



MEDWAVES

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CLIMATIC CHANGES AND SEA LEVEL RISE: CONCLUSIONS OF THE SPLIT MEETING

25 scientists from 15 countries met at RAC/PAP Split, Oct. 3-8 and exchanged views on climatic changes within the framework of a UNEP-sponsored study programme.

The warning is clear: action must be launched now in order to meet this ecological challenge, despite the fact that at the present time predictions are not certain.

For the last 20 years, science and environmental protection have been developing so fast that problems, which because of their complexity were only known to scientists, are now discussed at international meetings, perceived as threats to all mankind and thus requiring urgent solutions. Just 10 years ago, who but a few scientists knew anything about the depletion of the stratospheric ozone layer? Who knew that this phenomenon, due to the industrial use of chlorofluorocarbons (especially in refrigerators and sprays) could cause a decrease in plant production and an upsurge in skin cancers? However, because many seminars, workshops, meetings and conferences were organized on this question, it finally reached the mass media and became a matter of concern both for the public at large and for decision makers. Finally, on Sept. 16, 1987, the "historic" Montreal Protocol was signed on the gradual reduction and "freezing" in the use of the guilty substances.

Another case in point is the warming of the world climate and ensuing sea level rise. This is also an anthropogenic problem in an industrial era: scientists have for many years predicted that the increase of carbon dioxide and various trace gases in the atmosphere could lead in the first half of the next century to a rise of mean world temperature higher than any previous temperature rise in the course of human history. CO₂ and the trace gases (nitrous oxide, methane, ozone etc.) shield short wave solar radiation but absorb and limit long wave radiation, thus producing a greenhouse effect which brings about a rise in temperature which in turn brings about a rise in sea level (through thermal expansion, melting of the Ice Barrier etc.)

It is a problem threatening several regions throughout the world and UNEP has studied it for a long time. A meeting to discuss it was convened last October in Split, Yugoslavia; 6 teams of experts



participated, each focusing on one marine area. It was organized by the MAP Co-ordinating Unit within the framework of study and reflection.

1985: The Villach landmark

Not very long ago, world climate and the composition of the atmosphere seemed relatively stable and at least independent of human activities. The notion - still very theoretical - of the release of CO₂ followed by climate changes emerged at the end of the 19th century. It became more concrete from 1957 onwards, when precise measurements of atmospheric CO₂ led to a documented actual increase of this gas in the atmosphere and thus to the consideration of the negative consequences of this phenomenon. In 1972, the Stockholm Conference reflected this new concern of the scientific community. 13 years later, in Oct. 1985, a UNEP/WHO/ICSU conference was convened at the Aus-

trian city of Villach in which the various aspects of the greenhouse effect were discussed. It became clear that the problem is very complicated or worse if we refer to this statement made by one participant: "Possible causes and effects of greenhouse gas-related changes are intimately linked to other problems of energy, agriculture, population and environment. The linkages are physical, biological, economic and political... Finally uncertainty dominates every aspect of the greenhouse gas question, from emission rates through environmental consequences to socio-economic impacts themselves". However, the expert meeting at Villach agreed on certain basic assumptions: the other greenhouse gases (apart from CO₂) are equally important and will become even more important in the future; if the accumulation of greenhouse gases continues at today's rate, the gases will have doubled by the year 2025, by comparison with pre-industrial levels. One can expect a rise in mean world temperature of between 1.5 and 4.5°C; the corresponding sea level rise should range between 20 and 140 cm and would be due, in certain sites, not only to temperature rise but also to soil subsidence (or sinking of ground level due to extraction activities, pumping of the water table etc.).

It is still not possible to predict accurately climate changes and their impact. New factors suddenly appear, such as the oil crisis in the 70's for instance, which means that calculations have to be done all over again. However, if we let things slide, the results could jeopardize the future of great regions of the world. In response to this first warning issued by the Villach Conference, UNEP created 6 teams of experts to study the following maritime regions: the Mediterranean, Caribbean, East Asia, South Asia, South Pacific and South East Pacific. The teams have the task to examine the possible effects of sea level changes on the coastal ecosystems, those of temperature rises on the terrestrial and

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aquatic ecosystems and of climate changes and their possible effects on the socio-economic structures and activities. While keeping the conjectural framework defined at Villach, Split made possible a more regional approach. The experts studying the Pacific, Asia and the Caribbean have noted the most important predictable impacts in their respective zones, or even the impacts which have already occurred in places like Bangkok, Peru, Chile and the Maldive Islands.

The repercussions on the Mediterranean

At Split, 17 papers dealt with the Mediterranean. They discussed practically all aspects of the problem: impact of a future rise in sea level on the lowlands of the Mediterranean, changes in vegetation and soil use by the year 2050, implications of climatic change on land degradation, hydrological aspects and impact on water table resources and implications on the socio-economic activities of the coast. Even this short list shows to what extent climatic changes involve several scientific disciplines. Site studies of the Pô delta, Venice, the Gulf du Lion, the Ebro delta, the Thermaic Gulf, the Bizerta lake and the wetland at Ishkeul completed the picture and underscored problems specific to each sector of the Mediterranean Basin. As Mr. Jeftic a staff member of the MAP Co-ordinating Unit and chairman of the meeting as well as co-ordinator of the team of experts on the Mediterranean explained the main points that emerged from the discussions and are reflected in the conclusions and recommendations of the report are all warnings.

