for biodiversity, the case of Doñana, is threatened by a lack of broader focus as was demonstrated by the accident at Aznalcóllar.
3. In fact it is now fully recognized and supported by the scientific community that the most important aspect of wetland management is management of water resources (water quantity and quality) and that, if these parameters are not taken into account, wetlands can never be adequately managed. Again, Spain learned this the hard way from overexploitation of Tablas de Daimiel.
4. At last, in Spain and the rest of the world, the other "hidden values" and functions of the wetlands are becoming evident: flood control; the treatment, purification and filtering of water; replenishment of aquifers and control of erosion. Awareness is increasing that wetlands can be assigned a high value. In this, Spain is a pioneer, almost by chance. This is not the case in other countries where the social and economic uses of wetlands create stability in traditional subsistence economies, but not economies profiting from high-end tourism, quality urban planning, the awareness of wetlands as cultural heritage and even the use in biotechnology of microorganisms found there.
5. With regard to the revelation of the "hidden values" of wetlands, Spain has also been learning the hard way from the flooding in eastern Spain, the depletion of aquifers, or flooding near Malaga caused by a lack of control of erosion in the Guadalhorce basin. The notion of the purifying function of wetlands -- because of the scarcity of water as a resource -- is long over

due. This may be due in part to the fact that the use of a water basin as a green filter has never been formulated as policy. With regard to this purifying function, the problem is not so much that wetlands have been eliminated or dried up, thus creating lower water quality (a typical situation in countries where water is an abundant resource), but, rather, that nutrients and even toxic pollution have caused saturation and rendered wetlands totally unsuitable as purifiers of water. For example, the Valencia Lagoon is polluted and almost all reservoirs are victims of eutrophy. The salinization of aquifers because of the depletion of freshwater aquifers (Almonte-Marismas or the eastern Coast) represents a very special pollution problem.

6. As for the second consideration, the high value of more modern uses (tourism, biotechnology, etc.), its discovery is in large part the result of unplanned processes.
7. All of this has forced Spain to consider the need to prepare much broader policies for the integration of the planning and management of wetlands into a policy for water and land use much more encompassing than the structure of wetlands policy provided for until now.

## **II. The first phase of planning and management of wetlands (1982-1995)**

8. The first phase of planning for wetlands was the period 1982-1995.

1982 - Spain ratified the Ramsar Convention. Because, according to the Spanish Constitution, treaties immediately apply domestically (they are self-executing), by simple publication of the Ramsar Convention in the official government bulletin, it superseded traditional policies and regulations that rewarded the draining of wetlands. Legislation in force since 1918 attributed ownership of the land to whoever dried a swamp to make unhealthy land fertile agricultural land.

1985 - The Water Law included a policy of conservation of wetlands in water planning and management. Plans for basins must identify wetlands. If they have special ecological value, their management must be transferred to conservation authorities, and all activity that significantly affects a wetland must be subject to an environmental impact study. Drainage is prohibited except for reasons of health or other major public interest. The preparation of a national wetlands inventory was begun. A requirement was created to manage the edges of reservoirs specifically as wetlands with intrinsic value. The restoration of wetlands was promoted, especially if they were degraded to divert water to irrigation programmes that later became unprofitable.

1986 - The entry of Spain into the European Union made necessary the immediate application of the Directive on Birds. All Ramsar sites became Areas for the Special Protection of Birds (ZEPAs), and European law became applicable.

1988 - The Coastal Law included saline wetlands in the government domain. Contrary to the 1985 Water Law, the Coastal Law does not contain a specific management model for coastal wetlands.

1989 - The Spanish Conservation Law (Law for Protected Nature Areas and Wild Fauna and Flora) included wetlands among protected habitats and required that water planning include wetland protection. It also reimposed the need to prepare a national wetlands inventory. This law is the framework for considerable later (1990-1995) legislation of the autonomous communities. (Spain has an almost federal system of government.) The autonomous communities made specific laws for wetlands (Madrid) and river ecosystems (Castilla y León) or produced a specific regulation for wetlands in their general conservation laws (Castilla y León, Catalonia, Navarra and Valencia). The autonomous legislation views wetlands as ecological spaces to be conserved because of their biodiversity. The legislation of Navarra and Valencia, which includes regulations on land use planning by preventing the urbanization of wetlands, is an exception.

9. **Results:** During this first phase, enormous progress was made, to the extent that today it is one of the most advanced systems of wetland policy among the Mediterranean countries of the European Union. (See MedWet 1, Mediterranean Wetlands, Administrative and Legal Framework, 1996)
  - a) Its outstanding successes were: 1) the identification and gradual protection of the most important wetlands as areas or reserves by the central government and the autonomous communities, 2) sporadic legal protection, 3) channelling of assistance from European funds toward their preservation (agriculture assistance/LIFE programmes), 4) the first instance of the inclusion of wetlands in basin water management and in coastal management, 5) inclusion of 38 wetlands in the Ramsar List, 6) the application of specific cases of European legislation. (Spain was the second country -- after Germany -- to be condemned by the European Community Court of Justice for its poor management of wetlands.)
  - b) Nonetheless, an overall policy was not established.
    - i) The legislation and officials responsible for the application of the Water Law did not interact with those responsible for wetland management.
    - ii) Two national inventories were prepared at the same time but independently, creating problems for the administration. Only recently were they integrated into a single inventory applying a methodology common to the Mediterranean countries (MedWet programme).
    - iii) Water cycles and the hydrological functions of wetlands continue to be unregulated, except in exceptional cases. From the perspective of wetlands and integrated land planning, there is still an artificial management of rivers. Other uses such as agriculture (land tenure reform, irrigation), urban and industrial development, and construction of infrastructure lead to the drying of wetlands and prioritize water for these uses. To replenish water, the natural ecological flow is changed, modifying water quality).

