MEDITERRANEAN ACTION PLAN
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UNITED NATIONS ENVIRONMENT PROGRAMME

WORKSHOP ON POLICIES FOR SUSTAINABLE DEVELOPMENT OF MEDITERRANEAN COASTAL AREAS

SANTORINI ISLAND, 26-27 APRIL 1996

PAPERS BY A GROUP OF EXPERTS

JOURNEES D'ETUDE SUR LES POLITIQUES DE DEVELOPPEMENT DURABLE DES ZONES COTIERES DE LA MEDITERRANEE

ILE DE SANTORIN, 26-27 AVRIL 1996

COMMUNICATIONS PAR UN GROUPE D'EXPERTS

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This volume is the one hundred and fourteenth issue of the Mediterranean Action Plan Technical Reports Series.

This series will collect and disseminate selected scientific reports obtained through the implementation of the various MAP components: Pollution Monitoring and Research Programme (MED POL), Blue Plan, Priority Actions Programme, Specially Protected Areas, Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea, Environment Remote Sensing and Protection of Historic Sites.

Ce volume constitue le cent quatorzième numéro de la série des Rapports techniques du Plan d'action pour la Méditerranée.

Cette série permettra de rassembler et de diffuser certains des rapports scientifiques établis dans le cadre de la mise en oeuvre des diverses composantes du PAM: Programme de surveillance continue et de recherche en matière de pollution (MED POL), Plan Bleu, Programme d'actions prioritaires, Aires spécialement protégées, Centre régional méditerranéen pour l'intervention d'urgence contre la pollution marine accidentelle, Centre méditerranéen de télédétection et Protection des sites historiques.

AVANT-PROPOS

A l'initiative de Madame Elisavet Papazoi, alors Ministre adjoint de l'environnement et avec le soutien financier du Gouvernement français, le Plan d'action pour la Méditerranée a organisé, sur l'île de Santorin (Grèce), un important séminaire sur le développement durable des zones côtières (26 et 27 avril 1996). Beaucoup d'experts représentant les pays membres de la Convention de Barcelone étaient présents et ont participé activement à cette session.

Celle-ci avait pour objectif de présenter les principaux problèmes relatifs au développement durable des zones côtières de la Méditerranée question qui figure parmi les plus importantes du PAM, Phase II; le présent document rassemble les exposés qui ont été préparés par les experts mandatés par l'Unité de Coordination pour la préparation de cette réunion.

Nous espérons que ce document sera utile tant aux autorités nationales et locales concernées qu'aux experts et aux étudiants. Nous espérons également que ce séminaire fera progresser les politiques nationales dans ce domaine essentiel.

Je remercie tout particulièrement le Dr George Kamizoulis de l'OMS et le Professeur Harry Cocossis de l'Université de la Mer Egée qui ont été les principaux organisateurs de ce séminaire.

L. Chabason
Coordonnateur
Plan d'Action pour la Méditerranée

FOREWORD

On the initiative of Mrs Elisavet Papazoi, then Deputy Minister for the Environment of Greece, and with the financial assistance of the French Government, the Mediterranean Action Plan organized an important seminar on the Sustainable Development of Coastal Areas, on the island of Santorini (Greece) (26 and 27 April 1996). Several experts representing the member states, parties to the Barcelona Convention, were present and actively participated in the Seminar.

The objective was to shed light on the various problems concerning the sustainable development of the coastal areas of the Mediterranean, one of the main themes of MAP, Phase II; this volume contains the papers prepared by the experts which were entrusted by the Coordinating Unit with the organization of the meeting.

We hope that this volume will be useful both to national and local authorities concerned with the problem as well as to experts and students. We also hope that the seminar will contribute to the development of national policies in this fundamental area.

Most especially, I would like to thank Dr George Kamizoulis of WHO and Professor Harry Cocossis of the University of the Aegean, principal organizers of the Seminar.

L. Chabason
Coordinator
Mediterranean Action Plan

INTRODUCTION

Coastal areas are priority areas in the Mediterranean due to their ecological, economic and social importance, and the conflicts of use and intensive pressures for development which they face. Mediterranean coastal areas need policy action, and their particular characteristics are derived from their natural ecosystems structure and dynamics, human ecosystems structure and dynamics and the interaction between natural and human ecosystems.

Due to the increased importance of the issue, the Mediterranean Action Plan and the Ministry of the Environment, Physical Planning and Public Works of Greece, with financial assistance from the French Government, jointly organized a Workshop of Experts on Policies for Sustainable Development of Mediterranean Coastal Areas on 26 and 27 April 1996 at Santorini Island, Greece.

The Workshop was divided into three sessions. The first was devoted to thematic presentations regarding critical issues of sustainable development of coastal areas. For this purpose, several experts were invited to express their views on these particular issues. This volume includes the presentations of the invited experts during the session of the thematic presentations.

The second session focused on recent policy developments in Mediterranean countries and national experiences. These presentations were made by the country representatives and a summary of them is included in the final report of the meeting. The detailed reports are kept in the library of the Coordinating Unit. During the last session, the participants discussed and exchanged their views on national and local policies, plans and programmes, and international cooperation for priority actions.

During the workshop, it was emphasized that the management of the problems of Mediterranean coastal areas should be rational, combining short-term needs with long-term perspectives and aspirations. In addition, an integrated approach is more efficient than a fragmented one, and therefore, integrated coastal area management is an ideal approach to ensure multisectoral coordination and integration of tools.

Mediterranean countries often lack the necessary institutional, financial and technological framework to pursue such comprehensive approaches. However, a lot of efforts are increasingly addressed to saving the problems of coastal areas. Some of the policy responses are partial or sectoral or small-area oriented, while a few are comprehensive and integrated.

Although a lot of scientific reports and publications have also been published on this matter, evidence on political response and solutions implemented by governments to face coastal area problems is fragmented. A global view on relevant policies implemented in Mediterranean countries, as well as EU policies, was given during the workshop. Furthermore, the outcome of the policies and the efficiency and inefficiency of these policies, were also discussed.

The final conclusions from the discussion taking into account also the presentations by the participants are summarized below:

1. Sustainable development policies for Mediterranean coastal areas should be:

- Multi-dimensional and long-term oriented.
- Structured and proactive.
- Targeted to critical factors (pressures, resources) and issues.
- Based on the conservation of biodiversity, natural resources and ecosystem functions as a basis for social and economic development.
- Diversified and adapted to the **type** of problem area addressed.
- Mobilizing basic actors in the spirit of "shared responsibility" through sensitization to issues and participation in the management of coastal areas.

2. A comprehensive approach should be instituted to plan and manage the Mediterranean coasts in an integrated way so as to include:

- Special legislation for protection of coastal areas.
- Delineation of coastal natural reserves for present and future generations.
- Identification of a **critical zone** for strict management.
- Linking the planning and management of the critical zone to a **wider area of influence.**
- Coastal area management should be linked to urban planning and regional development programs.
- Specification of urban development control legislation to the characteristics of the coastal areas.
- Landscape protection incorporated in rural management policies.
- Management should be extended to the sea side as well.

3. Social acceptance is considered central for the implementation of policies and measures for coastal zone management. There is a need for structures and mechanisms to manage conflicts at local level. Identity enforcement is essential for implementation. To this end dialogue with the public must be initiated and promoted.

4. Coastal zones need to be declared free of major industrial or energy installations especially nuclear ones which constitute significant environmental risks.

5. Coastal zones must be a major thematic area for the EuroMediterranean Cooperation as well as of the programs of International and Economic Organizations. The Mediterranean Action Plan can play a supporting role in this context given its long experience in Mediterranean coastal issues.

6. Islands are a particular case due to their openness and fragility and special integrated management plans should be prepared to respect their local capacities to sustain growth. Cooperation among islands is essential and to this end a network of Mediterranean islands could be supported.

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SMALL ISLANDS

by

Dr P. Giovanni d'Ayala

WHAT FUTURE FOR ISLANDS:

UNSTABLE OR SUSTAINABLE DEVELOPMENT ?

1. INTRODUCTION

For the last few years, the latest catchword fascinating both islanders and island decision makers has been “sustainable development”.

It is a catchword with many dimensions, many interpretations and many definitions, including perhaps the unexpressed feeling that the world is changing swiftly towards still largely unknown configurations made of new forms of political and economic integration, together with changing patterns of cultural and social globalization.

Islands such as the many small ones surrounding the European continent are again questioning their future, as they have done in the past, when powerful events shook their position within established historical frameworks.