It appears that a rise in temperature would lead to a decrease in water resources and expanded desertification. They in turn would shift crops such as citrus fruit, cereals, vegetables northward, from the North of Africa to the South of Europe; the European market would thus close to the affected countries of the South, whereas large population groups, deprived of water resources would be forced to emigrate. Sea level rise aggravated by soil subsidence would exceed five-fold the minimum predicted figure of 20 cm by 2025 in certain sites of the Mediterranean basin. Venice is not on the list of these sites, but is still threatened by more frequent floods and the corrosion of its stones will worsen. In addition, non climatic factors (demographic boom, development plans) will bring about a permanent increased stress of societies due to climatic depressions in the Mediterranean area, especially its southern part, where there is the risk of catastrophe if several factors combine. The rain regime will also be modified with a tendency for increased precipitation on the Northern coast.

What should be done?

This is obviously the main question, since even if we start with the assumption of minimal gravity, the impact of a temperature rise and a sea level rise will be very serious in certain areas. However, to answer this question is difficult (unlike the ozone question) because there are several complex factors at play here. The Split meeting, like that of Villach, recognized that a large margin of uncertainty affects the predictions of climatic changes; the models currently available do not give us a reliable

detailed simulation at the regional level. The impact cannot be denied; it is the seriousness that is difficult to determine. However, a strategy to meet this challenge should be developed right now because we are dealing with long term effects; if we do not act now the damage would affect one or several generations in the future. The decisions should be taken on the basis of numerous criteria on a case by case basis: consumption of energy, use of water resources, identification of vulnerable areas, the setting up of special infrastructure projects (on the Netherlands model), etc. Between the uncertainty of current forecasts and the need to act without delay, the course is very narrow for the decision makers, planners and politicians.

One of the Split recommendations makes the point very clearly: "The rise in sea level could inundate lowland areas, erode beaches, exacerbate flooding and increase the salinity of rivers, estuaries, lagoons and aquifers. However, many of the most adverse consequences can be avoided if society takes timely anticipatory measures. Although for some purposes it may be more prudent to wait to see how much the sea rises, there is consensus that we cannot wait until all the answers have been obtained, and adequate measures must be taken now".

THE CLIMATIC CHANGES WILL AFFECT BOTH THE NATURAL AND THE MAN-MADE ENVIRONMENTS, AS WELL AS THE VARIOUS HUMAN ACTIVITIES (AGRICULTURE, FORESTRY AQUACULTURE, TOURISM, TRANSPORT ETC.). IN ORDER TO MITIGATE THE ADVERSE EFFECTS IT WOULD BE NECESSARY TO INCREASE EXPENDITURE FOR:

- THE PROTECTION OF THE LOW COASTAL AREAS FROM SEA LEVEL RISE
- THE PROTECTION OF FRESHWATER RESOURCES
- THE (RE)CONSTRUCTION OF WASTE WATER DISPOSAL SYSTEMS AND
- THE PRODUCTION OF FOOD AND OTHER AGRICULTURAL PRODUCTS.

(Report of the Split Meeting on the implications of climatic change).

IN THE MARGIN OF THE SPLIT MEETING:

The MAP Co-ordinating Unit has published A BIBLIOGRAPHY ON CLIMATIC CHANGE AND RELATED TOPICS (L. JEFTIC AND A. DAVAKIS). This bibliography contains nearly 1,400 entries. It was prepared by extensive searching

of periodicals, monographs, various publications, university libraries, card catalogues, the data base of the Documentation Centre of the National Hellenic Research Foundation and various other data bases. The criteria used for the selection of publications referred to allowed a very wide coverage of topics related to climatic change, especially as concerns publications after 1983. The current edition contains a bibliography by author with a full bibliographic citation, indexed by author/corporate body, followed by date of publication. A bibliography by geographic area concerns the Mediterranean. This edition will be updated by the MAP Co-ordinating Unit with information received from potential users; it will be published in early 1989 with a subject index. It will be available on diskette together with the relevant software.

THE SPLIT MEETING IN THE INTERNATIONAL PRESS

The Split Meeting was given ample coverage in the international press which stressed the principal conclusions of the report. **The International Herald Tribune**, in a 5-column article "Scientists warn a rise in Mediterranean Sea could endanger coasts", highlights the comments by Mr. Stjepan Keckes (UNEP): "We do not want to alarm anyone unnecessarily, but the changes are coming and the governments had better be prepared for them". The article also refers to the intervention by a Dutch scientist: "Saskia Jelgersma, of the Geological Survey in Haarlem, the Netherlands, said the Dutch experience shows that it takes generations to develop adequate defenses against the sea". "We must start politicians thinking about the problem now" she said. **The Observer** prints an article with the title "Greenhouse threat to Isle States" and remarks that "the whole world will be affected by the rising sea and the changes in climate that will result from warming the earth". The author mainly refers to the threat to the island States of the Indian and Pacific Oceans. **The New Scientist** focuses its article on the Split meeting on the city of Alexandria which would be the "new Atlantis" in the next century. "It is probably Egypt, the country least able to hold back the waters which will have to face the worst impacts of a rising Mediterranean. The largest city on the Nile Delta, Alexandria, has a population of 3.5 million. Much of the city is less than a metre above sea level. The Nile Delta is already retreating in the aftermath of the closure in 1964 of the Aswan dam, which stopped the transfer of silt to the delta. "Coastal retreat is expected to be a lasting phenomenon. It will be much worsened by a significant rise in sea level". Finally **The Guardian** also refers to the threatened "Paradise Islands" and writes; "A recent UN study showed that a 30 centimetre rise could erode between 20 and 60 metres of beach. This could mean calamity for sea front dwellers in Britain, the Mediterranean or the Pacific, since the first row of houses is often less than 20 metres from the high tide line".

