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SYSTEMIC AND PROSPECTIVE ANALYSIS FOR MEDITERRANEAN SUSTAINABLE DEVELOPMENT

ACTIVITIES AND OUTPUTS

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Updating of the Main Study

Systemic and Prospective Analysis of the Coastal Areas

Training – Information – Publications

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INTRODUCTION

Subsequent to the global prospective exercise on the "Futures for the Mediterranean Basin", the Blue Plan activities, in the field of the prospective analysis of the relationship between development and the environment, are carried out on three different lines.

The first corresponds to the overall updating of the main study i.e. the updating of the global Mediterranean scenarios. For a prospective study to be meaningful in illuminating decision-makers, it is essential to be able to situate the recent evolutions with respect to scenarios established under different initial conditions and hypotheses that may have changed in terms of their premises. Updating may concern the revising of the scenario evolution hypotheses or their results. During the 94-95 biennum, the Blue Plan generated a great deal of reflection to revise the evolution hypotheses in the Mediterranean basin, particularly in order to allow for the disruptions in the international geopolitical field in the beginning of the 90's, and for the emerging growth of the sustainable development concept, both internationally and nationally. In addition, updating of the tourism scenarios was carried out in this activity sector which has proved to be a major factor in economic development with its complex relations with the environment and society, in particular in coastal regions.

The second line of work concerns local prospective analyses in coastal regions. This involves applying to the local/regional level, the prospective approach adopted globally by the Blue Plan insofar as the results of the global scenarios highlight the conflicts and problems to be expected in coastal areas.

This work includes two different aspects:
- adaptation of the Blue Plan method to small areas and a search and development of the prospective tools at the coastal level,
- participation of the Blue Plan in the MAP Coastal Area Management Programme within the framework of the "Development/Environment Scenarios" activity.

The third line of work involves everything concerning the communication on method, experience and results of the Blue Plan and corresponds to the Training-Information-Publication function. The Training/Information aspect has a two-fold goal, to make decision-makers aware and initiate them in terms of the interests of prospective approaches while little by little, forming a network of prospective specialists within the institutions in charge of planning, development and environment in the Mediterranean countries and coastal areas. The Publication function may address a wider public.

It should be pointed out that the prospective approach as presented was coordinated at BP/RAC by Elisabeth Coudert after the departure of Michel Grenon in 1994, the scientific manager of the Blue Plan activities since 1980.

1. UPDATING OF THE MAIN STUDY

1.1 The implications of a sustainable development model applied to the Mediterranean area

The five Blue Plan global scenarios have been established according to the evolution hypotheses chosen ten years ago in the international economic and geopolitical context of the time. Radical changes, they might be called "surprises", have occurred since, making some of the generic hypotheses at the basis of the Blue Plan global scenarios obsolete. In particular, globalization and internationalization processes, already working during the previous decade, have become considerably stronger and are moving faster; East-West antagonism has left the field open to new forms of conflict.

In addition, the concept of sustainable development has led to a great deal of reflection and generated a great deal of scientific literature concerning durability or sustainability models. The Development/Environment problematic has become broader and richer. On this point, the 1992 Rio Summit was an important moment for the outspreading of ideas concerning sustainable development, two decades after the founding act at the 1972 Stockholm Conference.

At the scale of the Mediterranean problematic, the question is how it is possible to conserve the Mediterranean ecosystem and meet the requirements of the slow-growing population on the Northern countries, but whose life level is not always compatible with maintaining the "nature" capital, with strong growth population on the Southern and Eastern countries, aspiring rapid improvement of the life level.

To reconcile economy, society and ecology, to find a new dynamism for cooperation, to use environmental questions as a lever for research of a new growth perspective and growth that is acceptable in its form and end purpose, are the current challenges facing the implementation of the sustainable development policy in the Mediterranean and more specifically:
- What modes of economic growth would ensure greater social well-being in the countries of the basin while remaining compatible with the improvement and conservation of the Mediterranean environment?
- How to improve the compatibility between economy, society and environment, in order to achieve the common optimum on these three lines?
- By what practical and operational strategies could this system with its three basic parameters be made to evolve while the objectives are not sufficiently explained and assumed nor the global level, nor at the level of the governments, nor at the individual level?

In order to search response, the Blue Plan in June 1994, in cooperation with the French Ministry of the Environment and the DATAR, whose financial support completed the budget allocated by MAP, began a study[1] to identify the implications of a sustainable

(1) entrusted partly to Guy LOINGER, economist and sociologist, professor at Paris University I, General Secretary of the Regional International Prospective Observatory (OIPR) and of the International Study Group for Territorial Strategies and Local Economy (GEISTEL)

development model applied to the Mediterranean area. The levels to be taken into consideration range from global to micro-local and include the intermediate regional level. That is why this study has been designed through various modules that combine the globalizing approach concerning the basin with test cases allowing for a spatialized approach to the problems involved. Carried out more or less simultaneously, these modules concern:

- going deeper into the sustainable development concept in the various disciplinary fields, and clarifying it;
- analyzing the Mediterranean in geopolitical terms at basin scale to allow for major evolutions over the last decade (East-West changes, GATT, process of peace in the Middle East, European Union, etc.);
- updating and analysis of the socio-economic and environmental parameters to obtain an up-to-date analytical base;
- systemic synthesis of the previous elements to choose key variables applicable to renewed Mediterranean prospectives;
- revision of evolution hypotheses according to a trend-related mode in which the bases of the system do not change but where the conjuncture varies and the parameters fluctuate, and in an alternative mode in which the social models change to create sustainable development conditions;
- regional/local highlighting of implications involving alternative evolution hypotheses considering socio-cultural and socio-economic constraints by means of field surveys more particularly concerning the actors' logics.

Only the first three modules are now available. At the end of 1995, we will have the revised hypotheses and in-the-field applications concerning the Western basin of the Mediterranean. Applications to the coastal regions of the Eastern basin will be available during the following year, depending upon the activity program and the allocated means.

Therefore, this study should be a base for renewed prospective approaches covering the 2000-2050 period, once the necessary means have been mobilized.

The sustainable development concept

Sustainable development is defined in the World Environment and Development Commission's report of 1987 as the process of "responding to the needs of the present generations without compromising the possibility of future generations satisfying theirs".

Note that the word environment does not appear in this definition, symptomatic of a shift of the problem center from the environmental field to a field that could be defined as that of alternative development. Note that in this mode, there is an implicit development concept but centered on other bases, other ends and other modes. This sustainable development concept should be considered as a quest to optimize a system, that of the current generation, with respect to the aspirations and needs of the future generations. It is also expressed as a three-dimensional system with the past (the planet's ecosystem, inheriting more than 4.5 billion years of history), the present (the relationship between ecosystem, economy and society) and the future (not compromising the needs of future generations).

Thus, a central aspect of this concept is its strong time-related basis, not only through the past/present – the present as inheritor of the past –, but also the present/present – in which intra-generation

aspirations are taken into consideration – and the present/future – which means acting today by integrating the implication of our actions with respect to the future, in term meaning anticipation of the future that is liable to happen.

Is this concept "confused", as is sometimes heard, is it ambiguous or obscure? The intelligibility of the concept is nevertheless obvious. It is true that it can be confusing for several reasons.

Acting today according to the aspirations of future generations gives rise to a difficult problem because, by definition, the aspirations of future generations are not known. We have to assume that they will be fundamentally like those of today.

If we consider the ecosystem as equivalent to a stock of resources affected by entropy, at its own rate deriving from its own logic, contemporary societies are a powerful entropic accelerator aiming to satisfy humanity's current needs; nobody has found a miraculous solution for producing any manufacturing object without a exploiting a number of fundamental and non-renewable resources of the ecosystem which is therefore, inevitably, bound to be degraded, thus reducing the potential of the available resources for future generations, either directly (hydrocarbons, gas, etc.) or indirectly (atmospheric pollution, etc.).

The sustainable development concept also gives rise to problems in the institutional and economic fields.

In the institutional field, preserving nature's capital has meant a refusal to engage a number of irreversible processes for humanity and the global ecosystem, meaning that individual and collective agents are guaranteeing and protecting nature's vital cycles.

In the economic field, defending this alternative logic seems very synonymous to fight a losing battle.

The sustainable development concept enters into the heart of the contradictions existing between powerful economic interests, often referred to as "vital" interests, versus the "aspirations" to the quality of life, to the non-reduction of biodiversity, etc. whose human, moral, aesthetic and philosophic value is indubitable while their merchant value is low or zero and it is difficult or even problematic to take them into consideration in the economic logic. It is only possible to switch over ecosystem protection into economic interest by attributing a "value" to it, if the system gives it a merchant value, i.e. a scarcity in the economic sense of the word.

But the merchant and industrial system has always endeavored to exploit nature "as if" it had no value, as if it possessed infinite resources. In its way, the system has fought against its scarcity, unceasingly exploiting new oil fields, opening up new mines, destroying forests without replanting them. The constitution of productive capital, over the centuries, has used and abused its aptitude in playing the part of predator living on its unearned income.

It is a major challenge to switch to a new economic paradigm based upon nature saving after rational labor saving of the post-war years. The legal aspect of the problem is fundamental too because, paradoxically, recognizing that the ecosystem has a "value" involves intermediation, that of the Law. Because, only the Law, by the imposing of a system of standards that must be taken into consideration at the risk of otherwise paying penalties or fines, can constrain the economic system to take sustainability and durability

seriously. But Law implies the establishing of means ranging from the definition of standards, considered as limits and barriers, to their recognition by the economic actors who have absolutely no interest in taking them into consideration.

The globalization of the economy is also affecting ecology: this means that the taking into consideration of sustainable development is based upon international law which brings in constraints, and on a certain global "eco-citizenship".

In terms of the likelihood of the sustainable development project going through, should we consider the objective to be improbable, an utopic intention? Probably not as much as one might think. Indeed, it is as if the economic system was in the process of generating, in a number of fields, its own limits because, originally, a number of contradictions obliged it to react by adjusting its method of operation and because its dynamism is opening upon new horizons that are making some production processes spontaneously obsolete.

In that way, the greenhouse effect is reinforcing the widespread of ecological concern in the public opinion, obliging companies to rethink the ergonomics of their products or otherwise be disqualified in the race towards winning over the public. This new situation is characterized by the idea that ecology is a means of making business, in the liberal sense of the word. Further, data processing has not yet produced all its effects. A new industrial revolution, at least equal to that of the iron and coal age of the XIXth century and the electricity age at the beginning of the XXth, is taking place before our eyes with information highways, remote processing systems and multimedia. But the gearing together of standardized distribution of universal data processing applications and that of global ecosystem protection may open up radical new perspectives concerning social, political, ideological and institutional issues. In a way, an another optimum economic paradigm is now emerging.

In this respect, the decisive step forward that the problems of sustainable development represent is that of coupling economic and social issues under new conditions, through a new practice or social "praxis". It is underlined by the idea that the life level of an individual cannot simply be measured in terms of merchant consumption but also in terms of physical, intellectual and cultural well-being, availability for others, and non-merchant creativity.

This is not just a matter of equity but also a mode of life. Another couple appears, the relationship between the new conditions of wealth sharing and the advent of another mode of living, giving a new value to personal development. Today, social progress means better distribution of wealth coupled with a new mode of living. It is not a case of one or the other but of both at the same time.

Thus, the strength of the sustainable development concept resides in its capacity to have the current productive system evolve towards a global system ensuring "development in respect of the environment, technically appropriate, economically viable and socially acceptable to meet the needs of the present generations without compromising the possibility of the future generations satisfying theirs". This is the definition of sustainable development adopted by the Blue Plan based on the Bruntland Report and FAO.

Elements of reflection for the geopolicy of the Mediterranean future

The below analysis is based on the idea that there is a latent or explicit contradiction between two trends or tropisms.

On the one side, the Mediterranean space, or the Mediterranean basin, represents a relatively strong unit in terms of its global ecosystem, in particular thanks to its climate, marine environment, coastal vegetal cover, physical geography and that might be called a cultural and social "Mediterraneanness". In the representations, this leads to a relatively strong identity logic although it varies enormously in its concrete local expressions.

On the other side, the Mediterranean space is made up of a series of spatial and territorial sub-sets each belonging to wider sets enclosing them, meaning that the socio-economic, cultural and ideological challenges of these sub-sets must be defined with respect to other reference systems, placing them in a logical arrangement marked by the constraints and external processes affecting them.

Accordingly, it is as if there were a double tropism, one in favor of the cohesion of the Mediterranean ecosystem and its unitary expansion, and integrated in its social, human and cultural form, and the other in favor of dependence on socio-economic and political mechanisms that are powerful, external, exogenous and not cohesive with respect to one another regarding the Mediterranean space. They are a source of cleavage, opposition and bitter and repetitive antagonism, often having serious geopolitical consequences.

On the one hand there is a gravitational effect, on the other, one of divergence. This has led to more or less serious confrontations and, in the best case, the indifference of the sub-sets with respect to one another, an absence of relations, a relational gap with the regulatory mechanisms so that the sub-sets have no a priori reason to gear with one another because their epicenter is based upon stakes that do not concern, or only marginally, the Mediterranean problematic.

We are confronted by a complex attraction/repulsion, cohesion/segmentation phenomenon which is traversing and undermining constantly, and has possibly been doing so for centuries or even millennia, the "mare nostrum". This is a space for encounters, a border space, a point of attachment and friction between various systems and simultaneously, an ontological need for communication, interrelation, mixture, exchange, etc. The Mediterranean space is a major "problematic" space on today's planet and will be a problem tomorrow, a paradox within which forces are constantly forming and breaking down.

The notion of a system is (implicitly) referred to while attempting to decide which are the main systems structuring the Mediterranean within which the various sets mentioned appear as sub-systems belonging to two different areas. First, they belong to the Mediterranean system, the Mediterranean "geo-ecological" system and on the other, belong to other socio-economic, political systems, etc. Therefore we have to define these systems and their relationships with other systems. Then we must decide, for each basic system, what are the main forces leading to cohesion/articulation with other Mediterranean systems and what forces move them away from the other Mediterranean systems i.e. on the one side, endogenous forces in favor of "relation" and, on the other side exogenous forces

that are internalized by the system considered and that move away the other systems.

