

A 'Blue Plan' for the Mediterranean Region

Interest is growing in the Mediterranean countries and elsewhere about a rather unconventional project, the Blue Plan, which was initiated several years ago. The Blue Plan is not really a plan in the usual sense of the word but rather a study of possible futures of the Mediterranean region as a whole from the viewpoint of environment–development interactions. All Mediterranean countries take part in this exercise, which is conducted within the framework of the Mediterranean Action Plan, originally sponsored by UNEP.

The Blue Plan is based on the idea that the protection of the Mediterranean Sea itself—from the standpoint of pollution and of biological resources—depends primarily upon actions taken at the coastal states' level by national authorities and institutions, and upon the behaviour of their populations and of their economic and social 'actors'. In other words, the protection of the Sea depends largely upon what happens on land. The Sea cannot be artificially isolated from the prevailing socio-economic context, and is directly linked to the development, environment, and land-use planning, policies followed by the Mediterranean countries—not only in their coastal regions, but at the national level in its entirety. Moreover, it depends also on economic and social interactions between these countries as a whole and the rest of the world in the major sectors of activity. The Blue Plan is thus an attempt to outline the possible evolution of development–environment interactions in the Mediterranean 'system' in the world-wide context.

Method of Scenarios Chosen for 'Prospective' Study

For this ambitious goal, a methodology was required. The choice was the methods of *scenarios*—a method of analysing systems which is commonly used by economists, and which consists of building-up possible images of the future for the whole Mediterranean Basin according to consistent sets of development hypotheses. For each scenario, an attempt has been made to formulate the interactions between the major components of the environment—the sea itself, the soils, the continental waters, the forests, and the coastal regions—and the main economic sectors, which are agriculture, industry, energy, transport, and tourism. For each scenario, images have been built for two time-horizons, namely the year AD 2000 horizon, which is very close to the present, and for which the stage is already almost set, and the AD 2025 horizon, which may seem to be far ahead and very uncertain but which is closer than it looks, especially when we consider the time-lag that is necessary for obtaining significant effects from environmental action!

A '*prospective*' study is neither a prognosis nor a forecast of what the future holds. It can only provide consistent visualizations of possible futures which do not furnish easy recipes for action, but yet offers, to planning and decision-making authorities in the various countries, the opportunity of continuously setting their national development strategies within a systemic context that assures, to the largest extent possible, due safeguarding of the Mediterranean environment in the sea, on the coast, and in the hinterland.

Without attempting here to describe the scenarios which have been selected, it will suffice to say that they are of two main kinds, based on highly-contrasted development types: on one hand, *trend scenarios* assuming a development with higher or lower growth-rates but continuing in the direction of current trends; and on the other, *alternative scenarios* based on a deliberate search for a sustainable, balanced, and environmentally sound, development with a more accentuated cooperation between the northern side and the southern and eastern sides of the Basin.

Some Outline Conclusions of Blue Plan Scenarios

What, then, are the main results from the Blue Plan scenarios? These cannot be summarized in a few lines but, for this very special occasion of a Guest Editorial in *Environmental Conservation*, some important conclusions can be brought forward.

1) A first conclusion is that, over the periods of time considered, problems of development, of natural resources management, and of environmental protection, are of a substantially *different character between the countries to the north of the Basin and those to the south and east*. This arises from the differences in level of economic development at the starting-point, and from significantly contrasting ecological, climatological, and hydrological, conditions, but even more from the complete contrast in demographic trends on both sides. Depending on the scenarios, the *population* of the Mediterranean countries as a whole, currently around 360 millions, would reach between 520 and 570 millions in AD 2025, which is a very considerable increase.

The difference between the last two totals cited above is important in itself, being approximately the equivalent of the current populations of both Egypt and Turkey separately. But the main point is that, in AD 2025, the countries to the north of the Mediterranean Basin, ranging from Spain to Greece, which accounted

for about two-thirds of the total Mediterranean population in 1950, would only then account for one-third. Conversely, the population of countries from Morocco to Turkey would be nearly five times as large as it was in 1950. This quantitative overthrow is accompanied by a major qualitative change: during the period considered, the population of the north will become older, while the population of the south and east will remain relatively young and dynamic. Thus, in the manner of the US–Mexican border, the Mediterranean Sea constitutes one of the very few boundaries separating two contiguous geopolitical areas with completely contrasting demographic characteristics. This fact has multiple consequences, *inter alia* for any action concerning the management and conservation of natural resources.

2) Another general conclusion and concern, in all the scenarios selected, is the acceleration of the *urbanization* process and, even more, of what might be called '*littoralization*', namely increasing concentration of population and economic activity on a narrow coastal strip—indeed extremely narrow in many parts of the region, where the fragmented and abrupt relief on the littoral hampers intrusion and extension into inland areas. The coastal urban population, currently some 80 millions, would reach, depending on the scenario, between 150 and 175 millions in AD 2025. Calculations have then been made of what these increases represent—for instance, in terms of domestic water demand, of waste-disposal into the sea, etc.