MEETINGS IN ATHENS OF THE BUREAU AND THE EXPANDED BUREAU OF THE CONTRACTING PARTIES

Budget, Refocusing of the Mediterranean Action Plan and Transboundary Movements of Hazardous Waste

At their 5th Ordinary Meeting (Athens, Sept. 7-11, 1987) the Contracting Parties to the Barcelona Convention for the protection of the Mediterranean Sea against pollution had taken the decision to convene a meeting of the Expanded Bureau, i.e. open to all the Mediterranean Coastal States. The meeting held at Athens on the 1st and 2nd Nov. 1988 was preceded on Oct. 31 by a meeting of the Bureau. The Bureau president, Mr. Evangelos Kouloumbis, Greek Minister for the Environment, reminded participants of the fact that his country, which at the time also held the presidency of the Council of Ministers of the EEC, had hosted several international meetings on environmental matters and especially the meeting of the European Environment Bureau (Athens, 21-22 April 1988) as well as the informal meeting of the Environment Ministers of the EEC Member States (Delphi, 1-2 Oct. 1988). We should note in this connection that the "Summit" of the 12 heads of State and Government held at Rhodes on Dec. 1-2 voted *inter alia* a common resolution on a new approach to environmental policy.

At its meeting, the Expanded Bureau adopted the draft budget for 1989 of \$4,620,000 and the allocation of funds. The meeting also had the task to establish the guidelines for the refocusing of MAP on integrated planning and the ecologically sound management of the Mediterranean Basin.

In this connection it examined the preliminary report by the Executive Director of UNEP. Several participants made preliminary comments on the proposed refocusing and it was agreed that within two months, the States would submit their observations in writing to the Co-ordinating Unit. On the basis of this collective examination, a new version of the preliminary report will be submitted to the Bureau at its next meeting of March 1989 in order to bring about a faster pace in this fundamental phase of the refocusing process. The refocusing aims at bringing about a balance and the appropriate degree of integration of environmental considerations and of resource management within MAP. A very important discussion was thus launched at Athens; its conclusions should in the next few months form the main points of a structural response to the more general questions raised by the Blue Plan Report on the development of the Mediterranean Coast.

Finally, two important initiatives were taken by the Expanded Bureau. The representative of Greece and President of the Bureau proposed and was authorized to do so by the Meeting to communicate to the Environment Ministers of the EEC who were to meet three weeks later (see below) a declaration of the participants on the protection of the Mediterranean. Furthermore, the meeting dealt with the crucial matter of transboundary movements of hazardous wastes, which for several months now has caused a controversy and strong reactions within the international community. UNEP has concerned itself with this question for a long time, but recent developments have brought it back to the centre of attention and illustrated the need to impose new and very stringent regulations in order to ensure the safe disposal of these wastes. In the course of the lively discussion on this issue, it was suggested that the Co-ordinating Unit could play an important role in this connection by collecting all useful information

communicated to it by the various States. The Unit, on the other hand, proposed to take into consideration the Basel Conclusions and the practical implications for the Mediterranean countries of the Convention which would be adopted there. The reader will also find here the complete text of the declaration on hazardous wastes adopted by the Expanded Bureau.

A message of the Mediterranean States to the European Community

The Expanded Bureau of the Mediterranean Action Plan, which met in Athens on the 1st and 2nd of November 1988, expressed its great interest in the realization of a global and coherent environmental strategy in the Mediterranean.

All the Mediterranean countries take fully into account the importance of the Mediterranean region for both the citizens of the whole of Europe who visit the area during the summer, and the preservation of the cultural and ecological continuity and balance of Europe.

Keeping always in mind that environmental investments are also productive and contribute towards sustainable development, the Mediterranean countries welcome appropriate and more effective European Community action for the protection of the Mediterranean environment.

Statement of the Athens meeting on transboundary movements of hazardous wastes

The Expanded Bureau of the Contracting Parties to the Barcelona Convention and its related protocols, met on 1 and 2 November 1988, took note of the concern expressed by a number of delegations with regard to the transboundary movement and eventual unauthorized disposal of hazardous waste and recognized that the Mediterranean States should be vigilant so that existing relevant legislation at national or international level be respected.

Furthermore, it was noticed that in a number of international fora cooperation on this topic had made progress at a world or regional scale: UNEP, WHO, IMO, OECD, European Community (Directive of 1984/1986, meetings of African countries etc.).

More particularly the Bureau was pleased to note the progress of work for the preparation of the international Convention on the control of transboundary movements of hazardous wastes under the auspices of UNEP. It expressed the hope that the participants would make an active contribution in order to ensure the full success of the Conference scheduled in Basel in March 1989.

Pending the adoption of that Convention and the implementation of its provisions, the Bureau appealed to the Contracting Parties to the Barcelona Convention and its related Protocols for further cooperation. In addition, it was requested that the

Contracting Parties contribute actively in the dissemination and exchange of relevant information, with a view to preventing, reducing and combating the pollution related to transboundary movements and disposal of hazardous wastes in the Mediterranean.



NOTICE TO INVENTIVE SPIRITS: THE DATES OF THE ENVIRONMENT WEEK 1989 HAVE BEEN ANNOUNCED

The dates of the 1989 Environment Week were announced by the Bureau Meeting at Athens; this gives ample time for full-scale preparations. The week of 5-9 June 1989 was selected in order that it coincide with the International Environment Day (5 June) and thus avoid duplication of effort. The main objective of the Environment Week is to make the public in the Mediterranean Coastal States aware of the problems of their common sea and the environment they share; thus a large part of the activities to be planned should concern public awareness campaigns. We should point out that Greece had proposed the creation of a Committee which could coordinate information campaigns throughout the Mediterranean and that France expressed the wish to open to the Mediterranean non-European States the "Blue Flag" Contest, which is carried out under the auspices of the Foundation on Environmental Education in Europe, in order to promote the cleanest bathing stations and beaches.

