

The Hydropolitics of the Mediterranean

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For some years now the question of water in the world and around the Mediterranean has been emerging as one of the most urgent. Its complete politicisation has been based on two leading “arguments,” considered by the great majority of observers as “obvious”: 1) water is rare and running out, and 2) for that reason the world, beginning with the Middle East, is facing water wars on a military scale. Yet a dispassionate study of the geopolitical and hydro-ecological maps shows very clearly that these prevailing opinions, which over-simplify the extremely complex question of water, lack in rigour in their analysis and suffer from contradictions in the solutions proposed. This article attempts a new approach to the problem of water, taking as its example the Mediterranean, which offers a great hydropolitical diversity: abundance and “scarcity,” poverty and wealth, wars and peace, stability and instabilities, etc.

If one glances at the general map of the Mediterranean two colours stand out, besides the dark blue of the sea: the green dominating the northern and western shores indicating abundance of water, and the pale yellow which give the southern and eastern coast an appearance of emptiness equivalent to scarcity of water. If we change scales and zoom in on this or that region around the common sea, we rapidly realise that the dominant colours conceal considerable local diversities. Even so we may assume, for the purposes of geopolitical or rather hydropolitical analysis, the first impression, with that demarcation line between a “humid” north and an arid south; this can be seen clearly enough in the following table, which gives for each Mediterranean country the average annual availability of water per person, including all forms of consumption.

TABLE 21 Renewable Water Resources per Inhabitant and per Year (FAO Estimates in 2005 and 2007)

COUNTRY	m ³ /p/year
Greece	6,764
France	3,355
Italy	3,341
Turkey	2,913
Spain	2,707
Syria	1,408
Lebanon	1,172
Albania	12,950
Cyprus	959
Morocco	919
Egypt	779
Tunisia	458
Algeria	355
Israel	250
Palestine	250
Malta	127
Libya	104
Average Med	2,410

Source: Aquastat, FAO

These averages of water availability are open to objection for at least two good reasons: a) a method of calculation which lumps together the annual needs of all societies irrespective of their degrees of “development,” the importance of irrigation or rain-supplied agriculture and of tourism and modes of consumption by the general public; b) averages which give a homogenised arithmetical table taking no account of local inequalities in access to water and; c) averages which only take account of so-called renewable resources and systematically adopt the data provided by local governments although, as it is well known, for technical or more often political reasons the figures do not always correspond to reality. No state obliged to share its resources with neighbours has an interest in making public the true figures. Here we have the old strat-

egy of negotiations and trading in which numerous Mediterranean countries still engage.

Even so, however the figures may have been arrived at, this table and the known figures as a whole have the advantage of giving an overall view of the imbalances in the geographical distribution of resources. It makes clear a first opposition between a north living in hydraulic comfort and a south less comfortably endowed and threatened with a hydraulic crisis which some regard as imminent for certain countries of this common sea. Among the different specialists, Jacques Bethmont establishes the following balance sheet. On the northern shore, ten countries (counting the states emerging from the break-up of Yugoslavia) have at their disposal 1,060 km³ within their frontiers and a further 546 km³ in the Mediterranean Basin area for a total population of 187 million inhabitants, whose demographic dynamism, with the exception of Turkey, is weak. On the south shore (the shore including Syria, Lebanon and Israel), eight countries have 154 km³ for a total population of 170 million inhabitants, which is set to double in something like thirty years. Expressed in annual average availability per person, these overall figures reveal even more flagrant differences which are summed up in the following table.

TABLE 22			
Total Availability in Water and Populations			
Mediterranean	Population in millions	Total availability in billions of m ³ /year	In m ³ /per/year
North Mediterranean	187	1,606	8,588.24
South Mediterranean	170	154	905.88

The hydraulic stress threshold is conventionally placed at 500 m³ per person per year. Some Mediterranean countries are distinguished by an availability below that threshold. According to the FAO figures (cf. Table 21) this is the case of Tunisia, Algeria, Israel, occupied Palestine and Libya on the southern shore, together with Malta, the only affected country of the northern shore.