- c) Several specific cases have set off an alarm: 1) the cost of the restoration of Santoña (required by European law); 2) the disaster at Aznalcóllar, which almost finished the largest European wetland (Doñana); 3) continued urbanization (pressure in Murcia, the Balearic Islands, Valencia); 4) realization that the Water Law is not being respected (only three basin plans have policies -- and very poor policies at that -- for the conservation and management of wetlands); 5) isolation from Mediterranean regional policy (Spain does not participate in MedWet 2); 6) protection from erosion and flooding (forest hydrology) is totally separate from water management in the basins; 7) the hydrographic confederations continue to develop infrastructure primarily for water use.
10. In light of this and the achievements of the period 1982-1995, the need to integrate water and land policy with the management of wetlands was again raised in 1998.

### **III. Second phase: MedWet Com; Spanish biodiversity strategy, wetlands sectorial plan, forestry strategy and white paper on water**

11. The need to take a decisive step toward more integrated policies is expressed in four medium- and long-term strategic decisions and reorientation of short-term projects.

#### **Four Strategic Decisions**

12. The first decision was to reintegrate Spain into the institutional framework for formulation of Mediterranean wetland policy. Spain encouraged the process of regionalization of Ramsar and at the Conference of Valencia in February 1999 offered to create a private centre (SEHUMED) as support for the Secretariat of the new regional system (MedWetCom).
13. The other three decisions constitute an enormous effort to modernize administrative structures.
14. The Spanish biodiversity strategy, agreed upon among the central government, the autonomous communities, local governments and the public (NGOs, research centres, economic sectors, labour unions and special interest groups), established the basis for the need to integrate planning, wetlands management and land use with water use planning. It created a special sectorial plan for wetlands, which analyzes how to formulate a policy for wetlands that does not neglect the hidden values or integration with water and land use management. At the same time, it reinforces traditional considerations (conservation of biodiversity) and opens a way for new profitable uses that will lead the market economy to protect wetlands.
15. The sectorial plan, a component of biodiversity strategy just as Ramsar can be considered a subsector of the Biodiversity Convention of Rio, has almost been completed, and only its formal approval at the beginning of June by the National Commission for the Conservation of Nature is pending. This is the central component of this new policy whose details are quite complex. Suffice it to say that there is almost no aspect of wetland management that cannot be clearly defined and managed. Management is limited only by what it realistically leaves for later development: 1) integrated planning for the coastal shore, 2) the planning and management of rivers that are not wetlands in the strict sense as river ecosystems, and 3) the planning of primarily agriculture areas (floodable pastures).

16. The sectorial plan is organized around ten important general objectives:
  - 1) Increased knowledge at all levels about wetlands.
  - 2) Promotion of the general awareness of the values and functions of wetlands.
  - 3) Provision of legal protection for all wetlands and reinforcement of their legal framework.
  - 4) Reinforcement of the capacity of institutions, organizations and local institutions to promote conservation and the wise use of wetlands.
  - 5) Assurance that all wetlands are managed effectively and integrally, especially those that are legally protected.
  - 6) Reinforcement of cooperation among institutions, agencies and local institutions, both governmental and non-governmental, including local communities and the private sector.
  - 7) Mobilization of the financial assistance available for the conservation and wise use of wetlands, ensuring that programmes agree with the objectives of the strategic plan.
  - 8) Fulfilment by Spain of its international obligations in relation to conventions, agreements, European Directives and Policies related to wetlands and promotion of international cooperation.
  - 9) Promotion of adherence to this strategic plan by a maximum of institutions, agencies and local institutions, both public and private, as well as a commitment to its effective application.
  - 10) Development, application, follow-up and evaluation of the strategic plan.
  
17. At the same time and even though the central government and the autonomous communities may first finish the process, the forestry strategy, approved on 17 March 1999, implemented an integrated policy for rural areas not strictly agricultural (scrub forest, forest and wetlands). Forest hydrology, which in the Mediterranean countries is the basic component for the recovery of the vegetative cover that prevents erosion and acts as a green filter along rivers, is being integrated into water management. The hydrographic confederations (agencies bringing together parties for the management of wetlands) will begin to create water and forestry services that manage rivers, wetlands and reservoirs as natural ecosystems, ensuring the establishment of a policy of management of rivers and soil cover in the water basins.
  