However, all these activities were implemented by either the national or local authorities in the various countries. On the other hand, the Mediterranean Environment Week is the business of each and everyone. In order that it be successful, everybody who wishes to contribute to the protection of the environment should be mobilized and join hands with all other persons equally devoted to the cause. An appeal is thus made to all NGOs, volunteers, teachers and students to become active, by coming into contact with local authorities and raise the interest of local officials.

The activities where everybody can participate, cleaning-up contests, fairs and festivities don't cost much: inventive spirits are especially welcome: the more unusual and uncommon an idea, the greater attention it will attract from the mass media and the more people it will reach. In a field such as this, poets and artists are as useful as advertising men. The former and the latter can join hands to serve the cause of environmental protection. The Mediterranean Environment Week gives everyone the opportunity to contribute to this noble cause.

THE BLUE PLAN RE AND OFFICIALLY PRES

*The politicians and planners of the Mediterranean countries
or adjust their national development strategies in relation*

"For the first time, all countries of a major region of the world have combined their efforts in order to explore the dynamic relationships between their economic and social development and their common environment, from the sea they surround to its shores and hinterland".

This is the opening sentence of the BP Executive summary "Futures of the Mediterranean Basin". It stresses the range of this document after an 11-year exercise period which mobilized teams of experts in all Mediterranean territories, and seems to answer the plea launched in February 1977 at the intergovernmental Meeting of Split by UNEP's Executive Director, Mr. M.K. Tolba: "It is of utmost importance to provide the governments of the Mediterranean countries with an overall picture of the economic and environmental situation in the Mediterranean region and of the close interdependence between all its components". The commitment was thus kept and the global picture drawn. The results are presented in various publications that were issued simultaneously:

- **The Main report of the Blue Plan** with more than 600 pages, which is the complete and detailed synthesis of all the prospective studies carried out around the "Mediterranean Scenarios".

- **The Synthesis report** which is the Executive summary, which in 100 pages gives an overall picture of the future of the Mediterranean basin and of the main options that it implies; it is addressed mainly to the national and local officials, teachers, students, journalists as well as to the public at large concerned about the ecological challenges of the end of the 20th century.

- **The accompanying documents:** a booklet bearing the title "Environmental data base of the Mediterranean basin", where one can find all the tables, diagrams and statistics which support or illustrate the text and some of which were not inserted in the reports in order to make them easier to read; finally a series of **SPECIALIZED BOOKLETS** on the main economic sectors and various geographic environments. These booklets will deal with issues that the global report only touched upon, thus supplementing the global view. The first specialized booklet "The future of the Mediterranean forest" has already come out, about 15 more are scheduled to follow in 1989.

All these publications are available in English and French. The Arabic version is being prepared, whereas certain countries - like Spain - are considering translating them into their national language. Thus rather than a Blue Plan report, we have here "a prospective corpus" or "encyclopedia of the Mediterranean future" which affords several levels of accessibility and reading, depending on educational level, interests, specialization (or even the time) that the potential user has.

The complete work was greeted enthusiastically by the participants to the first meeting of the MAP Socio-economic Committee (Athens, 27-29 Sept. 1988). Many suggested that the published report should be disseminated as widely as possible. On 1st Nov. 1988, Mr. Batisse and Mr. Grenon, president and scientific director of RAC/BP respectively, along with Mr. Manos, MAP coordinator, officially presented the report within the framework of a press conference given at the headquarters of the Foreign Press Association in Athens. The mass media gave extensive coverage to it. Another presentation took place in Cairo on Nov. 23, 1988, still others are scheduled for 1989 in Paris and Rome mainly.

However, the last phase of the BP is not just these publications. Another important event is the transfer to the Coordinating Unit at Athens of the data base elaborated by RAC/BP in Sophia Antipolis during this exercise; this means that over 300,000 entries will from now on be accessible to all countries participating in MAP.



Courses of Action

It would be foolish to try and summarize here either the main report or the Executive summary, where the reader can find a discussion, from the prospect of the 2000 and 2025 horizons, of all the major problems of the Mediterranean basin: demographic development, threats to the soil, coast and forests, questions of energy, water or tourism. However, it might be useful to report

the main principles which underline the general Blue Plan approach and are given in the introduction of the Executive summary. In a certain way they define the conceptual framework established by the teams charged with the elaboration of national scenarios and of the first syntheses and later by the main team at Sophia Antipolis which drafted the final report on the basis of all these elements.

In order to dispel priori any misunderstanding on its scope and use, the report notes first what it is not, i.e. it sets its own limits:

"The long term visualizations outlined in the report are not intended to furnish easy formulas for action"

In other words, the results are not a "ready made" type of planning which can be followed as is or adjusted at will by public authorities. Nor are they a list of recommendations such as those that normally conclude seminars and meetings on specific topics. As one participant to the MAP Socio-economic Committee Meeting put it: "the report 'opens vistas for delving deeper' for all those who must reflect and decide on the Mediterranean future.

"The Blue Plan approach was formulated at the level of the Mediterranean basin as a whole... Its global nature may therefore conceal local trends... Nor can it take into account unexpected events or sudden disruptions" (or "surprises").

This second principle takes the first a little further by defining the limits of a global outlook. Concerning the "surprises", it is evident that the Blue Plan has nothing to do with a dangerous exercise in futurology. It is definitely within the only "exploitable" perspective, i.e. the perspective of the "plausible". Any major historical accident (ecological catastrophe of the Chernobyl type, local wars, social upheavals, catastrophic epidemics and even more a generalized conflict) would cancel the perspectives and the various scenarios described in the report, but not their rational character, since in such a case it would be History itself that would come into the sphere of the irrational and escape - at least for a while - from the control of man.

