

## Shared water resources and Sovereignty in Europe and the Mediterranean

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### Introduction

There is a severe water shortage in much of Europe and the Mediterranean region caused by chronic mismanagement of resources, political opportunism, war and drought. At the heart of the conflicts which characterise water resource allocation is governments' insistence on cutting up the water cycle into tiny conceptual or managerial parts. Water management is considered separately from land management, groundwater from surface water, human use from ecosystems and so on. In Greece no less than seven ministries govern the use and management of water. There is little or no co-ordination between their often competing objectives, a pattern repeated to varying degrees in most countries.

The lack of horizontal co-ordination between user interests is mirrored in a similar lack of vertical collaboration between national and regional administrations over shared objectives. When water resources are shared between sovereign states, problems of water allocation, use, quality and conservation are exacerbated immeasurably, occasionally spilling over into conflicts in which sovereignty itself is an issue.

### The Danube I

In 1992 Slovakia and Hungary were the focus of frantic international diplomacy. For years they had been close allies, and shared a vision of mutual co-operation and development. But in the Spring of that year Hungary unilaterally revoked a long-standing agreement over a joint hydroelectric scheme on the Danube, the river which forms the border between the two countries. Tension mounted throughout the long, hot summer as Slovakia contemplated the cost of completing a huge half-built dam alone. On the 19 October the two countries publicly accused each other of massing troops at their common border. Horrified at the suddenness of the dispute, and fearing an escalation into open conflict, Germany's Foreign

Minister pleaded with the two sides not to make any rash moves.

In the propaganda battle which followed Hungary accused Slovakia of attempting to redraw the border between the two countries. On October 20 protesters marched in Bratislava, the capital of Slovakia, denouncing Hungary's "*fascist tendencies*". Near the border, 700,000 people, citizens of Slovakia, yet ethnically Hungarian, began to fear for their safety. They accused their government of wanting to drive them over the border. Their government accused them of fomenting internal conflict. Hungary's Foreign Ministry spokesman described the situation as "*volatile*", but in a bid to defuse the tension, pledged his country to seeking a diplomatic solution and ruled out military action.

However two days later the diversion of the river had begun. Hungary described this as an act of aggression. The Conference on Security and Co-operation in Europe invoked its emergency procedures, designed to be brought in at the point when war seems otherwise inevitable....

The Danube is a river rich in history and symbolism for Europe, spanning much of the continent from West to East, across eight national boundaries and transcending the old ideologies which dominated most of twentieth century thinking. It rises high in the Alps, pouring out across Bavaria and onto the floodplain of eastern Austria near Vienna. The sudden drop slows the river down and it sheds much of the sediment load into an inland delta, dividing the river at Bratislava, capital of Slovakia.

The original plan, in 1977, was to divert part of the river along a new concrete channel, feeding the water to two hydroelectric dams, at Gabčíkovo in Slovakia and Nagymaros in Hungary. Austria was to foot much of the bill and buy much of the electricity. Socialist prestige, and local political reputations, were still being built on the strength of massive, high-profile engineering schemes which symbolised man's dominion over nature. It is

perhaps not too surprising that by 1989 it was the growing environmental movement which formed a principal body of opposition to the old regimes.

In Czechoslovakia the new government found itself torn between the environmental concerns which helped bring it to power and the reality of facing up to a three-quarters built super-dam on which a billion dollars had already been spent. Vaclav Havel's opposition to the dams had earned him the support of millions but in power, he struggled to justify keeping the project alive. While the Federal government pondered, the largely autonomous - and now independent - Republic of Slovakia had no such dilemma.

Hungary claimed the project would pollute drinking water for millions of people on both sides of the border. They feared it would dry up part of the Danube and destroy economically important wetlands along with 28,000 acres of forest.

Budapest radio reported water shortages in some parts of the city. Hungary's capital receives much of its drinking water from wells bordering the river. It was the first sign of the damage many had foreseen.

However, following intense diplomatic activity involving most of western Europe's leaders, Czechoslovakia and Hungary finally initialed an agreement which limited the damming work pending further studies. An international team of experts was set up to assess the feasibility of removing the rough and ready diversionary dam and restore the status quo. In the meantime, the International Court of Justice in the Hague would adjudicate on the matter, and the two sides would accept its arbitration as binding.

Perhaps the most shocking aspect of the project is that two countries came to the brink of war over a scheme for which no substantial, detailed assessment of its impact - economic and environmental, positive and negative - had been made.