Water-Supply Inequalities, Economic Inequalities and Social Inequalities

On this unequal distribution of water resources in the Mediterranean area can be superimposed almost exactly an economic and social map. There is obviously no need of figures to draw the general map of "development" in the Mediterranean. The dividing line

begins at the level of the Straits of Gibraltar and ends on the frontier between Turkey and Syria. Although one might hesitate a little with Malta, which forms part of Europe, with Libya and, less markedly, with Algeria, which enjoy considerable oil revenues, and also with Israel, which is structurally linked to the Western economies, it is possible to adopt a simplified image of a rich north and a poor south. But just as with water, these images are only valid on that geographical scale. Just as one knows that the south of Spain experiences severe water-supply difficulties, one also knows that pockets of poverty are not lacking on the northern shore, notably in Turkey.

The southern economies remain generally dependent on the North, and the inequality in water-supply is such that it does not remedy the situation. But among the diverse causes of that dependence and producing its most dramatic dimension is undoubtedly the agricultural and food-producing dependence directly linked to the availability and of course the management of water resources. At the present time the south produces no more than 50% on average of its cereal requirements. The remainder is made up by imports originating from the north. Algeria imports more than 75% of its requirements and Egypt is at about 55% of its requirements. The only country of the North that shows a strong dependence is Malta, which produces less than 10% of its cereal requirements, but as in other fields Malta benefits from its status as a member of Europe. Paradoxically, we have had to wait until the current food crisis to realise the dangers and risks caused in more or less dramatic degree by agricultural policies which abandon the principle of "sovereignty" in food supply.

Nevertheless, and contrary to a rather widespread image, the farmers of the south are not lazier or more inactive than those of the north, rather the opposite. In Egypt for example, more than 3.6 million farmers share some 3.5 to 4 million hectares that are wholly irrigated. On the same plots they gather up to 3 harvests a year! The yields, notably of wheat and rice, are among the highest in the world. But the situation of the agricultural sector in Egypt is summed up in the paradox which one finds in many regions of the Third World: an agriculture among the most developed in the world carried on by a peasantry among the poorest in the world. Here the percentage of peasants below the poverty threshold is estimated at between 50 and 80% according to the sources.

While it is hard to find comparable development of agriculture elsewhere in the southern and eastern

part of the Mediterranean, one may assume that the effort and involvement of the peasantry is fairly comparable from one country to another. Why then are these farmers not rewarded by high returns for their work and their function as agriculturalists? The question of access to land and to water, which is far from being assured, undoubtedly arises. Where it does not depend on the will of the heavens, in areas of irrigated agriculture, the provision of irrigation water is increasingly subjected to financial conditions by more or less disguised systems of rate-setting, under pretext of keeping down consumption and "squandering." This constitutes a higher and higher cost, forcing some to reduce their agricultural labour and look for supplementary income outside their lands.

In addition, the agrarian counter-reforms adopted in recent years in some countries have made the position of small farmers even more fragile by liberalising the land markets both for sale/purchase and for leasing, putting an end to the automatic renewal of contracts and their transmission by inheritance from father to son. The clearest case is that of the agrarian reform adopted in 1992 by Egypt (law 96/92), which has put a complete end to the guarantees established by the socialist regime of Nasser. Between the application of that reform in 1997 and 2000, about a million former peasant tenants have lost their lands. Nowadays leases, whose price has multiplied sixfold on average and sometimes eightfold, are granted on a yearly and sometimes on a seasonal basis. In these conditions, the peasants, whose position is thus weakened, no longer make investments and only give the land the minimum fertilisation and work, following the logic of "maximising profits and reducing expenses." The other element that constitutes the fundamental difference between the farmers of the Mediterranean area is access to information, credit facilities, insurance and above all to local, national and international markets. The farmers of the south work primarily for local markets, and at best for national ones. The European markets by contrast are in general quite hermetically closed to them. Already they have no access to the necessary information on these markets and even less to the different networks of international trade. But what is even more serious is that the countries of the north, which flood the south with their food exports, close their own markets by complex tariff mechanisms with the aim of protecting their farmers and agricultural producers.