After these reservations, the report deals with the major facts of the scenarios: they correspond to the principal challenges of the following decades. Here are the most striking:

"Most problems of development, natural resource management and environmental protection were viewed in a substantially different way by the countries North of the Basin and those South and East of it".

REPORT IS PUBLISHED PRESENTED TO THE PRESS

... have from now on a common reference framework to define ...
... with the requirements of environmental protection.

"The various scenarios envisaged, whether they are based on the continuation, more or less enhanced, of current trends (the so-called "trend" scenarios), or on a more goal-oriented realignment of Mediterranean co-operation, at the level of both the environment and development (the so-called "alternative" scenarios), lead to "images" of the Mediterranean environment that do not radically differ at the 2000 horizon. However, the scenarios for the 2025 horizon indicated that... policies more vigorous than the current ones must be decided upon and implemented here and now".

"Development itself will only be achieved through protection of the environment".

"Greatly increased North-South solidarity and South-South cooperation are fundamental for the protection of the sea and the basin as a whole.

The Blue Plan scenarios, far from propagating an "alarmist" climate which could lead to fatalism and renunciation even in the least favourable assumption of an aggravated continuation of actual trends, are on the contrary an instigation to act.

They clearly show that to look for new types of development, to take into consideration systematically the environment in planning, to make the public aware of the problems in order to bring about a change in attitudes are all courageous options that will enable us to lessen the damaging effects of current trends if not reverse them. The report highlights the opportunities that must be taken; it is a message of hope through the concerted action of all the countries.

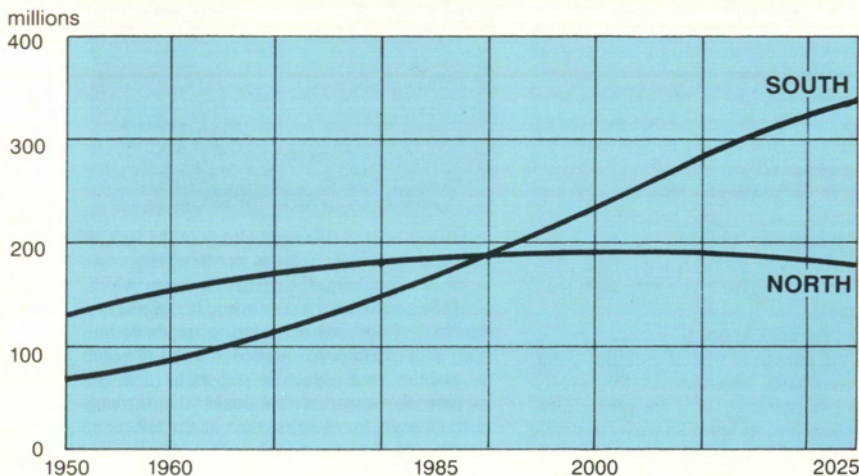
The post Blue Plan period

The Blue Plan exercise should, in principle, end in 1989 with the publication of the specialized booklets, the continuation of the campaign of dissemination and promotion of the report and the updating of the Mediterranean data. Then it will be up to the MAP member States to decide whether to continue the exercise. The choices will depend largely on the reaction elicited by the report, the quality of the dialogue it generates in the Mediterranean countries and among them. As is stated in the introduction to the main report, "the experience shows that reports of this type do not acquire their full importance unless they are followed by decisions and individual or collective actions and a widening of the awareness on selected serious problems". The ball is now in the court of the countries and the decision makers.

BLUE PLAN CHRONOLOGY

<p>Feb. 1977 Split intergovernmental meeting. Blue Plan is initiated in order to aid the Mediterranean countries collectively to explore their future.</p>	<p>Spring 1985 Under a contract signed by UNEP and France, a technical and administrative unit, the Regional Activities Centre of the Blue Plan is created in Sophia Antipolis. The second phase begins; it is the period of systematic analysis and of the elaboration of national scenarios.</p>	<p>End 1986 The first reports on the national scenarios are completed.</p>
<p>Sept. 1980 - May 1984 Exploratory first phase under the responsibility of a "Group of Co-ordination and Synthesis". Twelve sectoral studies are carried out. The synopses are summarized in the booklet. Setting up of the Blue Plan Focal Points.</p>	<p>April 1986 Evaluation in Athens of the second phase of the Blue Plan by the Meeting of the</p>	<p>Beginning 1988 The central team updates the BP report with the help of the Study Group on the scenarios and the follow-ups of the Steering Committee.</p>
		<p>November 1988 First presentation to the international press at Athens of the report and related publications.</p>

POPULATION IN THE MEDITERRANEAN COUNTRIES Evolution trends 1950-1985; average scenario 1985-2025



This diagram, from the Executive Summary of the BP shows the demographic development in the Mediterranean Basin from 1950 to the 2025 horizon; it refers to a scenario derived from the simplification of the various scenarios used in the full report. The total population of the Coastal States today is about 360 million people. In 2025, in the very near future that is, this population will be between 520 and 570 million people.

But the important thing that can be derived from the diagram is that two thirds of the total population will live in the countries of the South and East of the Basin (today it is one half of the total). In other words, the demographic gap between the North and the South of the Mediterranean will widen and aggravate disparities in other areas: jobs, productivity, resources, agricultural land, quality of life etc. It is the duty of politicians and planners to take into consideration now these developments and to focus on a North-South solidarity which is essential for the protection of the Mediterranean Basin in its entirety.