In other words, our catchword resembles a sailor's uneasiness when facing an unknown course while longing for familiar and stable landing marks.

Metaphors aside, the sustainable development concept, while concealing uncertainty about the future, is at least highlighting in islands the search for new and better opportunities.

In fact, islands are not left out of the process of globalization, which is the consequence of increased human mobility, enhanced communications, greatly augmented trade and capital flows together with substantial development of technology (H. Coccossis, 1987).

Moreover, islanders are perfectly aware of the geo-strategic importance recently acquired by many of their territories both for military reasons, and the presence of potential resources from their exclusive economic zone. The recent polemics on the uninhabited islet of Imia or Kardak in the eastern Aegean is an extreme but significative case in point.

2. SUSTAINABLE DEVELOPMENT: A PROMISING BUT FUZZY CONCEPT

Before closer examination of its consequences in concrete island situations we should examine more in depth the pros and cons of the sustainable development concept.

It is commonly accepted that the sustainable development of an area means to provide goods and services, curtail the options for ecosystems recovery, and preserve valuable landscapes in a way that maintains the major attributes of an area for future generations to use and enjoy.

Development always requires energy and resources and, additionally, a change in their pattern of use. Development can focus on the protection of the natural and cultural heritage or on economic gain, or a balance between the two. This last notion is an integral part of the concept of sustainable development.

However, let us question the concept further. Is the development of a venture sustainable for 100% or 0%? This is the exact meaning of "yes" or "no" as Roehof Oedeman puts it (R. Oedeman,1995). In the real world such statement can not be made; Any real development can only be something such as: "quite", "rather", "somewhat" or "highly" sustainable. The other basic question concerns the time dimension. How long should development accepted as "sustainable" last? A decade? Five decades? Or a century? Here again we are trapped by uncertainty. "Forever" has obviously no meaning for any practical purpose.

We are therefore going around in circles with a concept which is truly fuzzy. Dictionaries variously describe fuzzy as "not firm or sound in substance", "blurring", "indistinct". Fuzziness indeed may at times be a source of confusion and frustration , particularly in operational terms when real decision making is at stake.

However, the main reason for the growing acceptance of the concept is not its truth, but its aptitude to facilitate compromises. This is precisely because a fuzzy concept can loosely be adopted by different people with different objectives. Sustainable development can therefore be used as an umbrella concept, providing the framework for overlapping consensus.

3. LESSONS FROM PAST RESEARCH

In recent decades many scholars from various disciplines, especially those collaborating within UNESCO's Man and the Biophere Programme (MAB), were attracted by the island theatre as an appropriate subject to better understand man's interactions with his environment. The apparently finite geographical dimension of islands, especially the smaller ones, suggested to the scientists that these entities, perceived as rather closed systems, could be considered as appropriate laboratories to uncover all aspects of the above interactions and possibly to extrapolate the findings to larger, and presumably more complex continental systems.

These initial hypotheses, however, were not confirmed by fieldwork. Converging evidence showed that man, albeit living on an island, was always prone to take advantage of opportunities stemming from outside his island. As a consequence, his operational environment can not be considered as limited by the physical dimension of the island. An open and very complex system in other words. The island of Inousses, near Chios in the Eastern Aegean, for instance, has a few hundred inhabitants , all of them skippers or important ship owners.

Their offices are in London, their fleet operates worldwide. Their instruments are fax machines and electronic- mail. Decisions however are taken on Inousses, a barren overgrazed rocky island, like many in the Aegean. What is the dimension of Inousses' operational environment? What would sustainable development for its people mean?

The second important aspect uncovered by research concerns is the old endemic tendency of islanders to specialize in one single profitable activity. Here perhaps, the objective limitations of the perceived available resources have prompted them to focus on so-called "mono-cultural systems", swiftly adapting to externally generated favourable opportunities (M. Cruz, P.G. d'Ayala, E. Marcus, J.L. Mac Elroy and O. Rossi, 1987).

4. THE PITFALLS OF SPECIALISATION

Some historical examples from the Mediterranean islands.

Lesbos, an island in the Aegean, has specialized in the cultivation of olive groves which cover almost all of the island. Since last century, olive oil was produced almost industrially and many soap factories were active, exporting throughout the European and Middle-East markets. The Lesbians were affluent, and imported whatever they needed, including interesting patterns of European Architecture which still mark their capital, Methylene.

During World-War II , 1400 deaths were reported for 1942 in Lesbos, as compared to 390 in 1939 (E. Kolodny, 1974). Children and elders were starving when commerce and imports were prohibited by war constraints. Oil and soap were not enough to sustain them. Later on, the introduction of chemical detergents imported from abroad and marketed from continental Greece contributed to the migration of capital and labour towards the Greek mainland cities.

Another Greek island, Syros, endowed with an ample and safe harbour, got its wealth last century from its geographical position in the mid-Aegean on the sea routes followed by steamers sailing through Gibraltar from North Mediterranean harbours, and through the Suez canal and Alexandria towards Constantinople and Black Sea harbours such as Constanza and Odessa.

Syros was in the right place to provide coal and water to the ships sailing to and from the Black Sea. Its charming small capital Hermoupolis still reflects the wealth brought by the 19th century shipping business. Later on, steam engines were fuelled with oil and after World-War I driven by diesel engines. The stop-over on Syros was no longer needed by the vessels passing by. A technological advance: steam engines made Syros' wealth and a few decades later an other technological advance, diesel oil, put Hermoupolis to sleep. Not even tourism could help in more recent times. A sleeping beauty, Hermoupolis is still waiting for the kiss of the prince charming, a new opportunity.

Another Mediterranean case worth mentioning is the island of Salina, located in the Lipari Archipelago North-East of Sicily (P. Hein, W. Beller, P.G. d'Ayala, 1989).

A fertile volcanic island, Salina was practically uninhabited till the end of the XVIIIth century. Only nearby fortified Lipari island could be defended from the continuous raids of the North-African pirates and support a stable settlement.

Two converging rather remote events took place during the first years of the last century. Napoleon put an end to the thousand-year old Republic of Venice with its commercial monopoly on the production and export of Greek wines, the reputed malmsey dessert wine in particular.

French and British fleets were contending for leadership all over the Mediterranean. Nelson finally imposed the Pax-Britannica and the French took Algiers, sweeping away the Muslim pirate danger. The church of Lipari, which owned Salina since the time of the Norman Kings of Sicily, took the opportunity offered by the new geopolitical situation in the Mediterranean to lease the island to able entrepreneurs who, attracting labour from Sicily and abroad, started to plant Malmsey wines on Salina, building thousands of stone terraces on the steep slopes of

the ancient volcano. In a few years and till the mid XIXth century, the population increased steadily up to more than eight thousand inhabitants. Here again, the people became affluent, built ships and successfully exported Malmsey wine to France or even Russia.

Salina was stricken in its turn by the philossera, an American parasite which a few years earlier had destroyed the larger parts of the European vineyards. Salina's people's reaction was not to turn towards self-sufficiency, but rather to try new opportunities offered in Argentina, USA and later in Australia. Salina presently hosts a population of 2300 people, living on a scant tourism, public remittances and part-time jobs.

The above examples drawn from the past of Mediterranean islands are not isolated. Many others are recorded abroad and overseas. The lesson that can be taken from these cases is twofold:

a) to depend on a single specialized activity obviously means to depend on the vagaries of international markets, political crises and many other external factors beyond the control of islanders themselves. While development induced by the perceived historical opportunities is swiftly implemented together with the increase of the local population by immigrants, the whole favourable cycle lasts generally only a few decades and is followed by economic depression and emigration. Such a cycle shows peculiar patterns of unstable development specific to islands together with considerable consequences on their demography and environment (J. Mac Elroy, K. de Albuquerque, E. Towle, 1987);

b) the Salina islanders and those of Samos who went through a similar venture, were perfectly aware of the threat represented by philossera for their vineyards. They preferred, however, to take advantage as long as possible of the increased price of wine without taking any measures to prevent the expected final disaster.

We have the feeling, in other words, that man, when settling on an island, seems to balance advantages and disadvantages without a special attention for the long term, thus introducing a high factor of risk both for the fragile environment he is using, and the social fabric he has built upon.

Islanders, as suggested by N. Vernicos (N. Vernicos, 1987), seem to adopt a risk management behaviour in a way that will maximise short-term benefits and gains and minimize the consequences of disruptions of profitable junctures taking advantage of a well adapted social flexibility, a constant access to information from abroad together with a high mobility.