It is true that certain big investors of the south and certain large agricultural and food-producing com-

panies own large modern agricultural estates, for the most part entirely irrigated. One finds them more or less everywhere on the southern shore from the region of Souss in the south of Morocco to the Jordan Valley, passing through Tunisia's Cape Bon and the Nile Valley. They most commonly specialise in fruit and vegetables out of season and the near totality of their production is destined for export, especially to the European markets. By a complete paradox, on this southern and eastern shore of the Mediterranean which is often described as suffering a chronic shortage of water, certain operators, well connected with the major markets, cultivate flowers destined for the markets of the North. Not only is this water "transformed" into a non-food agricultural product in countries where it is sometimes in drastically short supply and where millions of farmers cannot even feed themselves properly, but it is also exported in the form of flowers or other amenity plants. This is the triumph of the famous concept of "virtual water" invented by the English geographer Tony Allan.

The recent crisis in food supply that has shaken a number of the world's countries, notably Egypt, has had the merit of showing the limits of various approaches to water-related problems. Egypt, where the food crisis has resulted in a number of deaths in brawls or crushes in front of bakeries making and selling subsidised bread, displays by itself the incoherence between the growth of intensive agriculture and peasant poverty and between the growth of agricultural exports and the aggravation of dependence in food supply. This country, where agriculture productivity averages are among the highest in the world thanks to the daily labour of one of the poorest peasantries in the world, records a rapid growth of exports of agricultural products such as citrus fruits, fruits out of season and flowers while it continues to import more than forty per cent of its cereal requirements.

Unfortunately, Egypt is not the only country suffering this contradiction, which can be seen as catastrophic on both the social and the political level; it brings, on the one hand, difficulties of access to sufficient food for everyone and, in certain cases, serious risks of famine; and, on the other hand, the aggravation of dependence on the north and major international companies. If one walks about the big cities of the North one finds, indeed, immigrants coming from the South, but one also finds flowers, citrus fruits, tomatoes, cucumbers and other vegetables out of season that also come from the southern shore. Just one more paradox? No, the very expression of the inequalities and

economic and political dependences directly caused and aggravated by the abandonment of hydraulic and food-producing sovereignty on the altar of the search for foreign currency and exterior and interior investment.

The Southern Mediterranean, an Area of Conflicts which Aggravate and Are Aggravated by Problems Linked to Water Resources

To make a geopolitical analysis of water in the Mediterranean without considering more than the water-supply data would result fatally in hasty and incomplete, indeed erroneous, conclusions. In fact, around the Mediterranean as elsewhere in the world the question of water is never isolated from the totality of the dominant political, economic and social data. To draw up the hydropolitical map, one first needs to establish the different "layers" of the geopolitical map of the region as a whole. Here a question arises: what is the main characteristic of the overall geopolitical map of the Mediterranean area?

Against a "pacified" northern shore, with the exception of Cyprus, the southern shore is first of all characterised by geopolitical discontinuity. It is enough to look at the map of frontiers – which nearly all date from the colonial period – notably the one between Morocco and Algeria and the one which separates Israel from all of its neighbours, to see the extent to which this region is prey to conflicts both complex and long-standing.

This has obvious consequences for all aspects of regional and even Mediterranean geopolitics. The first example in this respect is the conflict of Western Sahara, which sets Algeria and Morocco especially at loggerheads, and which today constitutes the principal obstacle to the unification of Arab Maghreb and to the initiation of the ambitious North African project whose creation was decided in 1995 by the heads of the five countries concerned. In addition, these conflicts and rivalries over territories and frontiers naturally extend to resources as a whole and especially water resources.

The sharing of surface waters between Algeria and Tunisia and especially those of the Medjerda basin, which has its sources in the mountains of eastern Algeria and debouches into the Mediterranean in Tunisian territory, the sharing of waters of the great fossil stratum buried under the sands of Libya, Egypt, Chad and Sudan, the conflicts over the waters of the

Nile between Egypt and the other states on the river's bank, the long rivalries over the slender water resources of the Jordan basin between Israel and its Arab neighbours, especially the Palestinians, and finally the misunderstandings between Lebanon and Syria over common water resources, especially those of the Orontes: these are only a few of the numerous rivalries over resources which, added to other local or international factors, make the southern shore an area of sometimes violent geopolitical ruptures rather than an area of co-operation.

Even so, all the difficulties which arise on frontiers sometimes completely sealed between the different countries of the southern shore, together with the relations between the two shores of the common sea which in any case depend on international relations, could be solved by bilateral or multilateral agreements, or even by collaboration agreements for collective management of common resources. A case often cited is the agreement over steel and coal concluded between France and Germany on the morrow of the Second World War, which indirectly but strongly facilitated the initiation of the European project.