Deciding in what direction the trends and perceptible fractures will be at the present time is open to discussion. All we can say is that as regards economy, the significance of the South Mediterranean in terms of commerce with the countries of the European Union will tend to decrease with time, revealing an "Euro-Mediterranean disconnection" (H. Regnault) resulting from an evolution in exchanges:

"The Western European countries are homogenizing and intermingling: intra-EEC trade which represented 45% of the imports of EEC countries in 1965 (re-established at twelve), amounted to 59% in 1987. Conversely, the share of proximity areas, from the Soviet Union and Eastern Europe to Africa, and including the Arab world, dropped from 31% to 21% of the extra-EEC imports while Asia climbed from 12% to 25% and the NICs (New Industrialized Countries) in Asia increased from 1.5% to 7.3%". (DATAR)

Furthermore, analysis of the DG-XVI report on commercial relations between the European Union and the South and East Mediterranean countries clearly reveals this phenomenon of disconnection:

"The evolution of commercial exchanges between South and East Mediterranean countries and the Union is favorable to the latter. Exports from the Union to these countries increased from 7.9% exports from the Twelve to the rest of the world in 1989 to 9.5% in 1993. In particular, they concern agricultural and agro-food products as well as technological products. In addition to energy, which represented 50.6% of the exports from these countries to the Union in 1990, exports to the Union were shared between clothing (13%), agricultural produce (7%) and electrical-electronic equipment. In general, imports to the Twelve from these countries remained more or less stable at around 7% from 1989 to 1993".

Obviously, observations such as these tend towards an increasing rift between North and South on economic matters. But the socio-political, institutional, cultural and ideological system is very sensitive to the evolution of economic trends: it plays the part of economic trend accelerator. This awareness has led to a sustained effort in the European Union in favor of cooperation with the South and East Mediterranean countries (5 billion Ecus in the next few years, as much as for the East European countries). But these sums might be insufficient to put the South and East countries back on a growth curve that is compatible with what the population expects. Therefore, the risk of disruption is still a latent or explicit threat and its counterpart, the question of war or peace in this sensitive area of the planet still remains.

The socio-economic and environmental parameters

i Indicators for economic and social development

The basis of analysis involves knowledge of the population in the Mediterranean basin countries and the major trends that are apparent for the 2015 and 2025 horizon. Taking into consideration the countries of ex-Yugoslavia and the Gaza/Cisjordan entity, there are 23 countries with 402 millions inhabitants in 1992 and a projection of 554 millions in 2025, an increase of approximately 150 millions inhabitants, over one third (+37%) in just 33 years.

If we refer to the Blue Plan definition of the "North" and "South" and "East" Mediterranean countries, the trends appear as follows:

	1992		2025		
North	191,9	(47,6 %)	195,9	(35,3 %)	+4 million (+2 %)
South and East	210,5	(52,3 %)	358,0	(64,7 %)	+147,4 million (+70%)
Total	402,4		553,9		

Between 1965 and 1990, the GNP of the South and East countries of the Mediterranean increased at 3.1% per annum. But the GNP/inhabitant growth was only 1.8% per annum. In terms of income per inhabitant, adjusted by purchasing power parity, the average level was 26% that of the EU in 1960 and 23% in 1990. Accordingly, three countries of the Union, France, Italy and Spain, with 154 millions inhabitants (i.e. 37%), represent 85% of the overall GNP. The rest of the population (256 million or 63%) shares the remaining 15% of the overall GNP. In terms of GNP per inhabitant, the average differential is 1 to 10 between the two groups.

In the South and in the East, more specifically, these disparities are shown by an infant death rate still far too high, more than 13 millions people without access to health services, 30 millions inhabitants without individual drinking water supply, and 33 millions people without sewage facilities, etc. These phenomena are worsened by an accelerated process of urban development, increasing from 40 to 60% in many countries on the South and East. With urban growth rates of 3 to 4% per annum, none of the countries can keep up with these rates in terms of infrastructures, equipment, housing construction and public services.

ii Coastal development ("littoralization") indicators

While total population reaches 402 millions, the coast accommodates 146 millions of them (36%), 13 millions more than in 1983. Applying the same rate to 2025, the coastal population would be 200 millions inhabitants, implying 54 millions more. The urban coastal population in 1992 was 93 millions, 11 millions more than 1985. And the urban population of the coast would be 128 millions inhabitants in 2025, meaning more 35 millions from 1993 to 2025.

But this calculation applies to constant "littoralization" and urbanization rates. If we assume that the urbanization ratio levels out with respect to that of the developed countries (from 60 to 70%), the urban population increase on the coast would not be 128 but 160 millions inhabitants and the increase would go from 35 to 67 millions. If the coastal population factor increases (from 36 to 40%), the urban population of the coast would increase from 93 to 176 millions i.e. +83 millions (+89%), almost the double, representing a considerable challenge.

Provisional conclusion: Which operational strategy for sustainable development in the Mediterranean?

The hard core of the sustainable development concept is to optimize relations between three factors: economics, social and environmental issues. In current societies, we know how to optimize economics and profit but it is to the detriment of social and environmental issues except when the environment becomes a direct or indirect economic value. However, in such a case, the environment is often diverted and appropriated by those who have the means to do so.

Or we improve social issues and solidarity but to the detriment of growth and often leaving the lifestyle out of account. The example of the former Soviet countries convincingly shows that social

progress is not necessarily compatible with strong awareness of the environment. Either we improve the environment, while marginalizing economic aspects, considered as incompatible with a search for a standard of living and a frame of life.

But none of this goes towards sustainable development. Sustainable development is at the point of confluence of the three fields, of these three universes, which is why this concept is particularly interesting because it is a major challenge for humanity, at the dawning of the XXIst century. The sustainable development concept represents a major challenge because it involves realistic utopia aiming at progress by a search for consensus between actors in favor of contradictory and even antagonistic logics.

On this point, we should re-examine all the categories of thought and action so that each of the three universes, economic, social and ecological, becomes compatible. Above all, sustainable development is an integrating model. It is a process and not a state to be achieved. It is only possible and feasible in global terms but action to promote it must be local. Beyond this reflection, we have to set up the means of moving from generic concepts to their operational formulation, i.e. to move from a concept to the establishing of a strategy.

1.2 Mediterranean tourism prospective

Tourism is one of the key elements to the Mediterranean system. In terms of international tourism, in 1992, the basin countries received 33% of the world's tourists, almost 160 million people. International tourism receipts were more than 85 million US$. National tourism, for which precise data is not available, has been evaluated at around 112 million people in 1990 and has a considerable potential for growth insofar that the holiday factors are still low in many highly populated countries. Coastal areas of the basin countries attract 51% of international tourists and 56% of national tourists. The share of tourism is estimated at more than 7.1% of the GNP for all the Mediterranean countries. In 1990, the coverage ratio of the commercial balance deficit by receipts from international tourism exceeded 34% for Eastern and Southern Mediterranean countries. Direct and indirect employment of the tourist sector in 1992 concerned more than 6.1 million persons, without including, obviously, the share of undeclared activities of the informal economy that is almost impossible to quantify. These few figures show the importance of this sector for the economic development of the basin countries.

Furthermore, relations between tourism and environment fall into a logic of exploitation and conservation. The environment (that is, sea, beaches, sun, landscapes, historical heritage, etc.), for tourism, is both a raw material to be exploited and a resource to be conserved (in terms of quantity and quality) for the durability of the tourist activity itself. In coastal areas, this problematic involves specific developments such as leisure ports, dikes and breakwaters to protect the beaches, hotel complexes, secondary homes, holiday villages, the design and management of which often emphasize exploitation more than they do the requirement of protection.
Tourism is also a powerful factor for getting to know other cultures and societies, for the mixing of ideas and reciprocal influence, discoveries and meetings. It could and should become a real school of tolerance and respect of others. The conditions for implementing tourist activity are not always favorable to this aspect of matters. As it stands, tourism is nevertheless a factor for the evolution of

societies as a whole, a phenomenon that is amplified by the internationalization of exchanges.

Tourism is a dynamic phenomenon per excellence, in time and space following and sometimes inducing technical progress and consumer modes. It is a complex system that is constantly changing, that must be monitored and analyzed continuously in order to incorporate it into a veritable process of sustainable development in the Mediterranean.

On this point, the Blue Plan has already compared the global scenarios drawn up in 1985 with the evolution from 1985 to 1990. Today, the publication of the "Tourism" fascicle is an opportunity for fuller updating of the possible futures of tourism in the Mediterranean basin.

First, this update addresses current uncertainties affecting the future, not just of Mediterranean tourism, but also of all of the societies in the following fields:

- geopolitical
  - federalism in the North and South or preponderant nation states;
  - excessive nationalism and regionalism or overall cooperation;
  - radicalism in the North and South or tolerance and humanism;
  - international terrorism with repression or extension of the peace processes;
  - territorial, economic, commercial conflicts or negotiations and consensus.

- economic
  - continuous structural crisis or accelerated privatization of economies in the South and East of the Mediterranean;
  - energy crisis or relative abundance due to new discoveries or new practices;
  - intense industrial competition or multiplication of partnership agreements;
  - globalization of transport enterprises (mega-airlines, European railways, multinational bus companies) or total or partial deregulation of national and international transport;

- social
  - dual societies with hyperactive and unemployed members or more egalitarian and equitable societies;
  - increasing or decreasing of the income differential between North and South;
  - networks of European (or transnationals) urban elite and rural living apart societies at the national or regional level.

- technology
  - delays in putting into service 800-1000 seater long-haul aircraft;
  - delays in constructing the permanent connection via the Straits of Gibraltar and the choice of link type;
  - generalization or not of TGV (high-speed trains) in Mediterranean Europe; extension or not of the high-speed network to the East and South (Paris-Ankara, Copenhagen-Casablanca);
  - speed of distribution of "virtual reality" techniques allowing travel... at home;
  - speed of distribution of the world cellular telephone system;
  - delays in installing world tourist reservation and information systems;

- generalization or not of home robotics in tourist accommodations and amenities.

- cultural and environmental
  - water crisis or multiplication of resource management techniques and tools;
  - development and sustainable management of coastal regions or increased "coastalization";
  - protection of coastal eco-systems or anarchical concrete casting;
  - education policies emphasizing eco-citizenship or technical hyperspecialization;
  - egalitarian and equitable or elitist development of cultural and sports practices;
  - return to nature and spirituality or dehumanized urbanization and materialism;
  - encouraging of mass tourism or of quality tourism.

In the second place, the analysis of international tourism evolutions (arrivals and receipts) reveal more or less heavy trends such as:
- resistance of traditional seaside tourism, often of a family and seasonal nature, which is being maintained although it is no longer heavily preponderant
- confirmation or appearance of destinations and motivations, particularly with a cultural leaning: Italy, Greece, Morocco, Turkey, Egypt. These destinations offer a combination of seaside tourism, sports or discovery and cultural advantages.
- importance and diversity of the available accommodation: if the number of hotel beds is more than 5.8 million for all the countries, there would be more than 33 million complementary beds hence the importance of second homes, rentals, campgrounds, holiday villages, bed and breakfasts and rooms to let, new temporary leisure accommodations, etc.
- persistence of "tourist gaps": together , Albania, Algeria, Lebanon, Libya and Syria represent fewer than 3% of arrivals in 1992. Therefore, the Mediterranean region has enormous tourist potential that could be enhanced in the future.
- specific aspect of tourism among nationals who are not resident in Mediterranean countries, who work in Northern Europe and regularly come home.
- emergence of new tourist products and behavior: the increasing vogue for cultural tourism, the multiplication of exhibitions and festivals, the development of active leisure tourism, rural tourism, spas and baths, fitness.
- spectacular expansion of cruises, yachting and nautical sports.
- significance of air transport: more than 34% of international arrivals are by air.
- development of intra-Mediterranean international tourism: France, Italy and Spain have become major emitting countries first and foremost to the benefit of the Mediterranean. With a certain offset, Greece, Israel and Turkey are following the same way.

Third, the up-dating of Tourism scenarios has focused on flows. The WTO (World Tourism Organization) has made projections for international world tourism. The results indicate 660 million arrivals by the year 2000 and 935 million by the year 2010. The Blue Plan has its own projections for the year 2000 concerning international arrivals in the basin countries. A low hypothesis indicates 156 million international tourists and the high one indicates 190 million. Note that according to the data available from the WTO, international arrivals in the basin amounted to 160 million in 1992, reaching and already exceeding the low projection. The healthy Mediterranean tourism in terms of quantities was a motivation to imagine, for the

year 2010, relatively high tourist figures with respect to prior scenarios.

Four scenarios have been updated. They fit into the global scenarios proposing a growth range for the next thirty years. These growth hypotheses were revised in 1992. Tourism scenarios were drawn up in coherence with the type of economic growth and the international context specific to each scenario.

Hypotheses of the annual economic growth rate for the period 1990-2025

	Slow growth scenarios	Strong growth scenario
South and East Mediterranean	2.7/3.1	4.8/5.7
United States	1.6	2.8
Japan	3	3.9
Europe	2	3.3

Source: Royer, Blue Plan, 1992.

The hypotheses of the worst trend scenario T-2 are as follows:
- "unique European" currency is achieved around 2025;
- the South and East Mediterranean countries still do not manage to master their inflation and apply successive devaluations;
- the Northern population stagnates or decreases; the Southern population explodes;
- immigration phenomena worsen and are badly controlled;
- unemployment strikes all Mediterranean countries, but in the South and East it generally exceeds 20% of active population;
- woman's status only changes slowly, even dropping back in some South and Eastern countries to prevent greater numbers of women appearing on the work market;
- working hours do not decrease but more and more precarious working formula are set up with a dual society;
- his situation leads to cyclic upsurges of terrorism and a high crime rate;
- cocooning is prevalent, people staying at home for economy and safety.

The worst trend scenario T-2 is characterized by keen international competition, low economic growth (around 1.5% for the European Union countries and 2.5% for the other Mediterranean countries), high unemployment, social and political crises nourishing violence or even terrorism that will be ever more present. In this unfavorable context, tourism cannot develop. Accordingly, the departure rates will drop around the horizon 2010 and there will be very slight growth around 2025. This context will also lead to international tourists spurning Mediterranean destinations in spite of sustained world growth thanks more particularly to the development of new tourist basins (Pacific and Caribbean areas). That is why the share of the Mediterranean basin in world tourism will lose its leading place and attain only 26% by the horizon 2010 and 23% by the horizon 2025. Similarly, this context will not enable any subsequent balancing of international tourism in the Mediterranean: the share of Mediterranean countries not belonging to the European Union will not exceed 19% in 2010 and 21% in 2025.