5. IS TOURISM SUSTAINABLE OR UNSTABLE?

Having examined from a historical perspective the pitfalls of specialization for islands, let's now examine briefly the complex issue of tourism.

All of us have been witnesses of the powerful expansion during the last decades of this worldwide leading service industry. Practically all insular regions have been attracted by the

siren's song of the tourism mermaid. Practically all islands, especially the smallest ones in the Mediterranean, are confronted today with the contradictory choices made since the early sixties.

We must consider, however, that after the Second World-War the traditional economies of many islands were fading away under the pressure of industrial development in continental countries. People and capital thus migrated towards the mainland cities, leaving local societies almost exhausted.

Tourism therefore represented for them a difficult opportunity to refuse. After all, it contributed to fixing or increasing the resident population by providing jobs and improved services such as transport by air or sea.

On the other hand , it attracted labour forces from less performant economic sectors such as agriculture, contributing to marginalize further the traditional activities handicapped by harsh competition for scarce resources such as water, and the increase in land prices due to speculation and public and private infrastructural works, generally on the best parts of the islands such as airports, roads and touristic compounds. The development pattern again was a specialized one, a monoculture, and exponentially increased the fragility of the island's social and economic fabric.

Tourism in fact depends on many conjunctural or structural factors. Evolving on a worldwide landscape, it may also, when it becomes a specialization, introduce not only the well-known negative impacts on environment and culture, but also foster dangerous elements of instability and powerful risk factors.

The consequences of the Yugoslavian conflict on the once flourishing tourism of the Dalmatian islands and coasts are still before us (P.G. d'Ayala, 1995).

6. THE INTERNATIONAL DEMAND IS CHANGING

I would like, however, to draw your attention to a perhaps less known trend of the international leisure time industry contributing strongly to the present uncertainties of the once perfectly oiled "three S" machinery as it was called.

The quality of the international demand for leisure-time has been changing deeply in recent years. People from affluent European and North-American countries no longer seem to like to "tan stupidly" and to be passive elements in a consumer market. They increasingly develop an interest towards the natural and cultural environment of the countries they visit. They wish to have a real, active, participatory experience together with their hosts. Such a demand is also expanding within domestic tourism. History, environment, local cultures are increasingly important for travellers, foreign and domestic.

With the exception of a few tour operators and some enlightened hotel owners, almost nothing was done till recent times in order to respond to this new demand.

After all, traditional investments in the tourism sector as well as travel practices are still profit making, even if less so, given the strong competition existing nowadays among the various destinations offering similar products, compared to the golden years between the seventies and the eighties.

7. ECOTOURISM AND SUSTAINABLE DEVELOPMENT

The idea of sustainability or its contemporary label "Sustainable Development" is not yet a theory or even an approach, but more an evolving vision representing the convergence of different concerns, disciplines and political pressures (S. Bookman, 1994).

Most would agree that a development which is sustainable should pursue the following goals:

1. It should ensure that future generations inherit technological capital and environmental health that is greater than the one inherited by the present generation (World Commission on Environment and Development, 1987);

2. it should not interfere with the natural functioning of life support systems and should contribute to environmental protection, including biodiversity (Berkmuller and Monroe, eds. 1986);

3. it should facilitate the participation of all sectors of society in decision-making with a thorough understanding and respect for the cultural values of the affected communities (Asher and Healy, 1990);

4. finally, it should foster the equitable distribution of all costs and benefits.

It is not certain that such objectives can be readily integrated by a profit-oriented travel and tourism industry.

Many claim that the commitments and incentives needed to implement the necessary reforms can be conceived within the framework of "ecotourism". "Ecotourism" however is a rather elusive concept, as it simultaneously "describes an activity, promotes a philosophy and espouses a model of development" (Ziffer, 1989).

It is not surprising, therefore, that the definition of ecotourism has been as widely debated and misconstructed as that of sustainable development. Whatever the context may be, the values and ethics which are reflected by the concept of ecotourism are scarcely found in other segments of the tourist industry.

8. OBSTACLES TO SUSTAINABLE TOURISM

Many of the fashionable tourism destinations of the last decades have reached a threshold at which the experiential satisfaction of the tourist and the financial satisfaction of suppliers and investors has declined, due to all sorts of negative environmental changes. We have seen several examples of situations in our home country and abroad where tourists, along with their dollars, are beginning to look for new frontiers, for unspoiled and primitive islands (S. Bookman, 1994) (J.L. Mac Elroy, K. de Albuquerque, 1994).

As long as traditional methods of tourism development prevail, we can expect to see the terrible mistakes already made on countless islands of the Mediterranean, the Caribbean and elsewhere repeated.

This suggests that it is even more urgent that small island states, and nations endowed with islands, begin to re-examine their tourism policy in light of the knowledge that the long- term economic benefits of preserving their natural and cultural heritage, attracting thus nature and culture-friendly tourists, far outweigh the short-term profits made by exploiting and overusing such resources.

9. ECOTOURISM IS STILL TOURISM

A promising horizon for sustainable tourism can be envisaged , on the condition that we avoid the simplified view of some developers who believe that landscapes or natural beauty can be readily sold with little capital expenditure.

The reality, on the contrary, is that eco and /or cultural tourism is still tourism based on profit-making activities and, no matter how much innovation it may represent, a substantial amount of capital, ideas and time will be required in order to avoid the Damocles sword of instability for such relatively new trends of leisure time-use.

Hence, if we accept the idea that ecocultural tourism adds value to the natural and cultural environment, in order to promote its aims , substantial investment is required. In other words sustainable tourism costs should not be underestimated (S. Bookman, 1994).

Up to the recent years, the professional operators, sometimes followed by national authorities, used to complain about short-term crises due to temporary circumstances, but paid limited attention to the need to innovate deeply in the operation of the whole tourism sector in qualitative terms in order to comply with the structural change of the demand.

Today, most of the national and local island authorities are becoming increasingly aware of the dangers represented by specialisation, including its long-term cost both for the national and local communities, and anticipate diversifying the economic and also the cultural basis of resource use in a given area.

10. LOOKING FORWARD

As a conclusion, we may admit that tourism is now subject to strong competition. Islands are still on the path of national and international travel.

In island nations where development options are relatively few, though the abundance of natural beauty is great, sustainable tourism patterns might be envisaged on condition that extra caution be exercised to protect these special ecosystems and their aesthetic and cultural values, which are particularly susceptible to the detrimental externalities of tourism development.

While ecotourism concepts are rapidly spreading around the world, there exist relatively few places where true ecotourism which is environmentally sound and economically sustainable takes place. It is an excellent opportunity for island communities to innovate and upgrade, to establish quality standards and inform and educate their people and tourism professionals about the responsibilities entailed in creating and keeping a favourable landscape for sustainable tourism;

We believe that the islands which confront the above issues within a coherent and global long-term strategy will be in a position to demonstrate to the international community that tourism, conservation and economic development can peacefully coexist.

Such a concern is shared at the international level by the Action Plan adopted by the UN Conference on Sustainable Development of Small Developing Island States held in Barbados in 1994, as well as by the Charter adopted by the UNESCO-INSULA World Conference on Sustainable Tourism held in Lanzarote in April 1995.

11. INNOVATION: A MUST !

The general consensus which seems to have emerged since the Rio conference and Agenda 21 in almost all aspects concerning development, addressing issues such as environmental quality and less tangible elements concerning the quality of life including health, culture, education, public awareness and participation is also, at the origin, especially on islands of a wealth, of initiatives showing interesting features of innovation and diversification supported in many cases by interplay among public authorities, scientific institutions, environmental NGO's and public opinion, made in turn more aware of the issues at stake by progressive media producers.

The ongoing process is obviously complex and it is not clear yet whether stable or sustainable configurations will emerge. Some current experiences are based on the application of recent technologies to resource management, others are innovating deeply in organizational terms. Some islands are adopting original solutions bringing together both technology and organization, while in other cases scientific institutions are contributing to better planning and management of island natural resources.

It will not be possible to present here a complete overview of ongoing experiences. We shall instead try to bring forward some significant examples from Mediterranean and European islands and, when needed, from overseas.

12. NEWS FROM THE MEDITERRANEAN ISLANDS

Allow me to recall here one of the most interesting and innovative endeavours in the Mediterranean area, namely, the creation in Greece in 1985 of the university of the Aegean. A first attempt to design an institution of higher education tailored to the specific needs and features of the Aegean islands , rather than, in the words of Prof. Costas Sophoulis , former president of the University , to the country's average needs. Administratively based on the island of Lesbos, the faculties are decentralised on several islands of the Archipelago. Not only many youngsters from the islands but also from mainland Greece and abroad are currently pursuing their studies at the University. The main objective of the Greek government was the transfer of activities from the mainland to the islands and the systematic promotion of the region's comparative advantage. The impact on the islands and their cultural identity is already strongly felt.