3) In the *agricultural sector*, a deep contrast is projected between the north on one hand, which seems destined to be largely dominated by the Common Agricultural Policy of the Commission of European Communities, and where the main problems will be to manage abandoned farmland, to control overproduction, to avoid 'over-irrigation', and to stabilize amounts of chemical inputs; and the south and east, where water allocation will require difficult arbitrations in all scenarios, and where the intensification of agriculture—which is bound to occur in an effort to reduce massive food imports—will imply a major increase in the use of fertilizers and pesticides. Naturally, there are considerable quantitative and qualitative differences between the trends in alternative scenarios for the agricultural sector, where interactions with the environment are important and complex, and may sometimes be counter-intuitive. The crucial problems concerning soil erosion, forest management, and water-resources conservation, which have a special character and dimension in the Mediterranean Basin, are closely related to the evolution of agricultural practices, particularly in the hinterland. At the same time, considering the geographical features and the location of urban areas, it is likely that the intensification of agriculture will tend to concentrate on the coastal plains.

4) It is also near the coastline, for rather obvious reasons, that *industry* tends to concentrate. In this rapidly-evolving and multifaceted sector, it appears that conventional industries (iron, steel, cement, oil refining, etc.) will peak in intensity and even decline in the north, but seem bound to expand considerably in the south and east. This will create many threats to coastal landscapes which will need to be mitigated through careful location and installation policies. It will also induce air and water pollution hazards of various kinds, that can be avoided if pollution control techniques, which are already known, are actually applied.

5) In the field of *energy*, whatever type of development occurs, electrification is likely to continue at a fast rate in the southern and eastern countries, both for lighting and television in rural areas and to keep pace with urbanization and industrialization. Thus, energy consumption in these countries could grow from 80,000 million Kwh in AD 1983 to more than 900,000 million Kwh in the year 2025. Whatever kind of production process is used, this would entail the building-up of some 200 thermal power-plants which would necessarily be located on the coast—the only situation where they could find the 140,000 million m³ of cooling water required annually. When one considers that the total length of 'useful' coastline (especially that which is not too steep) from Morocco to Turkey is about 4,000 km, this means one power-plant every 20 kilometres, and indeed much more where the concentration of needs so requires.

For oil, the scenarios indicate a stabilization of consumption in the north but a sharp increase in the south and east, so that the total aggregated consumption in the Mediterranean Basin from 1985 to 2025 would exceed 12,000 million tonnes, which is more than twice the current known reserves in the region. New reserves will doubtless be discovered. Will they come from the Mediterranean Sea itself? So far, off-shore prospection has not produced spectacular results: annual production is in the order of 5 million tonnes. In this field the scenarios do not provide much insight because of geological uncertainties, but they have in no case considered the likelihood of large-scale off-shore activities, with the environmental hazards involved.

Conversely, in favourable scenarios, natural gas could play a major role in the development of South–North and South–South energy trade. As far as 'renewable' sources of energy are concerned, scenarios most favourable to the environment contemplate that they will play a useful role—particularly decentralized conversion of solar energy in rural areas to help solve the fuel-wood problem, or wind energy on islands and some parts of the coasts—but this contribution is likely to remain comparatively small during the period under consideration.

6) *Tourism* is a particularly dynamic sector, and as a whole the Mediterranean countries constitute the biggest tourist region in the world, accounting for some 35% of international tourism. This tourism is heavily seasonal and increasingly concentrated on the coastal areas, which currently receive nearly 100 million international and domestic tourists per year. In 2025 AD, with a scenario of weak economic growth, this figure would grow to nearly 200 millions, and to some 350 millions in the case of strong economic growth (almost half then being domestic tourists from within their own countries).

It is worth noting that such striking figures of tourism would not exceed the currently-available accommodation capacity, if only it could be used all the year around. This is obviously not the case with current behavioural patterns, and so far efforts at staggering holiday periods have not been particularly successful. The environmental impacts of such a development of tourism should not become exaggerated, provided infrastructures are properly conceived and located and individual behaviour becomes duly adapted—in particular through much-improved awareness of, and respect for, the physical and cultural environment which the tourist has come to experience. However, the requirements of infrastructures for accommodational space and amenities, the water demand in peak periods, the impacts of solid waste, sewage discharges, automobiles, and boats, etc., will inevitably increase in proportion to the increase in numbers of visitors—all this taking place essentially on the littoral fringe.

7) *Transport* is an activity which derives from the other sectors. It would appear that 'automobilization' and road transport will continue to develop very strongly in the Basin, and the number of vehicles (currently totalling some 60 millions largely concentrated in Spain, France, and Italy) is likely to reach 175 millions in AD 2025. Under current conditions, NO_x emissions could peak by the year 2000 and subsequently decrease because of improved regulation combined with technological progress. In the maritime area, oil transport, which currently amounts to some 200 million tonnes per year, is not likely to increase much. Crude oil transport should actually decline, while the transport of products refined by the producer countries should rise. Discharges from ships at sea will not decrease rapidly because this is linked to the slow renewal of the tanker fleet. Intra-Mediterranean sea transport of liquefied natural gas will probably grow very little, the increase of trade in gas being largely taken care of by pipelines through the Strait of Sicily or near Gibraltar.