In other parts of the world, enthusiasm for large dams had been diminishing steadily for more than a decade. The balance between their benefits and their true costs have undergone a radical reassessment. Yet the Gabcikovo story, which is yet to conclude, is not unique in modern Europe.

## Greece and the "EC's Gabcikovo"

In the Greek backwater region of Aitolokanarnia a sovereignty issue of a different kind is brewing. Of Greece's 51 administrative regions, this is the third poorest in terms of GDP. However, it is regarded by the farmers in the much richer but relatively dry plain of Thessaly, as a region rich in the one resource they crave, water.

The River Acheloos is Greece's longest river and flows north-south down the west side of the country. It meets the Mediterranean Sea in Aitolokanarnia, at the wetlands of Mesolongi. Since the 1920s there has been a vague plan to divert Acheloos water from west to east, despite the apparently insurmountable barrier of the Pindos range. A tunnel would be blasted through the mountains, and some of the Acheloos' flow diverted into the Pinios, Thessaly's largest river. This, it was claimed, would not only provide irrigation water for some 3,500 square kilometres of the Thessaly plain, but could be used to drive hydroelectric turbines as well.

The cost is put at 320 million ECU. The Greek State would provide just a quarter of that sum initially, the rest coming from European Community development grants and loans. To start with, in 1985, the Community granted some 22 billion drachma for a hydroelectric dam on the lower part of the river at Stratos. Another dam was built at nearby Kastraki.

Almost immediately serious downstream problems started to appear. These included the disrupted migration of commercial and other fish through the lagoons and along the river course. A reduction by 45 percent in sediment carried to the Acheloos delta has been measured. As a result its sandbanks and shallow lagoons have become unstable and the coastline left at the mercy of the erosive power of the sea. Already the lower water strata of the river have grown salty, poisoning the water a kilometre upstream.

There are several hundred fishermen in the Mesolonghi wetlands. For centuries they and their ancestors have exploited the great productivity of the coastal lagoons. An increase in the concentration of pollutants and increased salinity levels is certain, with possibly catastrophic consequences for delta fisheries.

In the lower Acheloos basin there are some 26,000 hectares of land irrigated by the river or the aquifers it serves. There are plans to expand the area covered, yet when the full diversion is complete it is unlikely there will be enough fresh water even for the existing operation.

In June of this year plans were submitted to the EC for the completion of the programme, involving the diversion of two-thirds of the river flow. The Thessaly plain and metropolitan Athens are to share the 1 billion cubic metres of water which will be removed from the river's natural course each year.

One of the bizarre consequences of this is that the Stratos dam, built with Community funds in the earlier phase of the Acheloos programme, will receive less water, and will become uneconomic. The diversion scheme envisages the construction of two new hydroelectric dams between the diversion point itself and the Pinios river, into which the diverted water is to flow. A secret document produced by the state-owned Public Power Corporation of Greece shows that even taking into account the new dams less power will be produced in Greece overall.

Thus one of the poorest regions of Greece is to see its water resources given to an already relatively prosperous region. This has caused an extraordinary redrawing of the party political boundaries in Greece. There is now a distinct cross-party Thessaly lobby, pushing for the diversion, and an anti-diversion Aitolokanarnia group. The big socialist and conservative parties have seen these regional groupings achieve far greater cohesion across the ideological divide than had ever achieved internally within the parties themselves.

As we go to press, Constantine Mitsotakis' fragile hold on party unity has collapsed and a general election is scheduled for October 10. Early electioneering saw him making contradictory promises to the people of the two affected regions.

In Aitolokanarnia itself, the local communities have become acutely aware of the reality that central planning, which for their purposes refers as much to Brussels as it does to Athens, runs counter to their traditional experience of sustainable husbanding of natural resources based on local co-operation and control. They, too, regard the Acheloos question as an issue of sovereignty. For

them, the subsidiarity debate may soon focus on questions of self-determination and autonomy.

### Where the river meets the sea

Participants at a workshop on Mediterranean wetlands and river basin management in November 1992 heard of a plan in Egypt to ensure that "*not a drop of Nile water be wasted by allowing it to reach the sea*". The effect of river management downstream within a catchment is only now being understood, and here was a stark reminder that the effects may extend far beyond a rivers' mouth.

In fact, when the Aswan high dam was built the impact on the south eastern sector of the Mediterranean was almost immediate, with a noticeable drop in nutrient and sediment inputs at the river mouth. The new plan implies eliminating a third component of the inshore ecosystem: fresh water.