The moderate trend scenario T-3 hypotheses can be summarized as follows:
- the European currency becomes an unique currency around the year 2000;

- economic growth takes off again in Southern Europe with rates of around 2.5%, helping along the Mediterranean economy. The growth rate of the South and East countries reaches 4%;
- unemployment does not exceed 10/12% in Southern Europe and 15/20% in the Southern and Eastern Mediterranean countries;
- the population in the North of the basin remains stable and the growth in the South slows down considerably;
- woman's status improves in the Southern and Eastern countries; in Europe, women move into powerful positions, at the head of many companies and play a more and more important part in couple and family vacations (by sharing the expense);
- there is again talk about a pleasure society and people refuse restrictions;
- tailor-made supremacy is prevalent, thanks to the computer;
- the process of peace in the Middle East and the Balkans slowly begins without any fundamental changes;
- the European Union associates with Turkey and the Maghreb countries;
- terrorism is contained although a few social upsurges occur, crime persists in certain built-up areas and mass tourism areas; the Mafia is less well controlled and begins to spread into several specific tourist economy sectors;
- working times are structured in favor of longer vacations during the year and less towards reduction of the weekly working hours;
- companies become more powerful with respect to local communities.

Moderate trend scenario T-3 fits into a liberal market economy with sustained economic growth. Unemployment drops off substantially or stabilized but is still there. There are still social tensions and inequalities, a cause of sporadic violence. In this context, national tourism increases regularly The departure rate reaches 55 to 60% in the European Union Mediterranean countries in 2010 and 60 to 65% in 2025. In the other countries, the values are respectively 15 to 25% and 25 to 30%. International tourism in the Mediterranean is maintained at around 32% of the world market by horizon 2010 and 29% by horizon 2025. Economic growth results in considerable investment into tourism in the Mediterranean Southern and Eastern countries enabling them to receive 24% of international Mediterranean tourists by horizon 2010 and 28% by horizon 2025. Therefore, there is better general geographical distribution of tourist flows.

The alternative cooperation scenario A-1 hypotheses appear as follows:
- lasting peace around the Mediterranean;
- the European currency unit, the ECU, becomes the sole currency around the year 2000;
- the ECU zone system is set up around the Mediterranean;
- a four-day working week without too many effects upon direct and indirect income is established;
- strong assistance from North to South (more than 1.5% of the GNP of rich countries in the North devoted to this budget) with multiplication of South-South and South-North exchanges;
- reinforced cooperation structures of a non-bureaucratic type in the form of networks;
- unemployment figures down considerably to around 5% in the European Union countries, less than 15% in the others;
- populations stabilize around the Mediterranean and fear of immigration drops off in the North;
- strong trend to equal conditions for men and women in work and everyday life, including choice of vacations and tourist destinations;

- importance of solidarity "clans", family groups, friendly groups, associations, team work brought to the fore, multiplication of networks;
- large companies become less powerful with respect to small and medium-sized companies and local communities.

The alternative cooperation scenario A-1 is one of strong economic growth (around 3.3% for the European Union Mediterranean countries and 5.7% for the others) resulting in strong growth in per capita income, highly favorable to tourist development. Accordingly, vacation departure rates are high, reaching 60 to 65% by 2010 and 65 to 70% by 2025 in the European Union Mediterranean countries and 25 to 30% and 30 to 40% respectively in other countries. This scenario of intense European Union/Mediterranean countries cooperation leads to a strong flow of investment into the tourist sector all around the Mediterranean, capturing 37% of the world's international tourism by 2010 and 35% by 2025. By virtue of these investments, true balance begins and Southern and Eastern Mediterranean countries welcome 30% of international Mediterranean tourists by 2010 and 40% by 2025.

An integration alternative scenario A-2 is a rupture from the historical trends. It proposes a self-reliant development strategy presupposing a quest for complementarity between the modern sector and the sector of small and medium companies as well as a reduction in dependence, in particular when related to food. This scenario involves infra-regional cooperation with a trend towards confederalism.

It is also characterized by strong economic growth (around 3% for European Union Mediterranean countries and 4.8% for the others) but, nevertheless, less strong than in scenario A-1 due to the lesser involvement of the European Union. The departure rates will be identical to those of scenario A-1 except for the Southern and Eastern countries by horizon 2025 when it is assumed that regional integration will favor local development so that more and more people can leave on holiday. The lesser growth than in scenario A-1, and perhaps above all the diversification of activities due to regional integration and a flow of investments from the European Union that is smaller than for A-1, will lead to only 34% of international world tourism collected by 2010 and 32% by 2015. Similarly, the geographical distribution of international Mediterranean tourism will be less favorable in Southern and Eastern countries than in scenario A-1: 27% by 2010 and 32% by 2025.

On the basis of these hypotheses, the number of national and international tourists has been quantified by the 2010 and 2025 horizons. Depending on the scenarios, the number of tourists will vary from around 370 million (T-2) to 527 million (A-1) by horizon 2010 and 442 million (T-2) to 655 million (A-1) by horizon 2025.

In the Mediterranean coastal areas, estimated tourist figures vary from 196 million tourists (T-2) to 281 million (A-1) by horizon 2010 and 234 million (T-2) to 353 million (A-1) by horizon 2025. Some of their impacts upon the environment have been quantified i.e. the annual water consumption by tourists and the annual production of solid waste of tourist origin. The trend scenarios, because they indicate a smaller number of tourists, might appear to have less serious impacts upon the environment than the alternative scenarios which, even so, consider the protection of the coastal environment to be a basic hypothesis. This would be a hasty conclusion insofar the trend type scenarios, favoring individualism, private transport and immediate performance, are greater risk factors whether natural

(floods, fires, etc.) or ecological (serious pollution, toxic waste) or human (transport and health accidents). In addition, they are those that lead to the most acute cultural conflicts in coastal regions because of social injustice and the acute economic inequalities they generate. In other words, space management policies and the acknowledgement of the environment, as applied by the alternative scenarios, differ from the trend type scenarios and will save the quality of the living space and the environment, in spite of the increased number of tourists.

Subsequent to the updating of the Mediterranean tourism prospective, we have to emphasize again the crucial problem arising from the lack of available, reliable data that is consistent and therefore comparable and recent concerning the various countries and the coastal regions, their international and national tourism both in terms of quantity and quality. More often than not, experts are obliged to estimate on bases that are open to discussion and a source of accumulated errors. Cooperation between countries, communities, professionals and associations should make it possible to improve:

- the census and evaluation of all the natural, cultural and human resources as well as all the equipment and infrastructures that exist in the region, both in terms of quantity and quality, to better see how they could be used in time and space and what their environmental impact would be,
- quantitative and qualitative evaluation of the national and international tourist demand in Mediterranean regions.

2. SYSTEMIC AND PROSPECTIVE ANALYSIS OF COASTAL AREAS

2.1 Development of prospective tools for the coastal level

The prospective for coastal zones applied in order to assist the decision-making process, calls for excellent knowledge of the current situation, a 10 to 20 year retrospective to highlight the major trends and the current processes, the simulation of future situations to identify alert situations and evaluate the alternative solutions. Subject of these investigations is particularly complex, concerning all the relations and interactions between the three systems "Environment", "Development" and "Society".

Many tools can be used. They can be systemic tools (such as mapping, structural analysis matrices, analysis of actors' action), statistics (gathering and processing of data and indicators), mathematical tools (econometric models, dynamic models), data processing tools (database management systems, geographic information systems – GIS, expert systems).

These tools can be used either at global and national level or at the regional/local level. The geographical level of the survey area determines the acuteness of the desired information. These tools correspond to the needs and objectives of three phases Knowing – Imagining – Proposing, structuring the prospective approach of the Blue Plan. In general, data processing tools have the particularity of allowing easier and higher performance use for the other tools. They can bring into the same methodological approach, several complementary tools.

Exploring the possible futures of a coastal area consists in long-term evaluation of interactions between socio-economic development, environment and management, on the basis of different evolution hypotheses. In other words, we have to consider several possible combinations between the utilization of natural environments and the socio-economic development in a given territory. Therefore, we cannot dissociate socio-economic prospectives, environmental prospectives and spatial prospectives.

In this context, a decision-making tool should allow a choice between several solutions on the basis of land-use simulations, established according to various socio-economic evolution hypotheses and of their impact upon the environment.

An "integrated" system based upon a Geographical Information System, with modules for access to information, analysis and simulation that are highly interactive, making full use of expert systems connected to graphic interfaces, appears to be the optimum solution. A system like this leads us to make two remarks:
- a considerable amount of geographical and technical information is necessary,
- it is difficult, if not impossible, to produce a tool like this which has any universal scope. It has to be adapted to each coastal zone and its problems.

For prospective studies into coastal zones, the Blue Plan proposes the use of the following tools, classified according to their levels of complexity:

- spreadsheets and simple mapping for regional data connected to national data,
- simple GIS for summary representations of the region in question,
- more sophisticated GIS using information sources such as remote sensing in order to set up a real Development-Environment-Management information system for the region,
- simulations of themes like urban zoning, major equipment, polluting industrial sites, etc.

Systemic and prospective analysis of the Iskenderun Bay was previously used as the means of testing the simplest of these tools (spreadsheets, mapping, GIS).

During the 94-95 two-year period, the coastal area of Sfax (Tunisia) was chosen in order to fine-tune these tools, to meet the needs and objectives of the "systemic and prospective analysis" of the Coastal Area Management Program. The phases of this project include:
- defining and constructing the territorial system,
- compiling the knowledge base with the set-up of an information system including GIS (gathering, structuring and managing),
- establishing a basis of rules and evolution hypotheses,
- integrating hypotheses and rules into the data processing system,
- dynamization and simulation.

The development of this tool depends almost entirely on the progress made with the systemic and prospective analysis of the Sfax zone CAMP, and therefore on collaboration and cooperation with the local team.

2.2 Participation in the MAP Coastal Area Management Programs

Within the framework of the MAP Coastal Area Management Programs, the Development/Environment scenarios have been drawn up during the previous two-year periods for Kastela Bay and the island of Rhodes.

Coastal region of Syria

The final results of the CAMP for the coastal region of Syria were presented during a Conference held in Damascus in October 1994. One of the contributions was the systemic and prospective study of the Development/Environment relations in the Syrian coastal areas. This study included more particularly three scenarios[2] the results of which are summarized below.

This approach intends to highlight the opportunities and conflicts which arise between development and environmental protection on the Syrian coast in the future. Its basic position is that future development of the Syrian coast is likely to cause significant environmental effects, if not carefully planned, which are likely to affect the development potential of the Region.

First, the basic socio-economic and environmental conditions and patterns of development in Syria and the coastal region are examined in order to identify past trends and future tendencies, particularly in terms of population, economic activity, urbanization, land-use and

[2] established in cooperation with the local team (Dr. Z. Jowejati, Eng. Y. Awaidah) and an international consultant, Professor H. Coccossis.

use of resources. The analysis of prospects follows a parallel top-down and bottom-up approach in the sense that it takes into consideration patterns and changes in the wider socio-economic context (the world, the Arab world, the European Union, the Mediterranean region) which influence development in Syria, but also the internal opportunities and constraints. In the latter particular emphasis is placed on the environmental resources as a factor which is affected by and also affects socio-economic development. An analysis of the basic institutional context and the role of various actors is also included.

Then, the trend and alternative scenarios for the Syrian Coast are elaborated on the basis of the analysis of structure and dynamics in the previous phases.

The Syrian Coastal Region has significant advantages at a national and possibly at an international level as well. The former relate to its favorable climate and rich water resources which render it suitable for agriculture and recreation/tourism. The latter stems from the strategic position of the Region as a gate of Syria (and adjacent Arab countries) to the Mediterranean and European markets.

Four seem to be the major dimensions or axes of reflection concerning the future of the Syrian Coastal Region:

Geopolitics As the world economy becomes increasingly interconnected and globalized each country seeks to maximize its linkages with the world markets. Comparative advantages play a significant role in this respect.

a. Should peace eventually prevail in the Middle East some extensive regional cooperation should be expected.
b. Should regional cooperation delay due to the need to build trust over a long period of time and reconstruct war damages, or should repatriation of skilled labour, know-how and capital be delayed because of the continuation of regional conflicts, Syria would have to seek on its own new markets.

Economic growth The macro-economic factors are important in this context. High growth rates of the past are not likely to continue as the world economy is hit by recession. The recent collapse of Syria's traditional market (Soviet economy) has worsened the situation. Two major hypotheses can be envisaged:

a. The State would have to undertake strong restrictive policies to control the growing consumption needs of the population.
b. The State would pursue a course of privatization, as it already has done, but at a faster pace.

Society Population pressures are likely to be high although some indications exist suggesting lowering of fertility rates as the population becomes urbanized. Population growth is likely to bring forward unemployment problems. Two options exist in this respect although they are not as clear cut as they seem to be presented:

a. Controlled modernization
b. Retaining traditional attitudes

Environmental quality Environmental resources are not abundant in the Coastal Region. The beach areas are limited given the size of the country. If developed at the rates of the past decades they will soon become saturated and environmental quality will decline unless substantial investments and efforts would be directed to control urban development. Land resources are not abundant, particularly as agricultural areas should be protected as key national resource. Population pressures will result in urban development and further

concentration in the narrow coastal strip or the intermediate hill areas. Water resources , although abundant at present, become increasingly threatened. Two options seem to be available:
a. Exploitation of resources.
b. Rational use of resources.

The above four dimensions constitute a framework for the development of scenarios for the future.

The comparative analysis of the scenarios for the Syrian Coast suggests that there are kei issues which should be seriously considered at present in order to achieve long-term prosperity in the Region as defined from the perspective of a strategy towards sustainability.