Inexorable Coastal Pressures Could be Lessened

These summary remarks all lead to a fairly obvious conclusion, the meaning and seriousness of which have, however, not yet been properly appreciated: it is the inescapable convergence and formidable accumulation of pressures of all kinds on the *Mediterranean coastline*. That is where human populations will concentrate, where urbanization is destined to expand most often in uncontrolled ways, gobbling-up good soil and destroying landscapes—in competition with a host of activities such as tourism, industry, energy production, ports, aquaculture, highways, airports, etc. This cut-throat competition for coastal space will evidently take place to a very large extent at the expense of the fragile natural areas of the coastal fringe, and this irreversible process is already in rapid spate today—sometimes through necessity, but more often through neglect and complacency, without our being clearly conscious of its gravity.

One of the strongest guidelines advocated by the Blue Plan for action by governments and regional and local authorities is that every possible step should be taken, without delay, to protect the natural coastal areas which can still be protected—wherever possible through Biosphere Reserves* or coastline purchases—and that any industrial, urban, touristic, or public works development, project should only be conceived in the framework of an *integrated coastal management* plan. Such protection of coastal areas and integrated management thereof must take into account, at one and the same time, the terrestrial part as well as the coastal marine part of the littoral. Only such an approach to coastal regions management in any development scenario can ensure protection of the Mediterranean Sea itself and of its resources. In effect, what would be the point in maintaining a clean and healthy sea if life had become intolerable for people on its shores?

Action Required Now

The Blue Plan scenarios indicate that, up to the year 2000, the situation which is experienced today appears to be more or less manageable in most countries, through contingency action—provided that declared policies and stipulated regulations are effectively implemented. The scenarios show, however, that the situation is likely to deteriorate considerably thereafter towards the year 2025. The time-lag necessary for corrective

* This modest reference to Biosphere Reserves recalls for us the Author's unique position as the initiator and leading exponent of that admirably far-sighted movement for global conservation.—Ed.

environmental measures demands, therefore, an immediate movement away from trend scenarios. It is indeed from *today* that more and more energetic policies have to be decided and implemented if a generalized degradation of the Mediterranean environment and way of life is to be avoided. Any time lost in taking action would mean that the measures which would have to be taken at a later stage would be more difficult, more costly, and less effective, than would currently suffice, and would lead to irreversible situations as regards land-use, natural environments, and landscapes.

In any event, even in the most favourable scenarios, protection of the Mediterranean environment, especially the coastal strip, will be difficult in the long run especially in the *south and east* of the Basin, because of growing human pressures there and the vulnerability of the natural environment. It will require in any case a continuous and unswerving determination of governments and public authorities, based on a bedrock of support from public opinion. These requirements do not seem to be sufficiently appreciated at present. Yet, it appears from the scenarios that, in the case of the Mediterranean Basin, the way forward for meeting development goals depends upon the imperatives of environmental protection. In other terms, it is no longer development concerns which may result in neglect of the environment: rather, it is the degradation of the environment which may impede further development, and which threatens the welfare of Mediterranean people.

Regional Solidarity and Public Support Needed

The magnitude of problems stemming from socio-economic constraints affecting countries in the south and east of the Basin—in all the scenarios, despite their fairly broad range—shows that the efforts undertaken at the national and local level, however significant and relevant they may be, are likely to be quite insufficient. This is why the alternative scenarios, which should allow for an acceptable evolution of the Mediterranean environment, are based upon a genuine *North–South solidarity* and an effective *South–South cooperation*. Without such solidarity and such cooperation, the medium-term future in the Mediterranean Basin would appear very dark indeed.

The Blue Plan scenarios do not attempt, of course, to provide either optimistic or pessimistic views of the future. Their role is mainly to offer a basis for reflection in order to initiate *enlightened action* in each and every Mediterranean country and in the Basin as a whole. The Blue Plan has nevertheless brought out a number of guidelines for national action, as well a number of suggestions for Basin-wide cooperation. It is to be hoped that a sufficiently wide dissemination in the middle of 1988 of the Blue Plan final reports, will allow public opinion, national authorities, and international agencies—including the World Bank which has recently shown its interest in this work for its own environmental action in the region—to mobilize their efforts in time to save the region from devastation.

Such a *mobilization* for safeguarding the Mediterranean environment—the Sea, its resources, and its shores and hinterland—and, even more, of the Mediterranean people themselves, appears to depend upon three priority elements:

- Successful search for new types of development in the region, based on stronger intra-Mediterranean cooperation and more resolute North–South solidarity than currently prevail;
- Systematic integration of environmental consideration in all sectors of development, particularly at the level of coastal regions; and
- Effective promotion of a much-improved understanding of environment–development interactions throughout the Mediterranean Basin, leading to the adoption of new forms of behaviour among national and local decision-makers—including the public and private sectors and all Mediterranean people—around what might be called a ‘modern environmental culture’.

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