A NEW RATIONALE FOR DECISION TAKING IS WHAT SHOULD BE DEFINED

MR. MICHEL GRENON TELLS MEDWAVES

In the following interview which he gave to MEDWAVES, the scientific director of RAC/BP at Sophia Antipolis points out the main results of the BP as well as the difficulties encountered, the opportunities offered and the working climate in which the exercise took place these last 13 years. On this occasion Mr. Grenon notes with satisfaction that "a Mediterranean spirit" has come into being.

Q. If you could briefly summarize the results of the BP scenarios, which would you say are those that will have the greatest impact?

A. First and foremost, especially after the year 2000, the development of the Mediterranean Basin will be dominated by the demographic increase in the countries of the South and East of the Basin. One could almost differentiate the BP scenarios according to whether the rate of development will be higher or lower than the demographic rate as concerns certain vital sectors (such as agricultural production, energy consumption, etc.). In the latter case it would mean a gradual decrease in socio-economic well being rather than what we all hope, i.e. a much needed improvement.

Moreover, in a region of fast demographic and economic development (mainly in the countries of the South and East of the Mediterranean Basin) the scenarios have established how strong the link is between development and environment. Not just the impact of development on the fragile Mediterranean environment - physical or biological deterioration which could become gradually irreversible, but also the "returning impact," i.e. the constraints due to this deterioration on the possibilities for development or even on the conditions of development.

In this connection, one is concerned by the inexorable soil erosion in several countries of the Mediterranean basin, regardless of the type of development (fortunately there are some differentiations which lead us toward a balanced development which would not run counter to the environment and the material resources). This erosion, speeded up by the expansion of agricultural activities because of demographic pressure, greatly reduces the potential of agricultural production in a region where the needs are increasing fast (demography and improvement of living standard). In fact, rather than talking about soil, one should talk about **soil, continental waters and forests** upstream (for several countries). The scenarios have shown that all of these resources are unique and must be taken into account and protected. For instance, the deterioration of forests (through overgrazing or overexploitation for timber) leads to loss of topsoil and impaired regulation of the water resources: deterioration of one resource leads inevitably to the deterioration of the other two as well.

Q. What about the Mediterranean Sea?

A. The most upsetting future development seems to be the physical deterioration of the coast (terrestrial strip and infra-littoral level) as a result of the increasing concentration of several conflicting activities on the coast: coastal urbanization, tourist activities, industrial and energy installations (refineries, power stations, on-loading and off-loading ports for hydrocarbons and coal), expansion of agriculture, fisheries and tomorrow aquaculture, transport infrastructure etc. However this littoral and infralittoral zone is vital to the development of several species and its deterioration is a serious threat to life itself in the Mediterranean.

Q. In carrying out this exercise did you encounter many difficulties?

A. Yes, many and of all different kinds; technical, scientific, but also institutional, human etc. From the technical and scientific viewpoint, we can mention for instance the permanent difficulty of studying the links between development, which concerns countries as total geopolitical and economic entities and the environment which is local and localized on purpose in the BP exercise on the "Mediterranean region" alone. However, there is not a precise and universally accepted definition of "Mediterranean regions" and so we were often obliged to vary them somewhat depending on the problem studied (i.e. coastal strip for tourism, but watershed for the water resources).

Another technical difficulty is linked to the inadequacy of the tools used for the exploration of the future: the methodology of scenarios is as much



an art as a science. We must also note the lack of statistical data, especially as concerns the environment. Generally, the statistical series which would be needed over a certain number of years to classify developments or recognize trends do not exist; a lot of effort was needed in order to begin to establish them. Much is still to be done to improve the situation and make the working methods used for the first time in the BP more reliable and more functional.

Q. Does this mean that a large team was necessary?

A. The permanent team at Sophia Antipolis was in fact very small; just a few people. However, we were lucky to have a supporting network of very competent Mediterranean Consultants. Some developed original approaches to economic growth in the medium and long term, to agricultural development, the perspectives of tourism, industrialization etc.

Since there was no tool perfectly suitable and readily available, we concentrated first on the methodological aspects (data banks and studies of coherence and aggregation of very different scenarios) as well as on some fundamental specific studies, such as population and demography, urba-

nization and "littoralization", energy. The permanent team and its consultants thus quickly defined a certain framework, within which the Mediterranean countries could elaborate, to a greater or lesser degree, their national scenarios which were then put together at Mediterranean level.

Q. How was collaboration with the national teams?

A. Very good on the whole, even though you are now touching upon another difficulty of such an exercise: the diversity of the countries and the differences in their state of development. In order to underline a truly innovative aspect of the BP, I'd like to mention that many countries were not very familiar with the scenario approach, even though they regularly practiced economic, or socio-economic planning. Even a country like France, where the research into future developments was born, did not have scenarios for the horizons 2000-2025. But most of the national teams "played the game", some even going all the way. Naturally, this generalized interest made the task of the permanent team much easier. If we can't talk about a true "Mediterranean solidarity" at the level of development, we have often felt a "Mediterranean spirit" and the wish to discuss together problems that are either shared or at least similar. Finally, we never came up against national feelings, as one might have feared in such a project.

Q. Have you felt the "Mediterranean solidarity" in matters of environment?

A. Yes, and it already has a past: after all the Action Plan is 13 years old. However the way one perceives the problems of the environment depends on who you are. Don't forget that the BP has talked with planners and officials responsible for economic development; they are under the pressure of everyday problems (which are no less important!). Note also that environmental problems are especially difficult to define and quantify in time and space. As we have stated in our Conclusions, we are not trying to define "a new economy" but a new rationale for decision taking.