The main options identified:
Agriculture is likely to be the strongest advantage of the Region with transport, trade and some tourism as secondary ones.
- In terms of agriculture there are three different options or possibilities: for the domestic market or primarily for export or a mix of the two.
- In terms of trade, two are the major possibilities: limited external trade and expanded foreign trade. Transport is related to trade.
- Both, trade and agriculture options depend on three important factors/conditions: geopolitics in the wider region, the role envisaged for the public and private sectors and social attitudes.
- The geopolitical situation could be as at present (fragmented relations) or slightly improved (limited intra-regional relations) or vastly improved (strong relations).
- The role of the private sector could be limited, as at present, or substantial (full privatization) or mixed. The performance of the public sector is a key factor for future economic growth in all cases.
- Social attitudes are conditioned by education and institutional changes. Of central concern is the process of modernization and its influence on the performance of the economy and the utilization of resources (human, natural and financial).

Three scenarios, or coherent combinations of options, have been identified. Each scenario has differential impacts on the environment but also in each scenario the environment holds a key role in the future of the Region:

- In the case of the trend scenario, conflicts over the use of water and land resources are likely to be the major environmental problems. Particularly the concentration of development in the coastal zone will create significant functional problems (conflicts with agricultural production, congestion, lack of access, overload of infrastructures, etc.). In the intermediate zone development pressures are expected to be high from the expansion of agriculture. Such intensive development is likely to require significant investments in infrastructure and in efforts -on the part of the administration – to overcome such problems. In view of the generally high pressures and meager resources -financial and other- associated with this scenario, environmental problems will worsen. Water resources could be threatened by sprawling development and overuse. Pollution problems could be worsened as a result of uncontrolled agricultural practices and urban waste. Land for agriculture most probably will not be effectively protected and will be lost to other uses. Natural areas of interest could be threatened. However one of the most significant problems could be uncontrolled development, mainly on the coast. The degradation of the environment will be the result of unresolved conflicts of use and lack

of control. A lower environmental quality is likely to affect in the medium and long term the economic prospects of the Region in agriculture and tourism, eroding its competitive edge.

– In the case of the efficiency scenario conflicts over the use of land and water are also likely to be the major issues including pollution. Two areas are most likely to suffer the most, the coastal zone and the intermediate hill area. The anticipated expansion of agriculture and agri-industry, as well of other industries and services, will lead to concentration of population, employment opportunities and activities -all associated with urban development- along the major transport axes and around the large urban centers, in the coastal zone and to a lesser extent the hill area. Significant irrigation and dam construction projects should be expected. Pollution and congestion should be expected. Pollution of sea water and drinking water could be serious. Streams could be polluted. Natural areas are likely to be threatened. In the agricultural areas of the coastal zone pressures will be strong for expansion of agriculture intensifying conflicts with other uses (i.e. urban development as discussed earlier). Water supply shortages could be possible, even. Overall significant problems of degradation of the environment are expected due to intensive development and conflicts. Significant efforts will be required to guide and control development, putting tremendous pressures on administrative, financial and social structures. The pace of development could exceed the capacity of local societies to adapt to change. Furthermore, the conflicts over the use of natural resources, the overexploitation of water and land resources and pollution could in the long-term threaten the development of agriculture and tourism and the quality of life in the coastal Region. Prospects for development could be also eroded significantly.

– In the case of the sustainable development scenario pressures on the environment are likely to be moderated by the slower pace of changes -and associated development- and by strong preventive action in environmental management. Pressures for development are likely to be not only lower but also diffused over geographic space. The coastal zone is expected to face the highest pressures for development, the hill area moderate pressures and the mountain area lower pressures. The rational use of water is likely to prevent excesses in dam construction and careless expansion of irrigation and water supply schemes. Urban development is likely to be contained if not fully controlled. Development could be guided to the urban centers of the coastal zone and the hill area while some development is also likely to be directed -and supported – in the mountain area. The coastal zone is likely to be protected better from encroachment and development. If significant effort is invested at present in environmental protection and management future problems could be manageable although administrative structures need still to be strengthened.

In summary, environmental impacts are expected under any scenario. These can be mitigated through environmental policy. Significant steps have to be taken at present to anticipate and prevent the possible negative impacts in the future.

Three issues seem to be of highest priority, a common priority in all scenarios:

- Water resources, mostly rationalizing the expectations through a careful assessment of supply and demand
- Natural habitat areas which are threatened, particularly on the coast through early protection measures.

- Urbanization, particularly the uncontrolled sprawl of urban development on the coast, along the major transport axes and in agricultural areas near the large urban centers, through land-use and land development controls.

All these should be approached in a systematic and coherent way through planning and management. The institution of a coastal management programme seems inevitable if the coastal Region of Syria is to attain its potential without eroding its future.

Coastal area of Fuka-Matrouh (Egypt)

Since the Agreement's signature (November 1992), the Blue Plan has carried out three missions on the site, in April 1993, December 1993 and November 1994. Two major studies were initiated, one more particularly concerned with the gathering of the necessary data and the other with the systemic and prospective analysis of the zone. These two studies should be available by the end of the first half of 1995. They will then be reviewed and completed by a team of local experts who will contribute to the finalizing of the program between now and the year's end. As the study now stands, we can outline the framework of the scenarios[3] which will be established in greater detail during the final phase of the study.

The analysis of the system of Northwestern Coast of Egypt and suppositions on prospects and expectations manifest that the environmental components and their order of vulnerability can be determined as follows:

i. Soil.
ii. Water.
iii. Flora and fauna.
iv. The coast.
v. The sea.

Systemic analysis of the region clearly indicates that the sequence of importance of the sectors of activity can be established as follows:

i. Agriculture.
ii. Tourism.
iii. Trade, industry and energy.
iv. Transportation.
v. Building.

It should, however, be noted that, prospectively this sequence of importance will change, even in the near future, as the present development pattern persists, and, as the rise of per capita incomes will change the consumption patterns in line with applicable income elasticities of demand. In other words, in the study area, tourism and trade will become more important sectors of activity than agriculture. Rapid development of tourism and trade, on the other hand, will, evidently induce a fast progression of transportation, building, energy and other infrastructure categories, and even small scale industry sectors.

In order to proceed to the prospective analysis for the study area, it may be convenient to develop three different prerequisite assumptions upon the relations and interactions between the sectors of activity and environmental components:

i. The economy and the society will function and develop without any environmental considerations.

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(3) carried out in cooperation by a local team (Prof. Ayyad, Dr. K. Fahmi) and an international consultant, Professor Ç. Aruoba

ii. The economy and the society will consider the environmental damage and pollution and try to repair and reciprocate.
iii. The economy and the society will try to function and develop within a "sustainable development" approach and strategy.

The major themes (or dimensions) inside and outside the system on which different hypotheses will be conceived are:
i. Population.
ii. National development strategies and policies.
iii. The international economic and political context.
iv. Land use management.
v. Environmental considerations.

The fundamental use of the scenarios would be to establish various relationships between today and the future of Matrouh region. Each scenario, on the other hand, should be build on a particular set of hypotheses on the above mentioned dimensions that make the sectors of activity and their impact on environmental components develop differently. Consequently there will be as many sets of hypotheses as scenarios. The hypotheses were actuated upon, both, results of the systemic analysis of both Egypt as a whole and Northwestern region, and expert opinion. The hypotheses on which we shall build the scenarios, on the other hand, were implemented in accordance with various preestablished rules, in other words, the primary purpose has been to try to establish: i. coherent; ii. realistic; iii. consistent; iv. applicable and v. sufficient hypothesis.

One set of hypotheses in order to develop the reference trend scenario (T1) can be itemised as follows:

i. On population
- Rates of population growth and urbanisation will continue in accordance with present trends, both in Egypt and in Northwestern Region;
- Employment problem will continue to amplify;

ii. On development and strategies
- Liberalisation and privatisation strategies will be promoted;
- Government of Egypt will increase its support to the private sector, notably for industrial and tourism development;
- Government of Egypt will proceed to expand its infrastructural investments, particularly its efforts to create new sources of water;
- The supply of water in the Northwest Region will increase as anticipated;
- Government of Egypt, in spite of the pursuing liberalisation program, will try to proceed with its, particularly, social commitments and policies;
- Relationships of central government and governorate administrations, in spite of the new liberalisation policy, will, to a considerable extend, maintain its present structure,
- The new liberalisation and privatisation policies, at any rate, will increasingly influence economic and social vitality and developments in the Region.

iii. On international economic and political context
- Egypt's relations with the Arab world will continue to improve;
- Egypt's present mode and structure of rapport with United States and certain European countries will perpetuate;
- Similarly, undertaking of various foreign and international bodies aimed at infrastructure, economic, agricultural, and social development in Northwestern region will continue.

iv. On land use management

Loss of agricultural land to nonagricultural ends will prevail principally due to:

- Urban expansion.
- Tourist establishments.
- Small scale manufacturing.

v. On environmental considerations

- Economic and social policies will continue to suppress environmental considerations and environmental policies;
- Stress on environment will ascend.

Although the hypothesis for the reference (T1) trend scenario is based on the systemic analysis of both Egypt and Northwestern Coastal Region, and reasonable assumptions on expected developments and expectations for the future, it, evidently, is plausible to formulate different sets of hypotheses that will actuate diverging trend scenarios. For example, a worse trend scenario (T2) can be formulated by introducing various new hypotheses, again, based on the systemic analysis and by altering some of the hypotheses of the (T1) scenario. Noticeable hypotheses for a worse trend scenario can be itemised as follows:

i. On population

- Rates of population growth and urbanisation will continue in accordance with present trends, both in Egypt and in Northwestern Coastal Region;
- Employment problem will continue to amplify;

ii. On development and strategies

- Liberalisation and privatisation strategies, in other words, the new economic policy will fail to produce anticipated results;
- Government of Egypt will try to expand its drive towards increasing infrastructural investments, but, particularly efforts to create new sources of water do not evolve as expected and hoped for;
- Government of Egypt will try to proceed with its social commitments and policies;
- GNP growth rates will continue to remain at present lower levels and attempt to expand industrial production will not yield favourable outcome;
- Relationships of central government and governorate administrations will maintain its present structure;
- Domestic political disturbances, mainly due to acts of radical movements will increase.

iii. On international economic and political context

- Egypt's relations with the Arab world, specifically with Libya will not upgrade as anticipated;
- Egypt's present mode and structure of rapport with United States and certain European countries, and, also with international organisations like IMF and World Bank will set back particularly due to comedown of liberalisation and privatisation policies;
- Undertakings of various foreign and international bodies aimed at infrastructure, economic, agricultural, and social development in Northwestern region, albeit less enthusiastically, will continue.

iv. On land use management

Loss of agricultural land to nonagricultural ends will prevail principally due to:

- Urban expansion.
- Tourist establishments.
- Small scale manufacturing.

v. On environmental considerations

- Economic and social policies will continue to suppress environmental considerations and environmental policies;
- Stress on environment will ascend.

The systemic and prospective analysis of both Egypt and Northwestern Coastal Region indicates that there are some considerable changes in various important trends. If the anticipated "favourable" developments, partly reflected in T1 scenario hypotheses are justified, it would be appropriate to think in terms of a more strong economic growth, a T3 scenario. Although the legislative and financial resources and technical means to undertake environmental protection are more easily available in a framework of the T3 scenario, it should be remembered that this kind of scenario, paradoxically, proves to be the most harmful for the Northwestern Coastal Region of Egypt. For, the kind of economic development described by this scenario shall be one which demands the most resource consumption and creates the most pollution, because of high level of economic activities and, more importantly, delays in the application of measures which, in any event, aim at opposing the effects of resource exhaustion and pollution a posteriori, rather then preventing them. If this kind of development could be conjectured, it can be argued that the significance of alternative scenario exercises notably increase.

The objective of the alternative scenario (s) is to demonstrate the probable outcome of various deliberate (intentional, conscious, voluntary, etc.) acts (policies, guidelines, programs, conducts, etc.) upon the relations and interactions between economic development and environmental components. In this sense alternative scenarios can be drafted within the framework of previously delineated "prerequisite assumptions". The third assumption which postulates that the economy and the society will try to function and develop within a "sustainable development" approach and strategy, can and will be basis of the alternative scenario (A1) which shall try to demonstrrate an alternative, namely, a more environment friendly development pattern than the reference trend (T1) or the worse trend (T2) scenario for Northwestern Coastal Region of Egypt.

Both, economic and social development and, also, a better environmental management include all societal actors. In other words, individuals, public bodies, private companies and organisations, even certain international entities are, all, participants. Evidently, every other actor tries to maximise its own benefit and, consequently, craves to utilise the environment in its own interest. In other words, environment related problems, to a large extent, originate from socio-economic system, which, on the other hand describes the setting where the various societal actors act. It is rather crucial to define and classify the societal actors of a particular geographical and socio-economic setting in respect to their:

i. social functions;
ii. legal and economic strengths;
iii. commissions and responsibilities;
iv. sectors of activity and interests.

If one tries to define and classify the societal actors more precisely in the Northwestern Coastal Region of Egypt, the following list can be feasible:

i. Public law legal entities:

Central Government and service directorates in Matruh Governorate that represent central ministries and organisations in Cairo. The

service directorates are directly linked to the governorate decision making procedure.
- Governor and Governorate Diwan of Matruh.
- The "umda" ("Chief").
- Norwestern Coastal Development Authority.

ii. The individual citizens and real person merchants.
- Livestock traders and wholesalers.

iii. Legal person public merchants (companies).

iv. Legal person private merchants (companies).

v. Agricultural cooperatives.

vi. Other legal private person entities: associations, foundations, non-profit organisations, etc.

vii. International organisations active in the region.

The most influential and; also the most powerful actor, or group of actors in the Northwestern Coastal Region, at least for the time being, is/are the State or the "public law legal entities", for, due the lack of active and affluent national non-profit and non-governmental organisations, only they are in a position to decide and spend for:
i. Research activities for the environmental protection of the region;
ii. Construction or repair of plants and infrastructures;
iii. Environmental hygiene and environmental design;
iv. Training of personnel;
v. Purchasing of technology and projects;
vi. Crediting individuals and private organisations in the construction of plants related to the environmental services in the region;
viii. Precautions to be taken to protect flora and fauna.