I recall this issue because in September 1994 in Lemnos, we participated to the presentation of the action plan for the Aegean Archipelago and its cultural development. This was

another multifaceted action, rich in innovations, proposed by the late Melina Mercouri to UNESCO's Director General and presently strongly endorsed by the Greek government.

As the representative of the INSULA-International Scientific Council for Island Development, along with other international personalities, I also signed the Lemnos Declaration to contribute and cooperate towards the goals of the Aegean Archipelago Programme. These are leading examples of innovation, but innovation is based on ideas, people and institutional instruments (P.G. d'Ayala, 1995).

A second Mediterranean example comes from the Italian small islands; The Italian government has decided to produce a detailed geographical information system on the status of the environment of the whole national territory starting from its smaller islands. A pilot study based on satellite image analysis as well as on aerophotogrammetry was conducted by the University of Parma on the island of Salina and the surrounding marine coastal zones and extended to the Lipari Archipelago north-east of Sicily.

Salina, following advanced methodology, was divided into environmental units according to the Corine Biotopes classification proposed by the European Union, and a comprehensive digitalized mapping showed for each unit: a) the degree of ecological vulnerability , b) the degree of ecological sensitivity-reactivity, c) the degree of anthropic pressure during the year, d) the description of quality and quantity of natural and /or man-made biotopes, including artifacts in the anthropized areas.

The whole project aims to produce scientifically correct parameters to allow the responsible authorities to engage in appropriate and environmentally sound land-use management and planning (O. Rossi, M, Vezzosi, A. Ayala, 1996).

The island of Minorca in the Balearic islands might be considered as an outstanding example of what sustainable development should be.

With a surface of about 700km2 and some 60.000 inhabitants, the island has taken advantage of the national and regional legislation to protect more than 40% of its territory, the coastal zones and surrounding marine areas in particular. For years, its economy was largely diversified thus escaping to the pitfalls of specialization in the tourism industry which has characterized the well-known nearby island of Majorca. About sixty small performant enterprises produce bijouterie for export. An international fair on such products is organized every year, stressing Minorca's role as main European producer.

A second productive sector concerns leather manufacture. Quality shoes and leather goods are exported and distributed internationally, mainly by Italian firms. The primary sector and agriculture dedicates itself mainly to cattle raising and quality milk products for export such as cheese, yogurt etc..

Tourism follows strict quality patterns based on the environmental quality of the island's landscapes and nature as well as on its outstanding cultural and archeological heritage.

No wonder Minorca shows the highest income per capita of all of Spain. It is perhaps the strong social cohesiveness, together with their traditional entrepreneurship, which is at the origin of the present development patterns followed by these islanders. Of course, its long-term sustainability can always be questioned: many problems are still waiting for optimal solutions

such as safer water supply, energy dependency or waste management. They are presently under study and will hopefully be solved in the near future.

It is interesting to note that in 1994 Minorca, as well as Lanzarote in the Canary Islands, requested and obtained from UNESCO the status of Biosphere Reserves for their entire territories and surrounding sea-beds, binding both populations, and local authorities to respect the rules of such an international commitment. Both islands' policy-makers understood that to have the label of UNESCO's Biosphere Reserves was of course a "plus" offering the comparative advantage for their visitors of an internationally recognized label of quality.

13. THE DALMATIAN ISLANDS

The Croatian government, and in particular its Ministry for Development and Reconstruction, launched the national programme for the development of the Dalmatian Islands presented at the International Workshop organized in February 1996 in the island of Krk along the northern Adriatic coast (N. Stark, 1996).

The situation of the seventy some uninhabited islands is characterized by severe depopulation which took place after World-War II, with the consequent abandonment of traditional activities such as agriculture, trade, shipping and fishing. A phenomenon widespread in other Mediterranean archipelagos.

Here again, a swift rise in tourism was observed since the early sixties supported by the voluntaristic policies introduced by the former Yugoslavian government and the proximity of affluent countries such as West-Germany, Austria and Italy. A typical mass and low-cost tourism characterized this period, with scarce attention to local environments and cultural features, obviously increasing the imbalance between the development of the tourism sector and the decrease of other productive sectors of local economies.

The recent Yugoslavian conflicts put that wild touristic development to an end, showing its inherent instability. The end of the conflict and the lessons drawn from the previous experience has encouraged the government to rethink its approach and develop a global strategic plan for the sustainable development of its islands.

The lines of action suggested by this plan can be summarized as follows:

a) Create all appropriate infrastructures needed to support multi-sectoral development:

- concerning transport, it is suggested to create a blue highway running from north to south over the islands, improving the road system, harbours, bridges and ferryboats between and over the islands. The blue highway would run in parallel with the highway built along the Dalmatian coast and connected with it;

- telecommunications and telematic technology will be introduced and improved, as well as cost effective renewable energy production technologies.

b) A comprehensive analysis of existing or potentially exploitable resources to start and sustain a multisectoral development process is earmarked. Such resources include not only natural, but also human resources. While an integrated system of protective measures, together with appropriate social use patterns are envisaged for the first, the improvement of training, education and public awareness programmes would aim at upgrading the available know-how together with the provision of new professional profiles.

c) Health, freshwater supply, treatment and re-use of waste water and solid waste are also considered as essential components of a comprehensive management plan.

d) Along with natural resources, cultural and historical heritage are also considered as a basis for a quality oriented nature and culture friendly tourism.

e) Finally, innovative legislation in areas such as public administration, fiscal, financial incentives have to be introduced both for stimulating and supporting local initiatives and creating an organic tissue of small and medium enterprises to operate in the various economic sectors, reduce unemployment and offer immigrants and investors appropriate opportunities to settle down with a satisfactory quality of life.

The above objectives, when confronted with the present situation, are undoubtedly ambitious, and the tasks put before the government and the island authorities overwhelming.

However, a good example however is the already completed management plan of the Cres-Losinj Archipelago in the North Adriatic. A comprehensive instrument carried out within the frame of the Mediterranean Technical Assistance Programme (METAP) financed by the European Commission; the European Investment Bank, the World Bank and UNDP (METAP, 1994).

The scope of this original work aiming at Cres-Losinj sustainable development is to provide guidelines for decision-makers at the Republic and municipal level for the conservation of crucial and irreplaceable natural ecosystems and cultural resources, while assisting in creating an ecologically and economically viable future for the island's population. A well expressed hope, shared by other islanders outside the Mediterranean.

14. THE ISLE OF WIGHT AONB MANAGEMENT PLAN

AONB stands for areas of outstanding natural beauty , another project representing an original attempt to add quality to the islanders' life and to their visitors' enjoyment.

The AONB concept is not new, since it was introduced in the United Kingdom in 1949 by the National parks and access to country Act, but it is perhaps the first time it has been applied to an island.

While the primary purpose of the designation of areas of outstanding beauty (AONB's) is to conserve and enhance natural beauty, due account should also be taken of the needs of agriculture, forestry, other rural industry and of the economic and social needs of local communities. Particular regard should be paid to promoting sustainable forms of social and

economic development that in themselves conserve and enhance the natural and historic environment.

Recreation is not an objective of the designation , but the demand for recreation should be met as long as it is consistent with the conservation of the natural beauty and the needs of other uses.

Such are the statements from the Isle of Wight AONB Joint Advisory Committee. The originality of the project stems from the fact that the concept is applied to a small island of about 189 square kilometres, and people living there have a strong feeling of belonging to today's landscape shaped by their forebears for centuries.

The management plan was therefore the result of much discussion between different opinions and interests about the need to work together as a community to solve common problems.

The consensus was quite hard to achieve since it involved much give and take, a non-political framework, and a free and frank debate. The benefits of such a process are great: a pooling of expertise and resources towards common goals, and a practical and realistic agenda for the quality of Wight's landscape and countryside up to the next century (I. Boyd, 1996).

15. UP TO THE NORTH, TO PELLWORM

Pellworm is one of the small Frisian islands in the North-Sea off the western coast of Schleswig-Holstein. Endangered by severe storm-floods Pellworm, lying like a soup plate some 0,5 metres below sea-level, is protected today by an eight-metre dike. The traditional economy has been dominated by agriculture, but since the sixties the small farm structure has been disappearing. The reform of EU agricultural policies has accelerated this tendency.