Q. Do you consider the exercise finished?

A. Even though the BP has always been considered as a project limited in time, I personally believe that the worst use one can make of the scenarios would be to think of them as something finished. In fact, either at regional (Mediterranean) level or at national level, such exercises involving scenarios should be continued; one should be going back to them from time to time for reference. The increased rate of development, the scope of social and ecological constraints increase the need for planning. However, geopolitical, social and economic uncertainties make the risks greater. We see that Plans should be fitted with alternative solutions, in other words with scenarios: in the Plans we can have what is desirable and probable, in the scenarios what is possible and unpredictable.

Finally, we should now implement the results of the BP scenarios. In the case of the Action Plan, one can especially think of the implementation at the level of coastal management, in areas where action is most urgently needed. The BP, or its successor, can give the regional planner a certain methodology which will allow him to avoid taking decisions on a case by case basis, and which will enhance cohesion by integrating his actions in a global, long-term vision, in the framework of "sustainable development".

BOOKS AND MAGAZINES

THE GENOA DECLARATION IS PUBLISHED IN THE 10 LANGUAGES OF THE MEDITERRANEAN (UNEP)

At their 4th Ordinary Meeting, the Contracting Parties to the Barcelona Convention had adopted by acclamation on Sept. 13, 1985, the Genoa Declaration on the second Mediterranean decade. They had committed themselves to publish the text in all the languages of the coastal States in order to have it disseminated as widely as possible.

This is already done. UNEP has just issued a booklet where the text of the Declaration is printed in the 10 languages of the Mediterranean: English, French, Spanish, Greek, Italian, Maltese, Serbo-Croatian, Hebrew and Arabic. The booklet is both a reminder of the commitments and a proof that they are being implemented. The last of the 17 points in the Declaration, established for the 1985-1995 period 10 priority objectives. A little over 3 years later we can state that most of them are progressing nicely: the first debalasting stations and waste treatment facilities have been installed, environmental impact studies have been carried out, the transport of toxic waste has given rise to a first series of measures, the monk seal is protected by an Action Plan, the 100 historic sites have been identified and officially approved by the Parties, whereas 50 more will be approved soon. The message of this UNEP booklet is that the Genoa Declaration may be written in 10 languages but it expresses the same will to protect the Mediterranean environment.

REPORTS AND PROCEEDINGS OF THE ICSEM (MONACO) MEETINGS

Synopses of the papers presented during the 31st Congress-Plenary Assembly, Athens, Greece, Oct. 1988.

This work, approximately 400 pages long and published under the guidance of J. Y. Cousteau, contains the summaries of papers presented during the 31st Congress of the International Commission for the Scientific exploration of the Mediterranean Sea (ICSEM) convened at Athens, Oct. 17-22, 1988.

Within the framework of this Congress there was also the 9th Workshop on marine pollution jointly organized by ICSEM and the MAP Co-ordinating Unit. Interested scientists will therefore find, in English or French, all the most recent studies on the Mediterranean area carried out by various ICSEM Committees: Benthos, Marine Geology and Geophysics, Insular Environments, Marine Vertebrates and Cephalopoda. In the same work one also finds the working meetings, round tables, expert meetings and conferences. There are also a list of papers published and an alphabetical Index of the authors of summaries.

A SMOKE-FREE EUROPE

1, 2, 3 and 4, brochures of the WHO Regional Bureau for Europe.

These 4 brochures in a practical and attractive format published in English and French are integrated in the Action Plan on tobacco jointly adopted by the WHO Regional Office for Europe and the EEC Programme "Europe against cancer". Physicians, health workers, planners, legislators and politicians will find there a summary of the main problems faced by the anti-smoking campaign. In this connection, the 4 brochures have an interest which goes beyond the European context and could be a matter of reflexion by the competent authorities in all countries; this is especially the case for brochure number 2 "Legislative Strategies for a Smoke-free Europe", which discusses the legislative measures which could bring about changes in the production, manufacture, promotion and sales of tobacco and affect smoking habits.

IN THE MAP TECHNICAL REPORTS SERIES

A Study on the legal function of the Mediterranean Action Plan

This is a new technical report by a legal consultant, Mr. Evangelos Raftopoulos, and is interesting on three counts: Firstly, because for the first time a functional analysis is carried out of the legal nature of MAP adopted in 1975 at Barcelona by the Mediterranean Coastal States. The legislative and political development of the Action Plan has highlighted the need to reassess the practical implication of such an action. Mr. Raftopoulos stresses the uncommon character of MAP, this instrument of international cooperation. In this connection - and this is the second reason for which this analysis is interesting - the author introduces an original concept, that of "Public Trust". He states that it is almost impossible to explain the legal nature of the Barcelona Convention on the analogy of private law contract and submits the notion of Public Trust found in Anglo-Saxon law; public trust is defined as a legal relationship in which a person - the trustee - has rights which it exercises in the interest of another or for the accomplishment of a particular goal. The author notes: "The Barcelona Convention system is established and operates like a public trust; it is set up, administered and its purpose is progressively determined by the consensus of the Contracting Parties acting in a hybrid capacity, as settlers and trustees." Without entering into the details we can state that the proposal formulated by the author to look at MAP as an "international trust" would allow the re-examination of certain problems linked with its implementation; the proposal therefore acquires obvious practical implications. Finally, in the third and last part, the author applies to Greece the model of compilation of national legislation concerning environmental matters. When other countries, signatories of the Barcelona Convention, will have done the same thing (consultations have already

begun along these lines), one will be able to make a very useful comparison of the various laws through a reference to the legal framework of the Barcelona Convention and of MAP itself. (*The Mediterranean Action Plan in a functional perspective: a quest for law and policy, No. 25, of the Technical Reports Series, UNEP, Athens, 1988*).