18. Finally, the key to the success of this system is the new integrated water policy that will be implemented in 1999-2000. A white paper on water, a true pre-programme for the management framework for this resource, institutes public debate, beginning in December 1999, on all possible management aspects of this resource. It is based on the wetlands sectorial plan and forest hydrology of the forest strategy in order that water management authorities become participants in the integrated policy for wetlands and the prevention of erosion.
  
19. The white paper proposes mechanisms for surveying, studying and ensuring a flow of water to the main wetland ecosystems. It proposes mechanisms for controlling pollution (especially diffused pollution), integrates wetlands into the systems for controlling risks and promotes international cooperation.

20. This breaks the vicious circle of considering wetlands to be a question of conservation of biodiversity and, therefore, the responsibility of another administrative agency (nature conservation), distinct from water management.

### **The application of integrated management to concrete short-term projects**

21. Simultaneously to this process of integrating planning measures, steps at the micro level are being reoriented.
22. Let's look at some projects that are an example of this new policy.

### **Flood control**

23. The new national plan for forestry hydrology concentrates all of the steps to take in basins and sub-basins to prevent erosion. Both the autonomous communities and the central government (Dirección General de Conservación de la Naturaleza and the hydrographic confederations) intend to promote projects, some of which have been waiting for centuries. This new policy attempts to prevent erosion and desertification through the construction of water infrastructure, reforestation and improvement of vegetative cover throughout a basin. An experimental plan is already being carried out in Andalusia in areas where there is more than 200 tons per hectare per year of soil loss.
24. In addition, the task of planning for all of the coast was begun so that beaches, estuaries and alluvial plains are not flooded along the coast. This plan, the "Atlas de Riesgo de Inundación del Litoral Español," was unveiled in Santander on 25 April 1999.

### **Prevention of the salinization of aquifers**

25. This project seeks to protect the freshwater wetlands immediately inside the line of coastal dunes along all of the eastern coast. The La Safor project and the possible purchase by the government of wetlands such as La Marjal de Peñíscola or the Salinas de Aguamar are in line with this integrated policy. There is still a need for coordination: for example, the unilateral action of the Confederation in the Valencia Lagoon can cause problems.

### **Water purification**

26. The forestry plan for Navarra and the reforestation of river banks in Castilla y León seek to revive the ecology of all rivers in the water basins of these autonomous communities. Navarra intends to implement a plan for green filters in all of the undergrowth along river banks, and Castilla y León intends to revive river banks using reforestation and large investments.

### **Risk maps**

27. The experience of Aznalcóllar has created a need to establish a risk-management policy based on the placing of possible risks on a map. The biodiversity strategy provides for this approach, and the hydrographic confederations have begun to map these situations, identifying existing mining

dams in all of Spain. For the coast, the project of preparing the risk atlas already mentioned is under way.

### **Urban and industrial activities**

28. The wetland sectorial plan plays an important role because statistically both of these activities continue to result in the disappearance of wetlands. The plan consists in preventing urbanization through legal steps such as declaring the land in the wetland to be non-constructible with special protection. Simultaneously, a wetland is given value through techniques of urban planning that increase the market value of the surrounding properties because of: tourist potential (the example of the Sa Lagoon on Majorca), links to cultural heritage (the example of the Marjal de Peñíscola or Salinas de Ibiza), simply because of their value as real estate (Lo Poyo in Murcia), the existence of industry and services tied to the value of real estate (Parque Tecnológico de Andalusia) or for what they are (concessions at Pharma Mar).

### **Large water regeneration projects**

29. Finally, a new water policy has made it possible to raise the need for macro measures promoting the creation of infrastructure to revive large extensions of wetland or groups of wetlands.
30. Five large projects merit mention: 1) Doñana 2005, which will restore the former flow of surface water in the Doñana National Park, taking advantage of the work which has been required to prevent the risk of pollution by mud and investing in restoring the former water flow that had gradually been lost through changes in use around Doñana; 2) regeneration of Santander Bay, which will return to the bay and its coastal wetlands the water quality lost over time; 3) revival of the Santoña system, imposed by a decision of the European Community Court of Justice -- the central government has gone further by purchasing additional land through the Dirección General de Costas; 4) drafting of a management plan for the Valencia Lagoon, which intends to restore the former water quality to its waters and convert them into a large space surrounding the urban core and closely linked to cultural traditions; and 5) preparation of a recovery plan for the Tagus River where it passes the city of Toledo. (The plan has already been almost carried out and returns the river to the city, as was the case until 1951, integrating the meanders into the life of the historic city core, which had been lost owing to the extremely low quality of the waters.)

### **International projects**

31. Finally, it must be pointed out that this new integrated policy has its counterpart in the foreign policy of Spain, which strongly supports the biodiversity strategy, the wetlands sectorial plan, and the Araucaria Programme of Cooperation with Latin America in the environmental field.
32. Two very recent projects are examples of this new policy: restoration of L'Oued El Khairat in Tunisia and recovery of Lake El Jocotal in El Salvador. Both wetlands were facing very serious risks of suffering irreversible deterioration.