Pellworm's population has followed similar patterns, decreasing continuously and leaving a high percentage of old people (30% over 60 years) on the island. The fishing of shrimp , a small economic sector, is also shrinking (7 boats in 1970 to 3 boats in 1995).

Tourism, as elsewhere, has been increasing, with some 16,000 tourists per year. Nearly every household invested in tourist accommodation facilities, 2000 beds are now available for tourists.

People are attracted by the quiet and the liberty to go everywhere by bicycle, exploring the nature with its great diversity of birds, seals and other marine species.

Another attraction is the combined wind generator and photovoltaic solar energy plant. Also, private investors have built four wind generators, and a joint wind generator park is planned.

In other words, Pellworm has good prerequisites to be a "green island", but is somehow still a monoculture based on tourism even though nature-friendly.

In 1989, people from all social categories founded the non-profit association "Oekologisch Wirtschaften" (meaning: " Run the economy ecologically"). They had realised that the only chance to stop the process of depopulation and create new perspectives for the island

laid in its ecological development. The aim could be attained only by integrating all sectors' activities within a sustainability concept. They were convinced, moreover, that no single business or service would survive the ongoing structural changes at the expense of others.

More important than finding technical solutions was to create a new solidarity among islanders, and cooperate to solve common problems. The group working on agriculture made the first steps, suggesting ways to break the vicious circle forcing farmers to abandon agriculture. Organic farming was the way adopted to stop farmers' dependency on mineral fertilizers, pesticides and cattle fee from the mainland, and on the other hand, to sell their products to a competitive mainland market at low prices.

Six farmers turned to organic farming, producing vegetables, milk, crops, and meat following commonly agreed quality standards. They cooperated in fodder production, processing their production, sharing machines, exchanging land, caring for animals and founded a marketing cooperative to sell the bio-products locally.

Later on, they concentrated on developing local gastronomy, selling in the island's supermarkets, setting up farm shops and delivering their bio-products at a convenient price to the mainland.

Of course, the gastronomy-based green image attracted interested visitors and even private investors who decided to process commercially organic milk to curd, yogurt and butter.

Given the healthy air and food image, many families with children spent vacations on the island. Special programmes for young folk are presently organized and run by the local youngsters.

Allow me to conclude this section by mentioning the example of the experiences undertaken in Teneriffe (Canary Islands) by local government, NGOs and, other actors well aware that, after years of massive tourism, a mature situation was reached permitting an in-depth overview of future perspectives bringing together environmental quality and sound economic ventures.

A comprehensive programme called "TENERIFFE AND THE OCEAN" was launched recently concerning all aspects of the island's relation with the ocean, based on the idea that conservation and development are two faces of the same coin. "Let's not turn our back to the ocean" is the slogan of the programme.

Another similarly ambitious programme is addressed to "TENERIFFE AND ITS LAND". The aim is to revitalise the rural landscape and all its resources through a concerted effort to protect valuable traditional features, while supporting all innovative initiatives fostering development together with sound environmental management.

Both programmes stress the urgent need to diversify resource use while optimizing the comparative advantages offered by the island. The island's habitat was also the subject of a recent initiative. The international competition implemented with IUA (International Union of Architects) aiming at the design of a village of 25 bioclimatic dwellings for the island of Teneriffe; A welcome initiative indeed which will certainly influence further thought about Eco-Architecture on islands (C. Marin, editor, 1996).

16. NETWORKING AND NETWORKS

The interested observer might be surprised by the unprecedented tendency of islanders to work together towards common ends through all sorts of networking mechanisms, hence justifying an optimistic view of their future.

Aosis, the alliance of small island states, and its role at the Barbados conference, is a well-known example.

Many others cooperate at different geographical or institutional levels, pursuing specific or more general goals. An interesting and promising movement indeed, deserving of international attention and support.

Local authorities and NGOs are often at the origin of such networks, bringing together people and islands from different countries. The Baltic Islands Union is a case in point. Islands from five Baltic countries, including Estonia, cooperate towards sustainable development goals.

Other networks operate at the European scale with the support of the European Union such as ISLENET, concerned with the development of renewable energy use and other environmental issues. The Island Commission of the CRPM operates in its turn as a political lobby for the European island regions at the European Parliament and Commission.

Finally, our organisation, INSULA-International Scientific Council for Island Development, affiliated with UNESCO and the UN, is an international NGO operating worldwide through its regional offices and a large institutional and individual membership basis.

INSULA's specific aim is to aid islanders of all regions to share their experiences, to better know each other and to find together ways for joining in common projects for a sustainable future. To do so, INSULA publishes its International Journal of Island Affairs with selected contributions from all over the world on topics of common interest such as tourism, water and waste management, protected areas and other relevant issues.

Several international conferences were organized by INSULA in cooperation with UNESCO, UNEP and other relevant international organizations; "Islands 2000" held in Sicily in May 1992, "Island Matters, Island's Matters", held in Okinawa in June 1994 or the "World Conference on Sustainable Tourism" held in Lanzarote, Canary Islands in April 1995.

The recent TELE-INSULA Project supported by the European Union is based on the provision of telematic services applications to a selected group of European islands, from the North Sea to the eastern Atlantic islands , from the Central Mediterranean to the Greek Archipelagos.

Led by an important group of European partners such as Telecom-Italy, the project coordinated by INSULA is committed to provide and test, together with the islanders, a set of much needed services based on telematics with the aim of enhancing the efforts of these small communities to overcome their "insular" constraints.

Distance learning and training, tele-medicine, easy access to public services, improvement of tourism services, access via electronic media to a worldwide information system and exchange of experiences are among the objectives pursued by the TELE-INSULA Project.

No doubt the experience and know-how contributed by the partners will provide the project with a synergic effect capable of generating unexpected innovations.

17. THE "FIRST EUROPEAN CONFERENCE ON ISLAND SUSTAINABLE DEVELOPMENT"

This conference, to be organized by INSULA in Minorca (Balearic Islands) in March 1997 aims at providing a practical framework for technical , economic and cultural cooperation among European islands.

Island authorities, Chambers of Commerce and Industry, the European Communities, the international organizations and other interested parties will be the partners of a debate focussing on four themes considered as priority issues for the islands forthcoming decades.

The FIRST THEME concerns island societies and technological advances. Telematics, renewable energies, water and waste issues will be discussed together with a sound evaluation of their cost-benefit ratio for all sectors of island societies.

The SECOND THEME is dedicated to the planning and management of natural resources. The contribution of UNESCO's Biosphere Reserves' concept and its applications to island communities and sustainable development will be discussed.

The THIRD THEME is addressed to cultural heritage, its protection and enhancement, including its participation in sustainable tourism practices.

The FOURTH THEME focuses on island economies and sustainable development. All aspects of innovation, diversification and competitivity of small and medium business will be addressed, together with the advantages of inter-island organization and cooperation systems.

A comprehensive process of concertation has been started since early 1996 with INSULA's partners in Europe and European overseas islands, in order to achieve strong consensus and agreement to the conference's aims which include the approval of a set of propositions called "the Minorca Commitments" (Annex 1) as a sound basis for cooperation towards island sustainable development.

18. CONCLUSION: THE ISLAND WORLD IS CHANGING

The examples shown indicate that something is changing deeply in the islanders' perception about their future. A strong movement of ideas, serious reflexion and actions are taking place within island communities, bringing together, perhaps in an uncoordinated and unexpressed way, considerations on island identity, environmental and cultural values, and other intangible elements all converging towards the need to give shape to new development configurations, different from those adopted in the past and possibly closer to the present social aspirations of the islanders themselves.

It is too early to conclude from ongoing trends that we are on the way towards effective sustainability. The doors to such a perspective are open, meaning we can view the future with optimism.

ANNEX 1

1st Draft

The Minorca Commitments

Inspired by the declaration issued at the UN Summit for Social Development , held in March 1995 in Copenhagen, by the report of the UN Global Conference on Sustainable Development of Small Island Developing States , held in May 1994 in Barbados, and by the White Book of the European Union.

Having consulted each other on the occasion of the "Eco-Islands" international conference, held in Fuerteventura, Canary islands, in March 1996 and at the international human ecology conference on "Northern Shores and Islands: Human Well-being and Environmental Change", held in Stromstadt, Sweden, in August 1996, we individually and, as representatives of public and private European island institutions, gathered here in Minorca, express the following considerations:

1. We recognize the significance of socio-economic development and human well-being for the people of our islands and shall give to these goals the highest priority from now into the twenty-first century.