The effect of this on an already relatively impoverished fishery will be difficult to assess. However, a reduction by some twenty percent of the freshwater input in the Mediterranean sea may have unforeseen consequences over a huge area. Boundary and sovereignty issues relating to river basins themselves may be highly tricky, but they are simple to define. This is not remotely true of cases where a country's management of a major river may affect international marine waters.

### Danube II

On January 26 1993 the 30,000-ton Yugoslav tugboat Bihac made port in Serbia with 6,000 tons of Ukrainian oil in tow. Her captain had dodged UN sanctions by threatening to discharge his cargo into the Danube unless Romania and Bulgaria agreed to call off their boats.

The next day four more Serbian tugs hauled shipments totalling 40,000 tons out of the Black Sea into Romanian territory. In Sofia and Bucharest messages had arrived from the United Nations calling upon Bulgaria and Romania to honour the sanctions agreement. A UN Sanctions Assistance Mission was set up and the United States sent three patrol boats to help enforce the blockade.

The British embassy in Bucharest quickly assessed that there was a risk of a serious pollution incident, but that there was little or no equipment available to deal with a potential spill, nor any contingency measures. Romania has, however, appealed to the EC to provide equipment. In the meantime, the destruction of factories and sewage works in the Danube basin in Croatia has threatened the Danube Delta and Black Sea fisheries, according to the European Bank for Reconstruction and Development.

The consequences of a major oil spill in the river would be unthinkable. Several internationally important wetlands exist on the lower Danube any sites downstream of a spill would be at risk, along with the fish, birds and human communities dependent on them.

### Danube III

In February 1991, the eight Danubian States met to develop a Danube Basin Ecological Convention, to be applied to the whole of the Danube catchment area including underground waters.

The purpose of the draft is essentially conservation. Parties would set forth the objective that human actions in the Danube basin *"will not endanger human health and safety, air, water, soil, climate, flora, fauna and living communities, including their biological diversity and possible role as bioindicators, as well as other interactions..."* and to *"restore and maintain the quality of the environment at an acceptable quality"*.

The draft provides, that *"needs beyond ecological ones cannot be regarded as essential until they can be satisfied by the best available technology without jeopardising the satisfaction of ecological needs"* and that *"in the protection and use of the elements of the environment the Parties shall be governed by the holistic approach"*.

To achieve the purposes of the Convention, the Parties would adopt related agreements on the regulation of many activities, including agriculture, forestry, industry, infrastructures and transport as well as co-operation in basic research, environmental monitoring and environmental impact assessments. To implement the Convention, Parties would have an obligation to conclude bilateral or multilateral agreements

relating to subregions forming single ecological units, *"especially with a view to protecting nature and enhancing the rational use of natural resources"*.

A particularly innovative article in a water basin treaty requires Parties, as appropriate, to establish protected areas, including transboundary protected areas, for the purpose of safeguarding the processes essential to the functioning of the Danube basin ecosystems, as well as the biodiversity of these ecosystems.

If the Convention is ever adopted in its present form, it will be a unique example of the ecosystems approach being applied to a whole river basin and to all activities that may affect ecological values in the region.

It is clear, however, that before this proposed treaty can be officially signed, the dispute between Hungary and Slovakia over the Gabčíkovo power plant will have to be resolved. Furthermore, the situation in the former Yugoslavia is clearly an insurmountable block to further progress at present.

In any case, such agreements will need continuous management by a body such as a basin management authority. It may be in the Iberian peninsula that the opportunity to establish comprehensive communal management across national boundaries will first arise.

### Iberian rivers

Three quarters of the water put to service by man in Europe is for agriculture. A report released in November 1992 by the European Commission indicated that of this, over half has disappeared - leaked away or evaporated - before it reaches the fields. In many areas, where modern irrigation technology has yet to arrive, little more than half the water which is then sprayed onto the crops is taken up by the plants.

Spain's recently-published national hydrological plan envisages nearly a million hectares of new irrigation following the creation of - as the advertising slogans describe it - a single river basin within Spain. This entails radical management of the main Spanish river basins, with over a hundred new dams and major water transfer scheme

envisaged to meet long and short term regional water shortages.