Furthermore only the public bodies are in a capacity to determine a standing between urgent environmental problems, which demonstrates a high degree of priority from regional (also, national) environmental policy viewpoint. It should be remembered, on the other hand, that these kinds of decisions are, basically, political preferences, which necessitates value judgements, and, does not easily allow the application of economic accounting indicators. Economic measures (cost-benefit analysis, etc.), on the other hand, should be utilised during the process of identifying among urgent environmental problems of every and each kind (water, soil etc.), and of every and each locality in the region.

Nevertheless, specifically the framework of the prevailing liberalisation policies will predictably induce various other actors, for example, private sector companies to appear in a more influential stature.

The scenarios will mainly study the impact of agriculture, tourism and urbanisation, which emerged as the most important sectors of activity, on the environment, specifically soil, water and the coast, which again emerge as the most vulnerable environmental components, both in Northwestern Coastal Region of Egypt. The aim of the prospective exercise (scenarios) is not to recommend certain types of development for the Region, but to illustrate their effect on the environment. The systemic and prospective analysis, on the other hand, almost clearly indicate that, in the Northwest Coastal Region, all conceived types of development are primarily

effected by population trends, urbanisation, central government's choice of development/environment strategies, Egypt's international relations, particularly relations with Arab countries, and, naturally, regional constraints of space and natural resources.

Coastal Area Management Programme for Albania

The Blue Plan[4] carried out a preparatory mission in Albania (August 1993) to establish a systemic and prospective approach concerning Development/Environment relations. This mission revealed:

- the utility of the approach based upon the effective participation of the institutions in charge of development and of the environment and define, using socio-economic and environmental data, sustainable development indicators so that the national action plan for the environment could be connected to various sector development plans (tourism, agriculture, transport, etc.);
- the interest of elaborating two divergent scenarios, one of the trend type that could lead to stoppages and degradations capable of compromising economic development and the other of the alternative type, based upon a sustainable development path;
- the need to refer to the national scale because of the interdependence of the coastal region and the hinterland.

During this mission, a multidisciplinary team was set up and a program for gathering and analyzing the data was initiated. In addition, the following elements of reflection were gathered:

- a tourist development plan was established opting for luxury or medium/high category tourism on the sea front. Nature tourism would be in mountainous areas, cultural and business tourism in the cities. Low investments tourism type (camping) are excluded. The capacity in terms of tourist beds could reach 50,000 after the year 2010. However, handicaps in terms of access infrastructures and public services (water supply, treatment of waste water and refuse) would have to be removed to encourage development of international tourism.
- for agriculture, priority is given to feeding the population and agro-food industry would be relaunched after the redistribution of land to the cultivators. There would be three orientations under the impulse of the Ministry of Agriculture, concerning: the maintaining of the rural population by the diversification of activities (small farmer forestry by transfer of property, green tourism, rural amenities), the rational management of pastures, the control of hunting and the preservation of wild fauna.
- industrial and energy sectors are characteristic in that the industrial equipment is barely competitive, highly polluting, old and offers low productivity. For mining, now obsolete and polluting, measures towards modernization are being considered for ores for which there is a high international demand (chrome, nickel, copper). As concerns energy, Albania covers its needs thanks to its hydroelectric resources and also has natural gas resources. An energy policy focusing on gas and electricity has been put underway to slow down forestry overexploitation and the cutting of trees along the roads.
- as far as real estate management is concerned, approaches have been put underway to restore the lands to their former owners on the basis of the 1946 register with an interdiction of sale to foreigners. Foreigners may benefit from long term leases (99 years), granted with the agreement of Parliament. The opening up

(4) Within the framework of the CAMP for Albania, the Blue Plan refers to Mr L. Chabasson then to Professor Scicluna as international consultant. The local team is coordinated by Dr. A. Gjebrea.

of the real estate market will be gradual under parliamentary control. The privatizing of real estate will result in the possibility of expropriation by the communities. The right to construction is governed by a recent urban planning law which establishes a national right to authorize major operations while local levels will deal with smaller constructions.

- there has been spectacular change in the field of transport. For instance, the vehicles on the road increased from 19,000 before 1990 to more than 100,000 in 1993. The fleet is made up almost entirely of used vehicles. Air traffic has been multiplied by 4 since 1990. Before that date, there were 2 ferry-boats per month; since, there are 3 per day. Railways transported 8 million tonnes per annum before 1990. Since then, rail traffic has dropped to 0.5 million T/year.
- the fight against pollution (for instance, waste water, industrial pollution, nuisances connected to transport) is short of means.

After the mission, it appeared that the start-up of a market economy included fast changes in some activity sectors without sufficient acknowledgement, in terms of realistic thinking about sustainable development, of environment concerns at a time when they govern the quality and durability of economic activity. The example of international tourism (drinking water supply and waste processing needs) that of transport (emissions to be controlled, community transport to be privileged), that of agriculture (R & D requirements to maintain productive potential of the soil) demonstrate the advantage of reinforcing the environmental policy with an accessible language based upon sustainable development indicators and a prospective approach within practical access.

To this end, establishing a set of sustainable development indicators enabling officials to use a suitable chart to follow evolution, to evaluate and to make the necessary projections appears to be useful. These indicators would be tailored to the Albanian situation and should be established according to a structural approach to give an image of the socio-economic development structure and of its ecological spin-offs (for instance, the number of cars per inhabitant, SO2 emissions per GNP unit) and to a dynamic approach in order to measure the trends (annual rates of evolution). The areas to follow concern more particularly:

- the territorial distribution of the population with specifically the increase in urban population (including the capital city),
- agriculture (the irrigated land surface as a percentage of the arable land, the water consumption per irrigated hectare, the amount of fertilizer spread, the quantity of fertilizer and pesticides referred to vegetal production),
- the forest (wooded surface, wooding ratios),
- industry and energy (polluting emissions in the mining, chemical and manufacturing industries; consumption of electricity per ton of produced chrome, energy consumption per habitable square meter),
- tourism (number of standard beds with respect to the total accommodation capacity, overnight referred to the area urbanized for tourist purposes)
- transport (percentage of the tonnage transported by the least polluting methods and the lowest energy consumers, community transport with respect to private vehicles)
- habitat, accommodation and urbanization (number of rehabilitated houses per annum, surface of old housing modernized each year)
- the environment (tons of hazardous waste per km2, annual consumption of domestic water per inhabitant, annual production of domestic waste per inhabitant, percentage of the population

having a drainage system available, percentage of protected areas compared to the national territory).

During the second Blue Plan mission (September 1994), the working program was revised to take into account the difficulties encountered in gathering socio-economic and environmental data needed for constructing indicators.

Considering the very specific situation of Albania, its drastic political and strategic evolution, the very quick and substantial changes at the local and national scenes, it was decided to induce the organization of a high level inter-ministerial think-tank group to discuss the trend and alternative evolutions of the country for the coming decades. Such a group will be composed of Ministers and Vice-Ministers and is expected to discuss the scenarios results.

An international consultant, in close cooperation with a local team, is in charge of the systemic and prospective analysis for Albania, with emphasis on its coastal regions. The issues will concern mainly the following items:

- the analysis of the economic, social and political system of Albania and its coastal zone, with a retrospective over two or three decades needed for the trends analysis;
- the Albanian key actors' game analysis, with emphasis on their interactions and effects on development and environment;
- two trend scenarios, focusing on possible evolutions of population, agriculture, industries, tourism, urbanization and landscape management in the coastal areas and on their impact on water and land resources;
- a sustainable development scenario and the alternative paths to achieve it, at the 2025-2030 time horizon.

Some major elements are already given in the following as benchmarks for further analysis.

For tourism, emphasis is put on first class tourism. More proper attention has to be given to national and mass tourism. In the same manner, acess and service infrastructures need better planning in order to get more adequacy with development aims.

Concerned authorities are well aware of the problems of mining and textile industries, from the environmental point of view as well as from the economic one. Plans do exist for giving priority to "clean" energies such as hydro-power and gas. Most of the mining activities will come to a stop soon except the chrome one to be improved, multiplying by four the production in 2005 (10% of world production), using mainly hydro-energy. Poor quality coal mines should be closed soon by generalising use of gas which production will be increased first for local consumption. Several contracts have already been signed for oil and gas onshore and offshore prospection and exploration.

The question of the land is a very crucial one. Property and management need to be well defined: public gardens and canal edges are being very quickly covered by small shops, and big pressure exists in and around cities for building lands.

If Albania is not expecting overall water quantity shortages, there is a problem in water distribution, from one region to another, and within a region between the sectors. There is an important need for pipelines network. A national water commitee has been established and several water supply projects have been approved.

The industrial policy has to be more clarified. Heavy and chemical industries are mainly closed. Priority is given to privatization, encouraging small (family) entreprises and joint ventures for garnments, electrochemicals, shoes, carpets, wood. Manufacturing industry, including agro-food, need more proper attention, in order to avoid possible bottlenecks for local and tourist demand. The number of workers in the industry has decreased from some 4 or 500 000 to 150 000.

Agricultural strategy meets difficulties to be implemented. A good ratio need to be found between agriculture, urbanization and environment. Whatever the strategy, the natural resources will be under big pressure with important risks on forest, rivers, lakes, urban environment, etc. The current agricultural strategy is a very classical one, with irrigation and rural development projects, and with remittances and support from usual international organizations (World Bank, FAO, EC, USAID, etc.).

In any case, systemic and prospective analysis for Albania will be over by the end of 1995.

Coastal zone of Sfax (Tunisia)

First, it should be pointed out that the Blue Plan has decided to converge as many means as possible to implement the systemic and prospective analysis of the Sfax zone, grouping together coherently as many of its activities as possible, whether they concern the Prospective analysis or the Observatory. This decision is based partly upon the experience gathered from the already applied prospective exercises.

Accordingly, the effective start-up of the Sfax prospective was coupled with a regional workshop for training on prospective methods and tools. This was an opportunity for presenting Blue Plan approach, in a more systematic way, as well as a number of tools that can be used during the study. This was also why the test zone for developing prospective tools for the coastal level was selected as the Sfax region, making for a saving in terms of data processing and cartography and increasing the availability of Blue Plan expertise while facilitating the appropriation of the tool by the local team.

It is also associated with other activities. For instance, the expert handling the revision of the hypotheses worked in the regional training workshop, with a triple advantage: improved knowledge of problems of a coastal area and interactions between local, national and overall Mediterranean levels, presentation of the principles of participative prospectives, initial identification of actors and weight of the politico-administrative system. We should bear in mind that Tunisia is one of the pilot countries for the Observatory project. Accordingly, a great deal of data is available and accessible and an analysis of the institutions in charge of the environment is underway.

Concerning the prospective study as such for the Sfax zone, a detailed working program for the first phase – Knowing – was established by the local team[5] and the Blue Plan. Although it is running slightly late on the working agenda, this phase of data collection and analysis is almost over. It concerns knowledge of the current situation from three points of view: socio-economic,

[5] including Mr T. Gargouri, Professor N. Karray and Mrs. S. Krichen

environmental and politico-administrative. The first breakdown of the work took place during a working meeting in April 1995 at Sophia-Antipolis between local and Blue Plan teams. A local workshop, that should bring together several actors, will be held in the beginning of July 1995 during which the key elements of the Sfax system will be chosen and put into relation. From these elements, evolutional hypotheses will be established, marking the beginning of the second phase – Imagining – which should close in the autumn of 1995 and result in a number of options – Proposing – presented and discussed during the third phase.

Simultaneously, the local team and the Blue Plan will continue to set up an information system capable of supplying statistical processing, simple cartographic representations, indications of past evolutions and illustrations of the proposed options.

3. TRAINING – INFORMATION – PUBLICATIONS

3.1 Training – Information

Regional workshop for training in systemic and prospective methods and tools applicable to coastal areas

During the 1994-95 biennum, the Blue Plan had the mandate to organize two workshops of this type, one in French and the other in English, each attended by fifteen participants or so.

In cooperation with L'Agence Nationale pour la Protection de l'Environnement (ANPE), the Ministère de l'Environnement et de l'Aménagement du Territoire (MEAT) of Tunisia and with the Economic Development Institute (EDI) of the World Bank, between June 6 and 10, 1994 in Tunis, the Blue Plan organized a workshop (in French) entitled "Sustainable Regional Development and Systemic and Prospective Tools – Application to the Sfax Region". About thirty persons attended the workshop, out of which ten from Algeria, Morocco and Lebanon, from the Ministries of the Environment, Territorial Planning and from the University (Geography and Economics). The list of participants is given in Appendix 1.

The workshop was designed to make the participants aware of systemic and prospective analysis and how it could be applied to the Mediterranean context. Initially conceived of as independent of the current coastal prospectives, the workshop had no immediate practical objectives. It soon became apparent that without a test case, the pedagogical approach would lose a great deal of its interest and that the applicability of the proposed tools would be less explicit. The prospective study of the Sfax area was to begin at the same time and it was decided to choose this area as a practical case, offering the two-fold advantage of a field of application and of generating awareness in the Sfax local team with respect to the presented tools.

Accordingly, to achieve its goals, the workshop endeavored to:
- describe the methods and tools used during the various prospective study phases,
- review their application in the Mediterranean countries,
- illustrate the application of these tools with the practical case of the Sfax zone.

The first day was devoted to presenting the overall Mediterranean and Tunisian context. During the second day, the main methods and certain prospective tools were reviewed, with emphasis being placed more particularly upon structural analysis matrices. The third day was spent visiting the Sfax area, in particular the critical sites. The next morning, a practical exercise in using a structural analysis matrix, applied to the Sfax area, was undertaken by the participants, forming small working groups. During the afternoon, non-Tunisian participants explained the approaches used in their work, either concerning long-term environmental protection or territorial planning or strategic reflection or the mobilization of civil society towards a long-term management objective for an urban environment under considerable stress (water and waste).

Overall Mediterranean and Tunisian context

The workshop was opened jointly by the officials from the three organizing institutions.

Mr. Arab Hoballah (Blue Plan) defined the frame of work involving the establishing of a sustainable development process, drawing upon two essential notions, those of the system and the prospective.

Mr. Touhami Hamrouni, CEO of ANPE and representing the Ministry of the Environment and Territorial Planning, explained the advantage of the workshop, especially with the implementing of the Tunisian National Environmental Action Plan and the Coastal Area Management Programme for the coastal zone of Sfax.