2. We acknowledge that our societies are compelled to respond more effectively to the challenges presented by a fast changing world and to the material and spiritual needs of individuals, their families and the communities in which they live throughout our various countries and regions.

3. We are deeply convinced that economic development, social and cultural progress and environmental protection are interdependent and mutually reinforcing components of sustainable development and social justice.

4. We acknowledge that people are at the centre of our concern for sustainable development and that they are entitled to a healthy and productive life in harmony with their traditions, identities and their environment.

5. We are convinced that as peripherical and isolated entities sustainable progress will perhaps remain long out of our reach, and that only by joining hands and working together, exchanging our experiences and hopes, shall we overcome the obstacles which still condition our islands' present.

6. We gather here in Minorca in full awareness of the difficult tasks that lie ahead but with the full conviction that through our common will and determination, major progress for our islands can and will be achieved.

7. We commit ourselves to the above considerations and to engage actions for enhancing equitable sustainable development and ensuring human well-being for our communities. We invite all people in all islands and in all walks of life, as well as the international community to join us in our endeavour based on peace, mutual responsibility, cooperation and respect for the ethical values and cultural backgrounds of all.

To this end, we shall create a framework enabling us to engage actions that we consider as priorities and commit ourselves to:

Commitment 1

a) Provide a stable framework in accordance with our institutions, laws and procedures, to promote and strengthen inter-island and international cooperation both for progress and peace.
INSULA with UNESCO may be instrumental for providing an initial international secretariat to the networking framework, which may evolve towards a more formal union among European islands.

b) At the local level, provide each island or island group with an identified focal point equipped with available low-cost telematics technologies in order to implement the envisaged networking and cooperation strategies. The focal point shall also play the role of a forum within every island to enable the participation of all public and private actors in discussing and sharing ideas and envisage present issues and future options for the common benefit.

Commitment 2

a) Focus our efforts and policies to address the endemic problems of island life. These efforts should include the provision of education, employment and livelihood, primary health care services, including reproductive health care, safe drinking water and sanitation, adequate shelter and participation in social and cultural life. A special priority shall be given to the needs of elderly, women and children who often bear the greatest burden of islandness and, to the needs of vulnerable and disabled persons.

b) Ensure that people living on islands have easier access to productive resources, including credit, land, education and training, technology knowledge and information, as well as to public services such as in- and off-island transports and participate in decision-making that would enable them to benefit from expanding social and economic opportunities.

c) Ensure that national and local government budgets and policies are oriented, as necessary, to meeting islanders' basic needs, reducing inequalities and targeting sustainable development as a strategic objective.

d) At the international level, we shall strive to cooperate with and assist islands and island regions of the European area, especially in Eastern Europe and Southern Mediterranean, which are still at a developing stage. To this end, we shall encourage the European Communities and other relevant international agencies to support measures for the achievement, in a sustainable manner, of equal opportunities for the progress of these islands and the satisfaction of basic needs for their people.

Commitment 3

a) Develop, promote, and support policies to expand work opportunities and productivity in islands' rural and urban sectors by investing in human resources development, promoting technologies offering innovative options to self-employment and entrepreneurship within small and medium businesses. Improve access to credit, information and other productive resources and infrastructures taking due account of the informal sector.

b) Improve the diversification of activities in all sectors, particularly in sensitive areas such as tourism, which should be based on wise management of islands' natural and cultural resources, avoiding dangerous specializations, as recommended in the Charter for Sustainable Tourism adopted at the Lanzarote international Conference in April 1995.

c) Promote and adopt measures reducing pollution risks and external dependency on fossil fuel supply, improving all existing potential sources of renewable energy, wind and waves, solar, geothermal and other sources.

d) At the international level, share information on successful experiences and promote joint R&D projects among islands in order to optimize results as well as appropriate scale-economies.

e) Take advantage of all potential synergies to promote inter-island joint ventures in all productive sectors and services including tourism and transports.

Commitment 4

a) The quality of the natural environment depends on the people's attitude towards it. We shall therefore promote and diffuse within all members of our island societies a better knowledge and understanding of the specific features presented by their natural heritage. To this end, comprehensive curricula should be adopted at all levels in our schools, for we believe that youngsters are the foremost vehicle to foster a nature-friendly culture among all.

b) Share and diffuse successful educational and awareness experiences including effective pedagogical tools and curricula.

c) Promote regulations for the protection and optimal use of natural resources together with technical and administrative measures to reduce the environmental impact of human activity, including liquid and solid waste disposal and possible re-use for productive purposes.

d) At the international level, promote the principles and management practices of UNESCO's Biosphere Reserves on islands, already adopted successfully on the islands of Minorca and Lanzarote.

Commitment 5

a) Promote and protect the full and equal enjoyment of the cultural heritage of our islands in all its tangible and intangible aspects.

b) Diffuse, inside and outside islands, the original features of our heritage by organising cultural programmes and other appropriate infra-structural devices and services in favour of culture-sensitive tourism, of the largest possible participation of all in artistic and cultural activities and production and of the knowledge and enhancement of the historical and archeological heritage at the roots of their identity.

c) Increase, through appropriate training and education, the professional level of local media producers , who are at the origin of the information provided both to islanders and potential visitors.

d) Encourage the discovery by islanders of other islands to get to know each other and to appreciate the similarities and differences of their common island world by offering discounts and other organisational facilities to favour their travelling.

POLICY ISSUES

by

Professor Harry Coccossis

EXECUTIVE SUMMARY

- Coastal areas are priority areas in the Mediterranean due to:
  - their ecological, economic and social importance;
  - the conflicts of use and intensive pressures for development they face.
- Mediterranean coastal areas need policy action.
- The particular characteristics of Mediterranean coastal areas derive from their:
  - Natural ecosystems structure and dynamics: types, diversity, etc.
  - Human ecosystems structure and dynamics: demography, economy, culture, etc.
  - Interaction of natural and human ecosystems.

Four major categories of impacts can be identified:

- On the *structure and function of natural ecosystems*.
- On the *quality and quantity of natural resources*.
- On the *use of the territory.*
- On the *natural and man-made landscape*.

- There is a wide diversity of types of Mediterranean coastal areas as a result of differences in the natural and human ecosystems and their interaction. A basic typology would include:
  - Coastal areas densely urbanized in dynamic stability or even decline.
  - Coastal areas undergoing rapid development and urbanization.
  - Coastal areas with rural development in relatively natural state.
  - Islands.
- The management of the problems of Mediterranean coastal areas should be rational combining short term needs with long term perspectives and aspirations.
- An integrated approach is more efficient than a fragmented one.
- Integrated Coastal Area Management is an ideal approach to ensure multisectoral coordination and integration of tools.
- Mediterranean countries often lack the necessary institutional, financial and technological framework to pursue Integrated Coastal Area Management.

- In spite of such constraints a lot of efforts are increasingly addressed to the problems of coastal areas. Some of them are partial or sectoral or small area oriented while others are comprehensive and integrated.

- A large diversity of tools exists for the management of Mediterranean coastal areas. They include regulatory, economic and physical interventions. Some are geographic area based and some are non-spatial in character or procedural. They can deal with small issues like beach cleaning or erosion protection to wetland conservation or tourism planning.

- Development in the Mediterranean is increasingly dependent on environmental quality as it relies heavily on the use of local natural and cultural resources. The future of the Mediterranean depends to a great extent on the future of environment/development interaction. A long term strategy is necessary as a guide for action at all spatial levels.

- Such a strategy should be in conformance with the goals of sustainability combining economic efficiency with social equity and environmental conservation and allowing for intergenerational equity.

- Characteristics of a strategy for sustainable development of Mediterranean coastal areas:

  - Multi-dimensional and long-term oriented.

  - Targeted to *critical* factors (pressures, resources) and issues.

  - Based on the conservation of resources and basic ecosystem functions as a basis for social and economic development. This calls for:

    - protection of critical areas;
    - multiple use of resources;
    - multiple use of coastal space;
    - management of areas for nature conservation and/or future use.

  - Mobilizing a number of basic actors in the spirit of “shared responsibility” through sensitization to issues and participation in the management of coastal areas.

- A more comprehensive approach could be instituted to manage in an integrated way the Mediterranean coasts. This could include:

  - Identifying a *critical* zone for strict management.
  - Linking the management of the critical zone to policy making, planning and programming of a wider area of influence.