THE MAP CALENDAR OF MEETINGS

JANUARY- MAY 1989

XXII Interagency Advisory Committee	9-13 Jan. Athens Greece
Meeting of responsible officials from the 100 historic sites	19-21 Jan. Marseille France
Review Meeting on organophosphorous survey	24-26 Jan. Barcelona Spain
Meeting of Directors of Regional Activity Centres	20-21 Feb. Athens Greece
Meeting of the Bureau of the Contracting Parties	14-15 March Athens Greece
Meeting of responsible investigators of national monitoring programmes	20-23 March Athens Greece
Ad hoc meeting on eutrophication and plankton blooms	4-6 April Athens Greece
Experts Meeting on the Conservation of Mediterranean Marine Turtles	9-10 May Athens Greece

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TRAINING COURSES AND MEETINGS HELD RECENTLY

A Practical training course on containment and recovery techniques at sea, Ercolano, Italy, 28 Sept. - 4 Oct. 1988.

This course was organized by the Regional Oil Combating Centre (ROCC) of MAP with the logistical support of Castalia, S.P.A. (Societa Italiana per l'Ambiente). The cost was shared by ROCC and the EEC on a 50/50 basis.

SPAs and the Genoa Declaration

In conformity with one of the objectives of the Genoa Declaration, i.e. to identify at least 50 additional coastal or marine sites of a common Mediterranean interest, three meetings of the SPA Regional Activity Centre were convened in France, Cyprus and Tunis. They led to the identification of 54 new areas to be protected throughout the Mediterranean region. This list will be submitted to the next meeting of the Contracting Parties for approval.

FAO/UNEP Consultation Meeting on the toxicity of selected substances to marine organisms, Villefranche-sur-Mer, France, Oct. 10-14, 1988.

This meeting was organized in the framework of MEDPOL activities. It discussed the results of the interlaboratory toxicity testing exercise and recommended certain modifications to the UNEP reference methods on acute toxicity. Research work already carried out in the framework of this activity was reviewed and recommendations were made for future research activities.

FAO/UNEP/IAEA Consultation Meeting on organotin compounds, Erdemli, Turkey, Nov. 7-9, 1988.

This meeting had the task to examine the results of the pilot survey undertaken in 1988 to establish the levels of organotin compounds in selected areas of the Mediterranean Sea. The areas monitored were (a) the French Mediterranean Coast, (b) the North Tyrrhenian Sea (Italy), (c) the Southern Coast of Turkey and (d) the Alexandria Coastal Area (Egypt).

The pilot survey has shown conclusively that there are high concentrations of TBT in the vicinity of harbours and marinas which accommodate a large number of ships and pleasure craft. The range of concentrations found is comparable with those found in similar situations outside the Mediterranean region. In addition to the well-known source of TBT i.e. anti-fouling paints, its use in industrial cooling water systems has been shown to result in very high concentrations near the point of discharge. In general, the results of the pilot survey have reinforced the need to propose regulatory action to the MAP Scientific and Technical Committee.

OBITUARY NOTICE

The Monk Seal has lost a friend. On 16 Oct. 1988, during a study mission for the assessment of the monk seal population along the Mauritanian coast, the vehicle carrying 4 French researchers and their Moroccan guide hit a land mine, left there from previous conflicts.

Didier Marchessaux died as a result of the accident. He had carried out several studies on the monk seal for UNEP (RAC/SPA Tunis), IUCN, the WWF and the Council of Europe. He was one of the eminent specialists on this threatened species and had actively contributed to the elaboration of an Action Plan for its conservation. He wanted to be most of all "a man of the field" and leaves the memory of a person who had a passion for the environment and its protection. MED-WAVES and MAP personnel offer their deepest sympathy to his wife and daughter.

Consultation Meeting on Mediterranean health-related environmental quality criteria (WHO/FAO/UNEP) joint project, MEDPOL Phase II, Bled, Yugoslavia, Sept. 12-16, 1988.

The consultation was attended by 27 temporary advisers and participants from 9 Mediterranean and 4 non-Mediterranean countries, and by one

representative each from FAO, UNEP, IAEA, IARC, WHO Headquarters and the WHO Regional Office for Europe.

The objectives of the meeting included the following:

- to review the existing situation regarding mercury and other heavy metal marine pollutants in the Mediterranean;
- to review the results of the current phase of the project on "Methylmercury in Mediterranean populations and related health hazards";
- to make a preliminary review of environmental quality and related criteria and standards eventually required for heavy metal marine pollutants in the Mediterranean; and
- to make appropriate recommendations.

The meeting discussed the results of the first phase of the project during which, after preliminary screening of more than 4000 persons through dietary surveys, a total of 1098 hair samples (659 from Greece, 241 from Italy and 198 from Yugoslavia) were analyzed for total mercury and, where appropriate, for methylmercury.

The results confirmed that there is a positive correlation between seafood consumption and levels of total mercury and methylmercury in hair. However, high-risk individuals were only identified in certain isolated fishing communities in Greece and Italy.

The meeting noted that the Provisional Tolerable Weekly Intake (PTWI) of 0.3 mg total mercury (of which no more than 0.2 mg should be present as methylmercury) established by the FAO/WHO Joint Expert Committee on Food Additives in 1972 had remained unchanged. The meeting agreed that the next phase of the project should concentrate on the identification of groups at risk on a broader Mediterranean basis.

ECHOES OF MEDITERRANEAN ORGANIZATIONS

Coastal Zone 89

The 6th annual Conference 'Coastal Zone' will take place July 11-14, 1989 in Charleston, South Carolina, USA on the specific theme "Broader Horizons in Coastal and Ocean Management". In addition to plenary sessions, there will be a commercial exhibition, short courses and field trips. UNEP (OCA/PAC) will finance the participation of a restricted number of persons from Mediterranean countries who have special experience in matters of coastal management.