Mr. Patrice Harou (EDI) presented the World Bank's environmental policy. He described how a development bank includes ecology in the development process. There are strong relations between economy and ecology and the two areas can no longer be considered separately because their interactions are becoming stronger and stronger. A new concept of ecological economy must therefore be used by the World Bank, like the ecological context according to which the projects are sorted in the National Environmental Action Plan (NEAP) and in the Ecological Evaluation (EE). NEAP identifies environmental problems, establishes priorities and leads on to the adopting of a national policy and plan for putting it into application. The EE of a project has to ensure that the proposed investment is sound and may be sustained environmentally. Mr. P. Harou then briefly reviewed the economic, ecological and equity aspects of the projects and closed by discussing the practicability of the NEAP/EE approach to identify and evaluate the development projects.

In the afternoon, Mr. Ennabli and Mr. Hentati, high-level officials from the Tunisian administration, presented the economic and environmental situation of Tunisia and gave details concerning:

- the basic economic data of the country, in particular the natural resources (oil and phosphate),
- the economic performances that have led to the development, to population growth and to its standard of living,
- structural adjustment policies undertaken so far,
- the national report concerning the state of the environment, describing the objectives of MEAT, i.e. prevention, monitoring and control of the state of the environment and the corrective action,
- relations between human activities and environment, and the action and development policies for improving the environment and the standard of living.

Then, Mr. Mounir Ferchichi (ANPE) presented the Sfax Coastal Area Management Programme (CAMP). The program includes a strategy based upon sustainable development principles, planning and integrated management of coastal resources. The objectives for the short and long term are outlined, together with the institutional framework, with the participation of the Mediterranean Action Plan (MAP) and of Tunisian national and local institutions. Finally, Mr. Ferchichi described all the activities proposed by MAP within this framework.

The day closed with interventions by members of the Blue Plan. First, Mr. A. Hoballah described the systemic and prospective approach of the Blue Plan at the global Mediterranean level, first outlining the objectives of the Blue Plan defined in 1977, i.e.:

- "To provide the authorities in charge and the planners of the different countries of the Mediterranean region with information enabling them to draw up plans for sustained and optimum socio-

economic development without causing environmental degradation"
- "Assisting the governments of the Mediterranean coastal states to improve their knowledge of the common problems that they have to deal with, both in the Mediterranean and in the coastal areas".

The Blue Plan then focused on the possible futures for the Mediterranean basin, concerning economy and ecology. The approach of the Blue Plan was based on a systemic method with diachronic and synchronic examinations (1985/2000/2025), as well as retrospective and prospective issues. The scenarios method was used to identify the socio-economic perspectives and the environmental evolutions for all the Mediterranean bordering countries. Four geographical levels were defined: the global Mediterranean level including all the bordering countries, the national level, the watershed level that is essential for evaluating water resources, and the coastal regions level.

Then, Mrs. Elisabeth Coudert explained the adaptations needed to apply the methodology to the coastal regions. The Blue Plan was solicited for the purpose of prospective studies at the local level. The prospective approach is still the same but the work organization has been modified because it is necessary to work with experts who know the entire zone. The role of the Blue Plan is therefore to advise and to assist the local team.

There are three basic lines involved in the local prospective approach:
- the socio-economic prospective of the zone, within the scope of its national and international context,
- the environmental prospective, based upon a study of potential and environmental constraints from an ecological survey,
- the prospective of planning, studying the long term resistance of a legislative, regulation and institutional system with respect to pressures applied by the socio-economic system of the zone, the country and even the world.

To finish, three prospective and local study cases of coastal areas were presented as an example: Kastela Bay (Croatia), the island of Rhodes (Greece) and the Bay of Iskenderun (Turkey).

Prospective methods and tools

Mr. Guy Loinger stated his point of view regarding the prospective tool in presenting the analytical prospective framework applied to the territorial context. After defining the prospective and its methodology, Guy Loinger examined the prospective applied to the territories, first emphasizing the complexity of the territory where many forces enter into effect (economic, social, etc.). These regional or national territories are also affected by the globalisation of markets and exchanges tending to uniformize the general territorial framework. Guy Loinger went on to underscore the fact that the national framework (the Nation-State) is unsuitable to provide global regulation and that there is an increasing need for a prospective approach in the regions. The regional framework has the advantage of being legible. It is as if there were an efficient decision-making level and the need for cultural identity is stronger. It helps the actors to take position on the national chessboard, etc. Guy Loinger closed with the application of this prospective reflection to the scale of France as a whole while proposing various configurations according to the growth type, for the evolution of the French territory.

Then, Mrs. E. Coudert went on to describe several systemic and prospective tools, including mappings (schematic representations and graphs of systems), combination of hypotheses and scenarios.

The Blue Plan approach therefore breaks down as follows:
- 1st phase: Knowing (diagnostic)
- 2nd phase: Imagining (exploratory prospective)
- 3rd phase: Proposing (normative prospective)

System analysis is the privileged tool of the first phase. It is a knowledge tool. Definition of the system adopted by the Blue Plan (Cf. Mr. Grenon) works out as follows: *A system is an intellectual construct, for a given purpose, comprising chosen elements, in dynamic interaction.* After choosing the component elements of the studied system, the relations between these elements must be analyzed. Mapping, structural analysis and analysis of the game of actors will identify and make it possible to understand the dynamic of the complex relations that exist between the variables. This first study phase corresponds to "Knowing". The second phase "Imagining", corresponds to the exploration of the possible futures by combining various hypotheses of evolution. These hypotheses are at the origin of the system's dynamizing and are used for constructing the different scenarios. Finally, in the last phase, "Proposing", the results of the scenarios are presented by the working teams and discussed with the largest possible groups of actors at different levels (institutional, professional, associative, etc.). It is at this stage that the possible alternatives are worked out in terms of the policies to be implemented, the investments, the development choices, etc.

Then, Mr. Jean-Pierre Giraud (Blue Plan) presented the statistical, data processing and mathematical tools that could be used for the Mediterranean Development/Environment prospective. First, he emphasized the data gathering aspect for which precise themes must be defined to cut down on the quantity of information. It is also necessary to consider the problem of the existence and accessibility of such data before beginning with this type of project. Then, the geographical levels and the scales of work to be taken into consideration for carrying out such study must be defined (in terms of countries, regions, watersheds).

In addition, J. P. Giraud presented the available data processing tools, like database management systems (DBMS) capable of processing a certain number of national or regional data, or like the geographic information systems (GIS), for very quickly spatializing the information (cartography) and for supplying analyses of the current state and previous evolution so as to work out the possible futures.

As far as mathematical tools are concerned, J. P. Giraud referred to simulation, modelling and expert systems. These tools are heavy to implement because they call for an important investment. His conclusion concerned the difficulty of setting up a system which would be universal for prospective studies of coastal zones.

To close this day devoted to methods and tools, Professor Kimon Valaskakis outlined his approach to the prospective. After defining the general conceptual framework, referred to by him as the Chronosphere, he described the 4 stages of the prospective:
- diagnosis: understanding the present;
- the exploratory prospective: defining the possible futures;
- the normative prospective: choosing the desirable futures;
- strategic planning: producing the desirable futures.

Note that the first three stages corresponding accurately to the Blue Plan prospective approach.

Professor Valaskakis then described analysis tools for each prospective stage, emphasizing more particularly the diagnosis. Three analysis methods are available:
- the systemic approach,
- strategic positioning,
- structural analysis.

Structural analysis (GAMMA method) was then presented in greater detail. Generally, it is aimed at understanding the determining aspects of the system in question and its relations with the outside environment in order to project the probable and possible futures. The stages of this analysis include:
- determining the problems: asking the right questions;
- choosing a panel of respondents (experts);
- drawing up a list of variables;
- filling in the matrix.

Analysis continues with the analysis of the matrix for the purpose of:
- diagnostic with an identification of the motive variables, dependent variables and strategic relations;
- exploratory prospective with a trend type scenario (extrapolation of the main trends) and contrasting scenarios (reasoned extrapolation of promising events for the future);
- strategic planning with an identification of external and internal variables.

Visit to the Sfax sites

During this day, the participants went to Sfax to visit the town and some of its sites. Professor N. Karray first presented the main characteristic sites of the town by a series of slides. Then Mrs. Souad Krichen outlined the history and the current situation of the town. Urban development at Sfax began with the Medina (built in the IXth century). The first development plan was drawn up in 1929 when the colonists arrived. Then, between 1963 and 1969, six development plans were applied to the town, which covers a surface of approximately 4000 ha. As urbanism master plan (UMP) was drawn up in 1977 for an area of 12,000 ha. There is also a national plan and a regional territorial development plan. Both date back to 1985. The last urban master plan dates back to 1988. Several protection and development projects concerning the Sfax environment were then referred to. The problems affecting the town of Sfax relate to:
- coastal pollution caused by industrial waste and dumping (for thirty years of operation as concerns phosphates);
- spontaneous urbanization that is eroding the agricultural land;
- the progressive destruction of the Sfax Gardens (Jneins);
- a town without green areas and whose sea front has been taken up by the port and by industry.

After these preliminary outlines, the day continued with a detailed visit of the sites characteristic of the problem situation: phosphate industry sites, pollution due to agro-industrial waste, the fishing port, sewage plant, lots in the Gardens, etc.

Exercise for the use of a structural analysis matrix

The workshop participants carried out an exercise at filling in a structural analysis matrix. Forming four separate working groups, they first tried to determine the significant variables describing the Sfax region. This preliminary stage consisted in drawing up a list of 20 to 30 variables which were little by little reduced (by hierarchizing and aggregating them) to arrange the final list of the desired size. In the present case, as it was an application exercise, the number of

variables to be retained had been arbitrarily set at ten. The four lists of variables as produced by the various groups are indicated below.

Black Group – Leader: G. Loinger	Red Group – Leader: K. Valaskakis
1. Tourism – Equipments – Projects	1. Public Authority attitudes and behavior
2. Regulation, standards, law	2. Residents attitudes and behavior
3. Economy – Dynamism of Employers	3. International agencies attitudes and behavior
4. Social ambience and climate	4. Primary Activities
5. Local Political Will	5. Secondary Activities
6. Culture	6. Tertiary Activities
7. Image – Quality of frame of living	7. Cost of sustainable development
8. Agriculture and Fishing (significance)	8. Availability of natural resources
9. Environment management	9. Availability of Capital
10. Project Financing	10. Geographical location

Blue Group – Leader: J.P. Giraud	Green Group – Leader: E. Coudert
1. Population and migration	1. The olive tree
2. Urbanization pattern	2. Phosphates
3. Transport and traffic	3. Fishing
4. Position and role of Sfax	4. Industry/Energy
5. Main equipments	5. Sfax Society
6. Pollution and waste	6. Improved frame of living
7. Water (natural resources and sewage)	7. Transport
8. Industries	8. Exchanges with Libya
9. Coast	9. Function and role of the town of Sfax
10. Objectives and values of Sfax Society	10. Development of Kerkennah islands (tourism)

Having compared their results, the participants defined a simplified matrix of ten variables as follows:

- 1 Human resources
- 2 Natural resources
- 3 Capital resources
- 4 Cost of sustainable development
- 5 Geographical situation
- 6 International context
- 7 Government action
- 8 Sfax society action and behavior
- 9 Activities harmful to the environment
- 10 Activities compatible with the environment

The participants put the ten variables into the matrix from which they were able to identify the main strategic variables best characterizing the Sfax region. Using the nature of the strategic variables, the participants highlighted the motive variables (influences) and the dependent variables of the Sfax system. By means of this exercise, the participants were able to experiment on the utility of this tool for collective reflection.

Subsequent to this exercise, the participants showed interest in a tool of this type, particularly for long-term development studies involving several geographical levels and several decision-making levels. The Algerian and Moroccan participants then described their experience in the field of territorial development and long-term management of the environment and natural resources. They pointed out the similarity between their approach and the methods and tools presented previously, and therefore, their applicability in certain cases.

An interesting point is that directly subsequent to the workshop, the Blue Plan team and the local Tunisian team established the general work programme for the prospective study for the Sfax zone and on the other, specifically defined the work of the first phase corresponding to "Knowing", i.e. devoted to knowledge of the system.

The Blue Plan team also learned a great deal from holding this workshop. In particular, it is important to have a report of the Blue Plan experiences concerning the use of prospective tools, considered to be a priority. A report of this type would be on one side useful pedagogical material for the workshops and on the other side means of disseminating information about what the Blue Plan prospective practice has been and currently is.

The Blue Plan prospective practice: tools and methods for systemic and prospective studies in the Mediterranean

For more than fifteen years now, the Blue Plan has been engaged in a Mediterranean prospective exercise. In the course of time, a considerable amount of experience and knowledge has been amassed both concerning the methodological approach and the understanding of Mediterranean problematics.

In order to communicate this experience to the Mediterranean community, and to contribute to making prospective practice better known and widespread, at every decision level concerning the terrible couple of Development/Environment, a report on past and recent prospective experiences of the Blue Plan was drawn up in 1993-1994 under the guidance of Michel Grenon[6]. This report will be proposed for publication in the series of MAP Technical Reports during the second half of 1995. This report is entitled *"The Blue Plan prospective practice: tools and methods for systemic and prospective studies in the Mediterranean"* and comprises four main parts:

- 1. the interest of the prospective in the Mediterranean
- 2. the basic concepts
- 3. system knowledge
- 4. system dynamizing.

The draft of this report was completed at the end of 1994 and sent out to twelve or so Mediterranean experts for their opinions, comments and suggestions. All due attention will be paid to their information when the final document is defined. This report offers a panorama of prospective studies, from global Mediterranean to local/coastal level. It is based on practical examples showing what has been accomplished with the available tools, and how it was done. In addition, over this fifteen-year period, long in itself, reflection has gone deeper, tools have been improved, practices have evolved. The report has pointed out the fact, especially as concerns the change from global to regional/local prospective practice and knowledge of the actors' logics.

The interest of Mediterranean prospectives

Why use system analysis and prospective analysis? Is it not enough to plan, do what is called "flexible planning" i.e. that can be adapted in the course of time? Planning is oriented towards the future but is not "open" towards the future in the sense of a prospective, considering several possible futures.