- Implementation of policies is essential, through better coordination and streamlining of operations and lines of responsibility.

- Monitoring and evaluation is a vital part of a process of periodic review and adjustment of policies.

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I. MEDITERRANEAN COASTAL AREAS: PROBLEMS AND OPPORTUNITIES

I.1 Introduction

The Mediterranean Sea lies between Europe, Asia and Africa and without the Black Sea covers about 2,5 million sq.km , with an average depth of about 1,5 km .

The maximum length of the Mediterranean Sea from Gibraltar to Syria is about 3,800 km and the maximum distance in the north -south direction from France to Algeria about 900 km.

Natural environment and in particular socio economic conditions vary significantly among Mediterranean countries. Even though, they confront common environmental problems, calling for the development and adoption of a common strategy towards sustainable development of the basin**.**

I.2 Coastal Environment

General characteristics: the Mediterranean is a transitional area climatically, with a temperate, damp climate in the north and an extreme arid climate in the south, temperature increases from north to south and from west to east. Rainfall throughout the region is seasonal, with a marked minimum in summer.

The Mediterranean basin is rather fragile regarding pollution, since the estimated turnover time for Mediterranean waters is 80 years.

The Mediterranean Sea has a deficient hydrological balance, with loss through evaporation.

The biological productivity of the Mediterranean Sea is known to be among the lowest in the world. However, fishing activities in the Mediterranean Sea have been going on for centuries, adapting themselves to the local conditions in such a way that a very high ratio of catch/primary production exists.

Mediterranean waters are oligotrophic except perhaps in the neighbourhood of large rivers, where eutrophication is more acute in summer.

Coastal Types: besides geological and geomorphologic variety, coastal Mediterranean areas vary greatly as well. One may identify the following types of coastal areas:

- *Rocky coasts*, accounting for 45% of the total coastal area -46,000 km- including most of the well-known tourist resorts -Nice, Riviera, Cote d'Azur, San Remo, Roussillon, etc.

- *Sandy beaches*, accounting for something less than 40% of the total coastline.

- *Deltas* - The most extensive deltas are those of the Rhone, Po, Nile, and Evros. They are areas which are not frequently visited by tourists, usually due to natural constraints for tourism and infrastructure development and, in certain cases, due to severe pollution problems.

Fauna/flora: the Mediterranean due to its unique climatic and geomorphological characteristics has a great variety of both fauna and flora. 25,000 flora species can be found throughout the whole basin.

According to a recent survey carried out by the Porquerolles Botanical Conservatory on the French Mediterranean region, at least 526 taxons (species, subspecies, and varieties) are threatened to varying degrees. Among them:

- 83 have regressed slightly;
- 298 are at serious risk;
- 137 are on the verge of extinction;
- 8 have irrevocably disappeared;

The characteristic climate, the relief, and the soil make the Mediterranean basin one of the most original biogeographic regions in the world. Wild life and plant life have distinct features. Mediterranean plant life, with a wealth of some 25.000 species, is all the more remarkable since more than half of these are endemic. A number of plant associations are relicts. Endemic plant species are all very sensitive to degradation.

Primary vegetation virtually everywhere has been replaced by regressive formations and secondary landscapes. The ecosystems of the region are particularly threatened. A number of animal species have suffered from this development to the point of extinction or are in a critical situation. Excessive hunting has greatly contributed to the disappearance of bird life throughout the Mediterranean region.

Alterations have been provoked due to the introduction of several exotic species.

The Mediterranean marine fauna is strongly varied from the point of view of species but it is not very plentiful.

In the sea, human pressures threaten some species. The Mediterranean, and particularly its straits and narrow passages between the northern and southern shores, are a major migration route for land-bird life between Europe and Africa (Gibraltar, Sardinia, Straits of Sicily, Crete, Cyprus, the Dardanelles).

Forests: forests cover 31 million ha, accounting for the 9.4% of the total land. Mediterranean forest is especially typified by evergreen trees such as the holm-oak (Quercus ilex) and cork-oak (Quercus suber). Towards temperate environments (in latitude, altitude, and inland location) deciduous trees mix with the holm-oak. Towards low latitudes, green oak is replaced by trees more resistant to drought and to cold at altitude (conifers, including three species of cedar). Along with this sclerophyllous forest, we find large pine-covered areas (Pinus halepensis or Pinus nigra), and degraded forests, classified as scrub forests (maquis, garrigue, matorral) which occupy the major part of the forested surface of the basin, notably in Spain, Turkey, ex-Yugoslavia, Albania and France.

Islands: islands constitute one of the most important tourist resorts throughout the whole region. Several of them are equipped with appropriate communication and transportation networks which in addition to the high quality of tourism services provided, help attract millions of tourists every year.

Islands cover a total land area of 100,000 sq. km. Islands have been inhabited for more than two centuries, their population not exceeding 10 million.

Most of the island economies are based on tourism. Economic profits, basically from tourism development, are not equally distributed among all islands. Large islands, usually in the vicinity of the coast, draw the most benefits, while smaller islands, which constitute the majority, do not prosper, due to isolation. It should be noted though that during the last decade, small destinations experienced a tremendous increase of tourist arrivals, since their unspoiled natural environment and a friendly local environment have become main attractions. Still, the tourist period is limited and a lot of things should be done so as to succeed in encouraging tourism development, overcoming isolation while achieving preservation of their fragile environment. Special coastal management strategies ought to be developed in the case of small islands.

The largest islands are Sicily -25462 sq. km- and Sardinia -23.813 sq. Km- which are also the most densely populated (more than 5 million for Sicily and 1.6 million for the second in 1990). Several other islands with a total land area reaching up to 1000 sq. km are: Cyprus (9251 sq. Km), Corse (8680 sq. km), Crete (8259 sq. km), Evia (3655 sq. km), Majorca (3618 sq.km), Lesvos (1630 sq. km), Rhodes (1401 sq. km). Other islands which constitute significant tourism destinations, but which are considerably smaller are: Chios, Corfou, Ibiza, Djerba, Malta, Gozo.

Another issue to be mentioned is seasonal migration of island populations, particularly those of small islands.

As mentioned previously, tourism presents the major economic activity in most cases, while it appears as the only prospect for others. The number of tourists/visitors in 1960 were 2 million, while during the last few years exceeding 12 million, increase of 600% within a period of three decades. This indicates a tremendous increase, leading to enormous pressure on both social and ecological systems.

Radical structural modifications of most of the island economies should not be expected, since in many cases tourism represents the most important, in some cases basically the only activity. Malta, Cyprus, Corse, Rhodes and Ibiza are among those islands where employment in the tourism sector accounts for 20% of total employment.

Unfortunately, in several cases tourism development followed a rather rapid pace, leading to an irrational utilization of resources. Urbanization is probably one of the most important problems, in relation with noise, congestion, traffic, pollution, aesthetic deterioration, expansion of traditional settlements, etc.

I.3 Coastal Population

During the past decades the coastal population throughout all Mediterranean countries has experienced tremendous increase. In Greece, for example, two out of the three largest urban centres are located along the coast and 60% of total population lives on the coast. The French coast has a population growth rate about 3 times the Community average. In particular the strip from Languedoc-Roussillon to Andalucia reveals the highest growth rates. Prospects indicate an average growth rate of 50% in the next ten years.

In conclusion, of the 350 million people of the 18 riparian countries surrounding the Mediterranean, 130 million live on the coast (Amber 1994).

Unfortunately, migration, in several cases, is responsible for several structural modifications of societies. It is common that young people search for economic opportunities in the coastal cities, since low-skill jobs, basically related with tourism, are provided, usually leaving behind more elderly people. This gradual abandonment of rural areas is expected to cause severe problems, several of which are environmental, unless certain policies are adopted.

Trends indicate that migration towards coastal areas will continue both in the short run and the long term. Contrary to traditional practice, where people located inland, people now prefer to live and work near the coast. Economic opportunities, facilities for recreation and tourism, mild climate motivate this kind of migration.

The population of the whole Mediterranean region is expected to follow significant growth rates -from 356 million in 1985 to 520-570 million in 2025- while the coastal population is expected to increase from 133 million in 1985 to 195-217 million in 2025.

It should be noted that the population increase will not be equally distributed among all Mediterranean countries. North Mediterranean countries, members of the European Community, will experience a population decline, while the northern and eastern countries are expected to confront rather important population growth, which will overcome previous declines.

Besides population increase, trends indicate an increase in urban concentrations. It is estimated that 75-80% of future population will live in urban areas.