But such positive scenarios completely fail to correspond to the local geopolitics and geohistory. On the southern shore the external difficulties sometimes appear fairly simple compared with the internal conflicts which shake each country with greater or less violence and sometimes destabilise political systems for the most part authoritarian and lacking all legitimacy: more or less "minority" internal claims, for example those of the Berber populations in North Africa, the problems of co-existence that shake Israeli society, the factional and clan rivalries that undermine the very foundations of Lebanese society, and, more generally, the indictment of all the political regimes of the region by more or less radical political oppositions.

This would not be complete if one did not emphasise the importance of social conflicts, sometimes deeper and more "dangerous" than those expressed by the ordinary political organisations in civil society: an example is the claims of the peasantry for better access to the resources needed to preserve their very existence and activities as farmers. The authoritarian nature of the local states only aggravates these antagonisms and sometimes builds frontiers which impede all evolution to regional complementarity, each power being jealous of its privileges and fearing exposure to "plots" organised by neighbours with or without the complicity of internal opponents.

Thus the hydropolitics of the south shore of the Mediterranean are driven more by the numerous political ruptures and antagonisms between the different states than by the total volume of water available. At the same time those hydropolitics are in fact a demonstrable and often “determining” dimension of the conflicts.

Water Poverty: Difficulties of Access in spite of Relative Abundance

The other essential aspect of the problem of water in the Mediterranean is the inequalities in collective and individual access to the resource. Admittedly there are inequalities everywhere on both shores, but undoubtedly these inequalities are more dramatic on the south shore. The most striking and revealing example of that dimension is Egypt.

In this country in which, thanks to the contribution of the Nile, the average availability of water is about 900 m³ per person per year, barely 70% of households are connected to the network of potable water. This figure falls to about 40% in rural areas and in poor or “illegal” urban districts. In the country, families with no direct access to the network of potable water help themselves directly from the irrigation canals or from the water table about fifteen metres down by means of fixed hand-pumps. In both cases, the people expose themselves daily to waterborne diseases either of biological origin (bacteria or microbes) or of chemical origin (pesticides, fertilisers etc.). It is no accident that one finds that about one case in three of child mortality (between 1 day and 5 years) is due to the consumption or use of polluted water. Moreover, the difficulties of access to potable water in Egypt are both the cause and the result of poverty. Like everywhere else, the lack of water causes or aggravates the process of individual or collective impoverishment and poverty often takes the form of difficulties in obtaining potable water. In rural Egypt it is still common to see families who have a tap at home take water from the canal or the underground

supply for the sole but dramatic reason of keeping their bills down. Thus, for the sake of their other household needs, they economise on water at the risk of exposing members of the family to serious and financially “costly” illnesses. Only a serious situation of poverty can push people to such high-risk behaviour.

The paradox is that Egypt could have avoided this situation which affects several millions of people. It is a very strong state which controls with a high degree of effectiveness the whole of its territory and society. It is also a country which has relatively homogenised its territory by organising it around its central axis, the Nile, and into a complex and complete hydraulic system which channels water into any small plot of the 3.5 million hectares of agricultural lands, all of them irrigated. Thus it is a country with an “army” of engineers and technicians with a high level of technical training, and can therefore perform all hydraulic works without the need of foreign experts, except for extremely complex cases. Moreover, in view of its geopolitical position on the shores of the Mediterranean and immediately on the border of Israel, Egypt has no great difficulties in “recovering” international and bilateral financial aid. But one is obliged to conclude that in this country, ruled by an authoritarian and corrupt regime, the struggle against poverty and the diseases directly linked to them is not a matter of urgency, let alone a priority.

This particular case unfortunately does not differ much from that of the other countries of the South and the East of the common sea. In some regions the inequality is sometimes even less explicable. But Egypt remains the country in the region where the gap between overall availability and real access by the population is greatest and most unaccountable. It is a model for the gap between the overall availability of water in the Mediterranean and the real levels of access. If one had to choose a key word or concept to analyse and describe Mediterranean hydropolitics, it would have to be “access.” If we analyse and act on the basis of access to water resources, we will not only be more rigorous in our analysis and argumentation, but also more effective in action.