The Blue Plan global Mediterranean scenarios were deliberately made covering a wide range of evolutions and possible situations. The main reason for this was the scale of the uncertainties that we review briefly in the following.

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(6) with assistance from E. Coudert, P. Gonod, G. Loinger, M. A. Roque and based upon their respective work

If we examine the macro-variables (or dimensions) of these scenarios – the international context, the populations, the development strategies, the spatial management and the consideration of the environment – it is first of all evident that the absence of any control on these variables is greater for the first – the international context – and seems to tail off to the fifth – the consideration of the environment.

Due to the increasing internationalisation of the economy, especially since the end of World War II, all countries are more and more committed to increasingly large networks of relations on the global scale and consequently, are more and more interdependent, if not dependent on each other. In the course of their long history, the Mediterranean countries have experienced this phenomenon before many others. They have little by little lost their geo-central position to become more "peripheral". In this peripheral position, they are affected by both the decision of the "great powers" and by the resulting effect of the evolutions of dozens of other countries.

For instance, in the field of tourism, so important to the Mediterranean, how can one avoid trying to understand and allowing for the great world trends, their "heavy" component and their "volatile" component before starting up a tourist development programme? Often, a costly development programme of this type needs to be judged in terms of its value as compared to other financing or development programmes that are just as necessary and that are vigorously defended. Obviously, the answer to the problem would be easy if international tourism increased regularly by a certain explainable percentage. By a growth mechanism that is easy to understand and extrapolate. Unfortunately, things are not so simple and even if an average can be worked out over a long period of time, the margins of variation, and therefore of uncertainty, within such averages are enormous, due to the effect of such factors as competition from other traditional or emerging destinations, factors of fashion, financial advantages (such as the rate of exchange, arousing considerable fluctuations among USA clients for instance), the local political climate, nearby or threatening conflicts, etc. Decision-makers are often confronted by many uncertainties, some of which can be estimated to some extent, others of which are qualitative, but for the most part, which are totally beyond his sphere of influence. He may however understand them. He may attempt to weight the pros and cons, consider the possible solutions and then take a position, to help in reaching a decision "to build scenarios" without real consciousness in doing it.

The events of the last few years show both the increasing and unpredictable significance of this international context. The example of the collapse of the Soviet empire was instructive and will continue to represent an enormous shock to prospective specialists for a long time to come: on what bases can we now imagine the possible evolutions of the former USSR and the role of Russia in Europe? In the field of energy, Europe is preparing itself to depend more and more on Russia for its supply of energy (the construction of the Yamal-Europe super gas pipeline is already under way), but which Russia are we referring to? What will its future be? The evolution of the former USSR is important for the stability and the future prosperity of the whole eastern Mediterranean, and for its tourism and energy of tomorrow. The same goes for the peace negotiations in the Middle East that could change the entire political, economic and commercial landscape of the eastern Mediterranean.

Obviously, it would be far too lengthy a process to go into all the major questions concerning the Mediterranean Basin. Further, these

questions cannot be confined to the variable aspect of the international context. Are we in better control of the populations, or more importantly, of their numbers and their movements? Can any mayor of a large town in the south and east of the Mediterranean Basin predict its population numbers in 20 or 30 years time? However, the installation of certain equipments, decisions about major installations that might be insufficient tomorrow or the next day, or that might be oversized and under-used, have to be decided upon today. Even the exact level of international migrations is not accurately evaluated. What is going to happen tomorrow when some countries will have moved towards such and such a regime?

During the élaboration of the Mediterranean Blue Plan scenarios, the "National strategy" variable appeared to be relatively independent of the choice of "national strategies": some opted for liberalism and others for socialism and dirigism. As an illustration of the independence of the macro-variables of the scenarios, the pressure of the international context and of some of its partners such as the International Monetary Fund, has led to far greater convergence of the national development strategies than was expected ten or so years ago. Today, there is no way of being sure that this variable would take on the same significance in establishing Mediterranean scenarios.

Policies in terms of the spatial and environmental management also now show signs of converging more, because of the larger corpus of more generally accepted management principle, under the pressure of public opinion whose vigilance is recognised as being efficient. Strangely enough, although the choices offered to decision-makers sometimes appear to be restricted, thanks to this leading common public opinion, the consequences of these choices are not contracted in the same way. They are evaluated more thoroughly, but the uncertainties are still there, as are the nasty effects that we are still unable to assess entirely.

In other words, some macro-variables have "opened up" and now offer greater uncertainty related to significant influences while others appear to have been reduced but continue to offer critical options.

Unfortunately the scale of the necessary investments has increased almost exponentially, and the same applies to decision errors with money now scarcer and costlier. On this point, we might underline the important difference between company prospective and territorial prospective (or territorial planning). In the case of companies, errors first, generally, result in financial losses (or by a lack of gain), or in the loss of position on market, but often, unfortunately, in damage to the human resources (loss of jobs, technical or definitive laying-off , etc.). With territorial planning, it is perhaps more difficult to estimate the damage and it often affects the whole community. But more than anything, its impact is generally of another type that is far more difficult to "recover". When they are not irreversible, as is more and more the case, spatial or environmental impacts may spread out over several generations. Yachting ports, or large dams, are prime examples.

Each decision-maker, in weighting up the pros and cons, in bringing into consideration the predicable consequences of the future, in imagining the alternatives that he may see as having advantages or drawbacks, "sketches out" scenarios, often implicitly but more often than not intuitively, empirically and incompletely. The fact that this method is the generally widespread does not mean that it is the best, nor that is it sufficient. The scale of uncertainties and the price of the errors made plead in favour of fuller and more sophisticated

approaches that are, above all more rigourous. The scenario approach is one possible method. Beware of thinking that it is fast and easy. But compared to the price of some error, its cost is nothing. The purpose of the report is to present the bases, the mechanisms, the current limits, the expected progress. This progress will be even more valid and rapid if more teams are committed to it and if they are able to share in the efforts to be made and in reaping their results.

An approach like this, whose primary aspects will be discussed here, appears particularly appropriate to the scale of the Mediterranean Basin, an area that is having to cope with extremely dependent and fast-changing development situations.

This "prospective requirement" had already been expected to arise and had been defended in the field of public decisions. Indeed:

"To say that change is accelerating, is to say that with each unit of time (year, or legislature) more new problems present themselves. This means the amount of pressure brought to bear on those responsible, by means of questions that call for a decision, is going to increase with time: it seems natural and even reasonable in such a case that the questions are dealt with in order, depending on the degree of urgency. The problem with this practice becomes evident in the results. Each problem is only entered in the agenda when it has become a "burning" issue. At this point, things are at the stage where, as they say in chess, "ones hand is forced". There no longer remains a choice between different, determining, actions designed to model a still flexible situation. There is only an answer, determined in advance, to a pressing problem, and this leads to only one possible result. The rulers of the day obey the necessity of the moment, and justify themselves afterwards by saying that they did not have any other choice but to act in that way. What is true, is that they no longer had the choice, and this is quite a different thing: because even if they can be excused from blame for their decision, which in effect has become inevitable, they will not be so excused for having left the situation get to the point where all choice has been removed from it. It is precisely in the grips of necessity that one finds the proof that there has been a lack of foresight, and the way to prevent things from being like this is to take notice of situations as they are forming, when they are still pliable, and before they become imperiously constraining. In other words, without foresight, there is no real freedom of decision." (Bertrand de Jouvenel, 1964).

Today, we could say: "without prospective activity, there is no real freedom of decision".

Regional and local prospective activity

An increasing interest in prospective approach at a regional – even local – level has been seen in recent years. This interest is based on a certain number of motivating factors, such as:

– A need for understanding and clarity regarding what is at stake now and in the future, all the more urgent as uncertainty mounts. This phenomenon is linked to mutations in large institutional or ideological systems that have served as models.

– The need for cultural and social identity, which seems in an increasingly open world to be the local/regional response to the internationalisation of information, technology, and the economy, and which goes back to a historical, cultural and linguistic past.

– The awareness that there is an efficacious level of decision making between the macro-economic level of nation states and the micro-economic level of individual actors and economic agents.

– The knowledge of the risks of ruptures, through analysis in fragile areas of the local/regional economic and social system due to the fact that the parameters of the economic and the social domains are no longer coherent at the level of their localised combination (as in the case of investment decisions taken by a multi-national which has its headquarters thousands of kilometres away).
– The need for a position on the international scale, in a competitive universe in which everything, including territory, has become an object of competition.
– The necessity to evaluate the region's degree of freedom, its margin of manoeuvrability, in order to develop internal/external policies that are best adapted to the real situation regarding local environments.
– The need to create a hierarchy of objectives, in time and in space, in relation to the means with which one disposes; i.e. how to reconcile short term needs with the long period of time necessary to realise large-scale projects. A high-speed train system requires a decade from conception to final realisation; a new town takes 20 to 30 years to go from conception to the point at which the sub-assemblies which go to make it up start to balance together, etc. It is necessary, therefore, to be able to create a hierarchy of technical and social completion times as regards their urgency of need, and this requires that the question of reversibility of policy is put. It also requires modalities to reduce the time it takes for consciousness of such matters to come to the fore and to increase the speed of policy change and mutations in the heart of local/regional society.

In any case, detailed knowledge about the relevant actors is essential. This is why a prospective and systemic approach that is centred on the logic of the actors, in such a way as to be able to understand their capacity for adaptation and of anticipation of new needs, is helpful.

Three analytical positions stand out.

The systemic and cognitive prospective method: a particularly important first approach consists of actively understanding the territory, analysing the socio-economic and cultural processes that belong to that complex object known as the territory, and this is done in two ways:
– On the one hand, an analysis of functional relationships, as well as of ambience and context, between a given local/regional socio-economic phenomenon and external determining factors.
– On the other hand, an analysis of the relationships internal to the different functional social and economic sub-assemblies with the territorial sub-assemblies.

Moreover, these two fields must be analysed on the one hand for a given period of time, and on the other for the completion time of the processes involved. Now, completion times are difficult things to master because each functional and/or territorial sub-assembly has its own logic, its own time period, its own history. It is a question of understanding the different trajectories that are internal to a territory, in their relationships with their external determining factors, and on different spatial scales. Understanding these mechanisms requires reference to analytical methodologies, of which the most important is systems theory.

The exploratory and normative prospective method, or the parcipitatory approach from the "expert's word". This second approach is based on the construction of a rational logic of anticipation. Several problems are tied together: on the one hand, the question of uncertainties about the future – *vis a vis* the stakes

for territorialised societies –, and on the other hand, the question of the elaboration method of anticipatory discourses. In effect, there is no simple answer, only imperfect sketched answers with variable degrees of pertinence. This creative and participatory approach begins with the asking of the advice of experts using methods such as the structural analysis matrices, Delphi, Abaque de Régnier etc. It is a question of tentative methods to elaborate a rational anticipation strategy based on the analysis of systems, placed in a diachronic dynamic, and on expert points of view.

The planning prospective method is a third approach to strategic prospectives. It consists of asking how the way in which ideas developed in the context of prospective debate on the one hand, and in the context of cognitive analysis on the other, can be made the object of a rational ordering in political/administrative terms such as a regional or local plan, for example.

It is necessary to make clear that these three approaches – the systemic and cognitive prospective method, the exploratory and normative prospective method using participating variants, or by using experts, and the planning prospective method – may be different from an analytical point of view, but are closely linked in the working processes, so that the three approaches are highly complementary. Do they, though constitute a hierarchy? They certainly do in terms of time, as it is clear that one cannot use the programmatic, strategic prospective method without having first created a strong base that is cognitive on the one hand, participatory on the other. But the three fields are complementary. If there is a chronology, then, there is no hierarchy that goes from the less to the more important.

The question remains of the chronological relationship between the participatory approach and the cognitive approach. This question is difficult to resolve, because from a theoretical point of view, it seems logical to "know" before "acting", which implies that one start with the cognitive approach. Due to the complex nature of our societies, it is often necessary to allow ideas to emerge from within civilian society before looking for detailed understanding of the logic of individual actors and the functional internal/external relationships of a given territory. In fact, in the phasing of studies, it is a good idea to alternate the cognitive and participatory phases in a non-dogmatic iterative movement.

3.2. Publications

During the period 1994-1995, the Plan Blue has submitted three reports for publication in the MAP Technical Reports Series. The introductory, or résumé, part of these is presented below.

Moreover, the "Les fascicules du Plan Bleu" collection is enriched by the addition of a new volume, number 8, which is entitled "Tourisme et Environnement en Méditerranée: Enjeux et Prospective" of which a number of elements were presented in point 1.2 of this report.

Moreover, a new series of publications is going to be launched under the heading "Les Cahiers du Plan Bleu". The first issue, in English, is devoted to the prospective study of the island of Rhodes and is entitled "The futures of the island of Rhodes: tourism and sustainable development." The second issue, entitled "La baie d'Iskenderum: prospective pour une gestion durable", is in French and is a synthesis of work carried out on the Iskenderun Bay project.

Report on seminar debate on Mediterranean prospectives, 19-21 October 1992, MAP technical reports series No. 88.

One of the main global conclusions of the Plan Blue prospective sought to point out the extreme vulnerability of coastal regions in terms of occupation of space and utilisation of the environment and natural resources. In effect, the concentration of people and their activity in coastal zones constitutes a serious problem, a potential source of conflict and degradation due to localisation and function. Partly due to this observation, the Mediterranean Action Plan has decided to concentrate its activities on coastal zones, notably with the setting up of the Coastal Area Management Programme. As well as this, Turkey, which is particularly interested in Development/-Environment scenarios on a global and national level, has asked for the assistance of the Plan Blue in a local application of this methodology in Iskenderum Bay.

In this context, the Plan Blue had to adapt its methods and its tools in order to better respond to the demands of a prospective exercise carried out on a small coastal region. This required a certain degree of critical self-evaluation of methods and new, better and/or innovative tools were sought.

At the same time, the Blue Plan continued its reflections on a global Mediterranean level, in order to refine and actualise results of Mediterranean scenarios in certain domains (notably population and international context). This work continues on the level of the whole basin and is, moreover, indispensable to keeping a local prospective, given the interdependencies involved.