However, there is now serious doubt about the sustainability of many Spanish irrigation schemes. In Aragon, an early scheme in the Monegros area resulted in the eventual salinisation of some 38,000 hectares, of which 7,000 have been completely abandoned. Inefficient schemes begun in the 1940s caused waterlogging of the soil, drawing salty groundwater up through the soil as evaporation concentrated salt levels at the surface. A new scheme, Monegros II, has been started, which has the added disadvantage of being targeted at land even less suitable for irrigation. Bankruptcy and abandonment is an increasingly common problem in areas where the returns on the investment needed at farm level have not met the promoters' promises.

At least Spain has the advantage, however, of being an upper basin state. Neighbouring Portugal must observe the headlong rush to irrigation over the border in the knowledge that all her major rivers rise in Spain. The main Spanish-Portuguese rivers are the Guadiana, the Tejo/Tajo, the Douro/Duero and the Minho/Miño. All have a drastically reduced flow by the time they cross the Portuguese border, due to abstraction by Spain to meet hydro-electric, agricultural and urban demands. Development plans for these rivers cover the gamut of international river basin concerns.

International responsibilities may fall into three general categories: the responsibilities of one state for the water which flows into another (we could call these downstream responsibilities); the upstream responsibilities of one country which might, for example, build a reservoir whose flood may extend upstream into a neighbouring state, or prevent upstream fish migration; and the cross-stream responsibilities of countries whose common border is formed by a river, or which share underground reserves. Often one river basin entails all three, as is the case with the Guadiana.

Only the Guadiana is the subject of any agreement between Spain and Portugal. This agreement concerns essentially the sharing of resources in terms of the quantity of water leaving Spain which is needed by Portugal to run the proposed Alqueva dam and for other purposes. It does not explicitly cover water quality, nor the sharing of water resources between other needs such as nature

conservation. Nor does it consider the exploitation of other resources in the basin, such as fish or minerals.

As two states politically united by their European Community membership, Spain and Portugal should be in a position to benefit from the massive structural funds available to them to establish communal water management. At present, however, no comprehensive plan exists. Instead the development funds are being directed at the very projects - irrigation, dam-building and water transfers - most likely to jeopardise future accords over the four big Iberian rivers.

### **Putting international basin planning into practice**

The Espoo Convention (1991) requires the assessment of environmental impacts of projects whose effects may be of a cross-border nature. This would undoubtedly include impacts carried across borders by international river systems.

The Helsinki Convention (1992) concerns the pollution and use of international water courses and lakes and provides a framework for concluding agreements between states over the use of common water courses.

Agreements between riparian states can be concluded at any time, and do not require an international legal framework. However, these conventions exist to promote such collaboration and so it is convenient to consider a joint approach to bringing such agreements about.

A joint conference, for example, could establish some general terms of reference of agreements between Parties sharing common watercourses, determining in particular those parameters which should be included in the interest of wise use and conservation of resources. Here, too, the Ramsar Convention on the conservation of wetlands, which may include whole river systems, should seek collaboration. The three Secretariats could collaborate on drafting the general terms mentioned above, as well as working towards establishing a best practice methodology for cross-border impact assessments.

Fundamentally, these agreements must set up unitary basin management Commissions which

unite all the interests concerned among all the countries concerned. The agreement should give the Commission responsibility over:

- determining the quantity of water destined for each use;
- water quality;
- managing other resources:
  - fisheries, wildlife, floodplains and the functions and values of wetlands
  - minerals (gravel, sand)

For such a Commission to operate effectively, data-gathering is fundamental, since the agreement depends on understanding the functioning of the river system, as well as patterns of supply and demand, seasonal and annual variations, effects of climatic variations etc. This is highly complex, is usually inadequate at national level, and practically unknown at international level. Data needs should be identified and fulfilled at an early stage in the operation of agreements. The Commission must ensure the accuracy, completeness and objectivity of these technical inputs.

## Conclusion

There can be no doubt that in Europe and the Mediterranean region water will increasingly be the source of disagreement, if not serious conflict, between sovereign states. It is reasonable to suppose that the conservation of riverine and wetland economic functions and their associated ecosystems will continue to suffer.

There will be no easy solutions to this critical problem, but insofar as a solution can be found, it lies in the ability and will of countries to use their shared water resources wisely. This must mean concluding binding agreements over basins for which there is joint responsibility. It is in the interests of the economic well-being, natural heritage and political stability of the region that the countries concerned take immediate steps towards comprehensive communal management of their shared catchments.

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**Figure 1: A Gaza Mini-State**