It has become clear that prospective methods suffered not only from a deficit as regards the conception of tools, but also from a lack of training. With the notable exception of a few rare institutions such as the Conservatoire National des Arts et Metiers, there is hardly any university level teaching of prospective methods and tools. "Prospectors", as such, do not exist, and they are force to learn in the field, at the whim of opportunity, out of personal affinity and intellectual curiosity.

Accordingly, the Blue Plan has decided to develop a number of actions in favor of information and training on and about the methods and tools of the prospective analysis method. Initially, it appears worthwhile gathering together, for a Seminar/Debate, personalities from the scientific world and high-level officials who contribute to national socio-economic development and environmental protection policies. The goal of this seminar/debate is first to supply information about the current state and the interest of the prospective tools on the basis of the experiments put underway in the Mediterranean region, and also allow particularly open discussions between scientists and high-level officials.

As emphasized by B. Glass, BP/RAC director in his opening speech, this Seminar/Debate was above all a seminar for reflection and exchange, bringing together officials from public institutions required to operate either in the name of the environment or that of development, in the Mediterranean countries. During the seminar closing session, the MAP Coordinator, S. Bussuttil, emphasized the requirement for long-term studies to define a sustainable development strategy in the Mediterranean and to draw up an Agenda 21 that is specifically Mediterranean. BP/RAC Chairman, M. Batisse, concluded that it was necessary to continue reflection on long-term relations between environment and development, at every

level, and on the need to establish and maintain Mediterranean contact networks more particularly through exchanges such as those that took place during this Seminar.

The Seminar/Debate was held at the Blue Plan in Sophia-Antipolis from October 19 to 21, 1992. It brought together twelve participants from seven countries and eight speakers. The report gathers together the speeches made by the conference members and some of the discussions that followed. The submitted papers are not homogeneous. Some of the interventions were reconstituted on the basis of recordings made during the session and other were supplied directly by the authors. The discussions after the lectures were not transcribed in full, partly for budget-related reasons and partly because of the standards of recording. As it now stands, the report is a base of reflection about the prospective method, it tools and its applications in the Mediterranean.

Iskenderun Bay Project

The study on the "Iskenderun Project'" was carried out over a three-year period from January 1990 to December 1992. Sponsored by the Turkish Ministry of Environment, the study was carried out by a team[7] from the Ankara University of Political Sciences, assisted by the Blue Plan. The object of this study was to propose an environment management model for the Iskenderun Bay, within Development/Environment problematic based on systemic and prospective analysis.

Iskenderun Bay Project – Volume I – Environmental Management within the context of Environment – Development, MAP Technical Reports Series n°89.

In a world preparing itself for the XXIst century, environmental management has become a matter of unquestioned priority at both the national level and at the level of the international community formed by the nations concerned. It has become the fundamental task of all to accomplish the objectives of socio-economic development, within the context of the environment-growth relationship, in a manner that accounts for the needs of the environment and without damaging environmental features; in other words, to manage the environment.

The Iskenderun Bay Environmental Management Project is the first effort made in the region as an extension of the Blue Plan to apply it locally on a smaller scale. For this reason, from the point of view of research methods and techniques, it sticks to the systemic approach and scenario techniques applied during the work on the Blue Plan studies. As a result, instead of preparing a plain geographical inventory of the economic, social and environmental characteristics of the Bay region, it displays possible future circumstances by extending the current trends to the future.

What the Mediterranean countries expect from the Blue Plan is that it will provide the authorities responsible and the planners concerned with facts that will enable them to develop optimum plans which will not lead to the deterioration of the environment as socio-economic growth is maintained.

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[7] Professors Can Hamanci, Çelik Aruoba et Aykut Namik Çoban.

One of the concerns of this study is the localisation of the methods used in the Blue Plan and the accomplishment of the Blue Plan ideals in a limited-scale project, in a way testing the validity of the Blue Plan and proving its continuity.

The study consists of three principal parts. A description of the economic and social structure, the current environmental situation and the administrative organisation of the project area is presented in the first part.

The second part is a prospective analysis. The basic factors in determining the future are the development trend, its attributes and its interaction with the environment. In this part, discussion focuses on the detection and control of trends that could undermine or otherwise affect the expectations.

The third part is dedicated to the administrative organisation that will take on the task of environmental management within the framework of the system and its actors as determined following the establishment of environment-growth relationships. Here, an administrative model that can be effective in environmental management is to be described complete with its objectives, role, organisation, structure, means and function.

The purpose of this study is not to reflect an optimistic or pessimistic view of the future but to set out the elements that are effective in identifying and controlling future events and, in order to prevent and diminish the undesirable effects of the environmental burden:
- to investigate new modes of growth in the region,
- to evaluate the development trends in all sectors from the environmental point of view and
- to demonstrate the interaction between the environment and development.

The study is characterised by its prospective nature and the models it proposes for use in the short and medium term. It aims to establish an environmental management model to regulate the interaction and relationship between the social, economic and political structure and the environment, that arise as a result of human activities.

Iskenderun Bay Project – Volume II – Systemic and Prospective Analysis, MAP Technical Reports Series n°90.

The specific task of the Blue Plan consisted in giving methodological assistance to the Turkish team. This assistance materialised in the course of joint meetings with the Turkish and Blue Plan teams in Ankara and at Sophia Antipolis, as well as in the course of Blue Plan missions in Ankara and Iskenderun, through synthetic reports, methodological notes and sets of maps and diagrams illustrating the approach, the issues and the results. The study involved three stages, the first being dedicated to system knowledge, the second to the Iskenderun Bay prospective and the third to the presentation and discussion of results.

The initial stage of analysis and system knowledge acquisition highlighted constraints, heavy trend and processes, and several tools were tested or suggested (primary mapping, structural matrix, social accountancy matrix, analysis of the actors' role). Primary mapping is a schematic representation of the system's elements and their interrelationships, it is an initial model of the study zone used to classify incomplete data. Applied to Iskenderun Bay, mapping

highlights the actors involved, the imbrication between the activities on the coastal zone, the importance of the urban phenomenon, the hypertrophy of the "Transportation" function. Through structural analysis, the existing relationships between the system components can be described and analysed, by using a double entry matrix. There are 66 variables, which describe Iskenderun Bay within eleven sub-systems: nature, population and society, economy and society, agriculture, industry (including craftsmanship, and the agri-food sector) energy, tourism, transportation, construction and public works, pollution and waste, and political and administrative systems.

An analysis mode for the actors' role, "Heritage Audit", rests on actively involving those actors who are considered as experts in their fields. This method consists in obtaining the opinions of a pre-selected group of people, during semi-directive conversations and according to a pre-determined grid. Within the framework of the Iskenderun Bay Project, this result in 43 conversations within the study zone and in 7 conversations in Ankara, leading to better understanding of the actors' motivations, differences and converging interests.

The second stage was dedicated to the prospective per se of Iskenderun Bay. The Blue Plan contributed to setting up the hypotheses for both scenarios (trend and alternative) by the year 2025. The hypotheses involve the same criteria as those used by the Blue Plan in its global Mediterranean scenarios.

The trend scenario for Iskenderun Bay by 2025 is characterised by moderate economic growth and the search for short-term profit within a fiercely competitive environment, inefficient social policies, laxist and conflictual spatial management strategies and, finally, environmental consideration of the curative type, in emergency-triggered and individual cases. The resulting prospective image of Iskenderun Bay demonstrates two speeds of social development, and highly contrasted spatial land use. There are economically deprived zones and rural exodus conditions along with industrialised areas, strong urbanisation growth and communication means. Pollution and hazards degrade -and sometimes destroy- natural media, such as the coastal ecosystem and lead to many conflicts within the involved activities in terms of natural resource exploitation.

The alternative scenario is characterised by strong economic growth within regional co-operation context, slower urbanisation evenly balanced between major and medium-size cities, diversified industrial productions and tourism activities. This scenario requires voluntarist policies, regarding spatial management and environmental consideration, to establish the conditions for sustainable development. In this context, the image of Iskenderun Bay is that of a global region structured around an industrial and urban axis, under controlled management, surrounded by two areas of balanced development based on the rational use of natural resources (agriculture, fishing, aqua culture) and on tertiary activities compatible with the protection of certain remarkable ecological areas.

During the third phase of presentation and discussion of results, the Blue Plan participated in the public presentation of the final report by the Turkish team from the University of Political Sciences of Ankara, illustrating the overall approach and the essential results, through the use of maps and diagrams. This presentation was made to a large audience of local authorities (municipalities, chambers of professional groups, Associations for the protection of the Bay environment, industrialists) and officials from various ministries and state bodies.

The discussion gave rise to fruitful exchanges concerning the proposed model of environment management and the conditions for its implementation.
In conclusion, systemic and prospective analysis of Iskenderun Bay has resulted in the following:

- it has highlighted the risks of long-term degradation or destruction of natural resources and media;
- it has identified present and future conflicts between activities and resources;
- it has underlined the multiple interdependencies between development and environment on various scales;
- it has initiated collective reflexion processes on the future of the Bay, demonstrating the mobilising power of the prospective approach.

A contribution of ecology to the prospective of Mediterranean coastal areas. Problems and acquisitions. S.I. Ghabbour. MAP Technical Reports n°91

For the Blue Plan, the purpose of the prospective surveys is to offer the possible choices to decision-makers, to avoid the negative looping of the environment onto development, or at least to inform them of the damage and if possible the intensity and the time such damage is liable to appear. This should assist in the reasoned and rational decision regarding the use of space and limited natural resources. To achieve this prospective, the Blue Plan needs a "state zero" and for decision-making aid, must offer choices and ensure simulation. Such simulation should identify environmental breakdowns that could occur in the longer term according to such and such a development hypothesis. The environment prospective cannot be abstract. It must be based upon firm knowledge of the current state of the environment and its evolution in terms of the "land-sea" interface of the coastal areas. It is also necessary to be familiar with the threats weighing upon natural resources and the evolution of such threats in the course of time, and the socio-economic factors governing them. Therefore, it is necessary to build a range of environmental state indicators enabling the Blue Plan to better conduct its environmental prospective study and enabling the decision-makers to find out about the consequences of their choices once implemented. These indicators have to be simple and comprehensible.

To construct an environmental prospective study, it is first necessary to begin with in-depth analysis of the problems arising from the use of environmental state and coastal ecosystem ecological indicators in terms of organization and operation.

As observation tools, these indicators must bring together the environmental conditions themselves with socio-economic conditions of the populations concerned. But for the Blue Plan, it is obviously not a question of it undertaking such measures and analyses itself, but rather of using the existing indicators that are the most pertinent possible. Therefore, it was essential to draw up a table of existing or proposed indicators on the basis of objective hierarchization. This table is justified in particular since some of the sites chosen for the local prospective, such as Foukah in Egypt, do not refer to environmental state indicators. How can an environmental prospective be carried out for a site like this, if not in abstract terms, on the basis of general information and old data?

To obtain a coherent system of indicators, they have to be derived from a real situation in one way or another, otherwise the prospective is liable to become an intellectual exercise that will be less and less useful for the deciders. What is the point of telling a factory manager that the heavy metals he is dumping into a lake or river are harmless to the environment? He probably already knows the fact, considering the media coverage these areas have been given. What is far more useful is to let him know how long a time he has to reach permissible thresholds before he is obliged to change his production system. That is the real role of the prospective: to state exactly what the dangerous pollution ratios are among the various ecosystem elements, what their evolution and effects upon the population are going to be, and to establish tolerable thresholds for each and every ecosystem. Because if the Blue Plan environmental prospective study is confined to theory and generality, it will soon become meaningless. The interest of the indicators drawn up in this way, as described in the Introduction, Chapter 1, briefly outlines the relationships between environment and development from the sustainable development concept point of view. Chapter 2 describes the specific situation of coastal areas and their problems. Chapter 3 goes into the particularities of Mediterranean coastal areas, often jammed between the sea and the mountains or between the sea and the desert, emphasizing problems of land use and of natural resources characterizing the Mediterranean. Chapter 4 describes the situation, uses and threats weighing upon the 6 sites recommended for attention by Mediterranean Action Plan within the Coastal Area Management Programme (CAMP) including Foukah in Egypt and Sfax in Tunisia. Chapter 5 approaches environmental and ecological indicators, defining these terms in detail so as to better contribute to the environmental prospective. Chapter 6 is devoted to other programs underway or in the design stage, using, or which will use, indicators to monitor the state of the environment. These other programs are those of the World Bank and the International Geosphere and Biosphere Program (IGBP) as well as the DIVERSITAS program being carried out by three organizations, the International Union of Biological Sciences (IUBS), the Scientific Committee on Problems of the Environment (SCOPE) and the Man and Biosphere (MAB) program at UNESCO. This Chapter is a means of comparison. Chapter 7 goes further in examining the principles for choosing useful indicators for Mediterranean coastal areas. It derives considerably from the reports of the Mediterranean Action Plan (MAP). This chapter also shows that the experience comes essentially from non-Mediterranean coasts and is therefore only partly applicable to the Mediterranean. Chapter 8 gives details for drawing up an environmental monitoring program and contributing to the environmental prospective study in the CAMP. Finally, Chapter 9 includes conclusions, presenting several proposals for operational action, especially concerning administration and education, to improve the conditions under which the environmental prospective could be continued at the regional and national level.

Three documents are attached to the Report. The first includes indicators discussed by the IGBP for terrestrial ecosystems according to the deliberations of the Ury meeting (Fontainebleau) of July 1992. The second concerns the indicators proposed for the EEC CORINE program taken from an unpublished report by Mr. Blandin, Director of the General Ecology Laboratory at Brunoy, from the National Natural History Museum of Paris. The third goes into some detail of the advantages and drawbacks of teledetection as a tool for monitoring the state of the environment.

With these details, the ground will be prepared to conceive the environmental prospective for Mediterranean coastal areas in general and of the Southern coast in particular. Because the local and national authorities are concerned, and because multidisciplinary experienced scientific teams are present, capable of handling the assignment, all this task needs is the appropriate conception. Accordingly, the environmental prospective is only possible by close cooperation with national teams in the field and efficient and constant regional cooperation using an approach based upon solid ground.

APPENDIX

SUSTAINABLE REGIONAL DEVELOPMENT
SYSTEMIC & PROSPECTIVE TOOLS
Applied to the Sfax Rgion de – Sidi Dhrif, 6-10 june, 1994

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