Besides urbanization, another growing phenomenon is the ”littoralization” of the coast, which is expected to further intensify.

I.4 Economic Activities

Primary sector

Agriculture

Agriculture represents a major economic activity in most countries, currently under severe threat due to urban and tourism development. A large part of agriculture in the Mediterranean countries has been modernized and intensified since 1970. There are few alluvial plains (Rhone, Po, Nile), while most agriculture areas are subdivided.

In the Mediterranean countries, the area of land under annual or perennial crops is always less than 50 per cent of the total surface area, and even less than 10 per cent in some cases (Algeria, Libya, Egypt, comprising mostly desert). Several hundred million hectares are devoted to range and grazing land - extensive stock- farming areas, poorly suited for increases in productivity although this does not exclude improvements in management.

Fishing

Mediterranean fishery resources are used unevenly.

Measures must be taken to preserve stocks, particularly through fishery supervision, and protection of their reproduction and growth zones.

It should nevertheless be recognized that the resources of the Mediterranean Sea will never be sufficient to meet the ever-increasing demand stemming from both the considerable population growth anticipated, especially on the southern shores, and tourist pressure. Fishery policy should therefore aim at the use of limited fishery resources under optimal biological and economic conditions.

Aquaculture

During the last decades several Mediterranean countries have concentrated their efforts in the development of aquaculture. Natural characteristics will probably encourage further increases, since one million ha of coastal areas could be devoted to this activity, while many brackish lagoons are very productive and climatic conditions are favourable.

Secondary Sector

Industry

Industrial development is unevenly distributed between north and south Mediterranean region. The share of traditional industries, agro-food and textiles, is declining in the north, but is growing in the south and east.

The northern countries (including Turkey) still account for the majority of the construction sector.

Similar analyses of the refining and petrochemical industries (ethylene, propylene, and benzene) show similar concentrations in the countries in the north, although sometimes less pronounced.

The same pattern recurs with other products, such as polyethylene, vinyl chloride, and polystyrene, perhaps with more attenuated contrasts between north and south.

Other activities

- Iron works;
- Ports and port complexes;
- Traffic corridors;
- Power plants.

Tourism : tourism for several Mediterranean countries is synonymous with the future itself. The level and the quality of tourism development varies from country to country. In addition, the benefits -both economic and social- for local people vary from country to country as well, depending on the economic and social characteristics of the country itself.

In any case, even if the present is not that promising for some countries, the future appears more encouraging, for most of the countries, therefore accelerating investments for tourism development as well as required infrastructure.

In the mid 80s the number of international tourists in Mediterranean coastal areas reached 117 million, up from 58 million (in 1970). Greece an Portugal were among the countries with the highest growth rates.

In 1990 it was estimated that 82 million international tourists and 85 million national tourists, that is, a total of 167 million, visited coastal regions throughout Mediterranean.

Predictions by the Blue Plan indicate that tourist arrivals in Mediterranean are expected to increase to 140-180 million in 2000.

As mentioned previously, tourism growth is not equally distributed among countries. 80% of international tourism is accounted for by France, Spain, Italy and Greece. So far tourism is concentrated in the already densely populated coast. In Spain 82% of all tourists/visitors have as their final destination the Spanish coast. In Greece 90% of all tourist investments are channelled into coastal areas.

Tourism infrastructure is concentrated basically along the coast. In France 20% of hotel accommodations are located in three regions: Languedoc-Roussillon, Provence-Alpes-Cote Azur and Corse, accounting for more than 100,000 beds. 30% of national tourism and 20% of international is concentrated in the Mediterranean part of the country.

In Spain and in Italy about 70% of both international and national tourists visit coastal areas. The share of coastal tourism varies from 100% for Malta and Cyprus, to 95% for Greece and Tunisia. In Turkey the corresponding share was 60% for international tourism and 40% for national, while for Morocco it was 15% and 30% respectively. In Syria the contribution of international tourism is up to 40%, a significant number of foreign visitors often spending some time in the coast. In Egypt this number does not exceed 30%, usually the majority accommodated along the axis passing from Cairo up to Haute Egypt. Tourism development in Albania and Algeria is still in its infancy but prospects for the coastal areas are particularly promising.

Alternative types of tourism have been developed during the last few years providing a variety of products (i.e. health tourism, congress tourism, ecotourism, cultural tourism, etc.). Unfortunately tourism development is of seasonal character, the peak of the period usually in the summer. This over concentration leads to increased pressure on human, environmental and organizational resources. Environmental degradation and social problems are usually some of the reasons for the dissatisfaction of visitors, leading, in certain cases, to the decline of the resort itself.

The future challenge for several countries would be the regeneration of some of these saturated resorts in order to satisfy new demands.

I.5 Environmental impacts

Coastal areas are extremely valuable as they concentrate on a rich diversity of natural habitat areas and a large variety of natural resources. Estuaries, beaches, dunes, wetlands, islands, cliffs and rocky shores can be found along the coast, which is also a refuge for wildlife. As the interface between terrestrial and marine ecosystems, coastal areas are extremely

important and fragile from an ecological perspective. Besides scenic beauty, coastal areas are a defence mechanism against future sea level rises.

At the same time, coastal areas provide opportunities for development of a wide range of human activities, either exploiting coastal resources (i.e. fishing) or taking advantage of favourable locations (i.e. mild climate, break of bulk transport and access to sea routes, etc.). Coasts also represent a unique place for recreation and tourism, and the only resource upon which several countries will rely on for their future development. As a result, a number of people live and concentrate in coastal areas.

This concentration of population and activities presents considerable threats to coastal ecosystems and resources. It is thus important that it is carefully managed. Four major categories of impacts can be identified:

- On the *structure and function of natural ecosystems* as a result of the construction and operation of facilities for human activities and the associated development, either directly (through loss of vital habitat areas or pollution) or indirectly (for example through noise or the presence of people).

- On the *quality and quantity of natural resources* (forests, soil, water, etc.) as a result of increasing concentration of people and activities adding to the demand for their use and exploitation and disposal of waste.

- On the *use of the territory*, the spatial organization and function of the area as a consequence of the development of human activities and associated facilities, infrastructure and urban development.

- On the *natural and man-made landscape* as a result of the size and scale of facilities and associated development . The landscape is often a major source of tourist attraction to a site.

In particular in the Mediterranean, coastal areas are facing the following problems:

Habitat loss: it constitutes one of the most severe problems. It has been estimated that France has lost 155 natural coastal areas since 1976 and continuous to lose 15 every year. Italy had 700.000 ha of coastal marsh at the end of the last century, 192,000 ha in 1972 and in 1990 100.000. During the last 50 years Mediterranean as a whole has lost one million hectares of wetlands.

Dune loss is one of the most crucial problems. In several cases dunes have been completely destroyed. It is estimated that 75% of the dunes of the southern member countries have been lost since 1960.

Forests: 5% of the Mediterranean region is still covered by forest, but this percentage is constantly decreasing. 200.000 ha of forest are burned every year, leading to a rapid deterioration of the environment.

The problems which affect Mediterranean forests today are on one hand due to direct human action such as destruction by massive logging, over exploitation for firewood, or over-use for grazing herds, and, on the other hand, those deriving from environmental attacks such as the effects of acid rain, fluorides and other chemicals.

Fire is also an important problem, due both to the hot climate and human action. In the latter case this may be deliberate or accidental, and its incidence increases in forests near tourist and recreational areas.

As a consequence of these impacts there is also a reduction of all benefits deriving from forests As forests have an influence in regulating water and maintaining the soil in place their decline causes an increase of flooding, erosion, desertification, siltation of dams, etc. Forests also conserve genetic resources; play an important part in stock raising, by serving as grazing areas; and supply raw material for various types of uses (paper-pulp, building materials, tanning chemicals, wood for burning as domestic fuel, etc.).

As a solution to the decrease in forested areas, reforestation is being carried out in some areas, particularly in the Northern part of the Mediterranean region, and often in areas abandoned by agriculture. However this is an expensive measure, and it is more advisable to adopt a preventive, rather than remedial approach, through proper planning and management. Also reforestation is often limited to quick-growing trees, thus not appropriate for many important wood applications; and, if the choice is made on long-lived hardwood stands, then it is necessary to wait from twenty to fifty years before obtaining useful yield, which makes this choice costly and time consuming.

It is thus important to associate rehabilitation policies, a rational system management for natural forest land, to combat fires and diseases. Policy for replanting, improving forestry management conditions, integrating trees in urban and tourist developments, and setting up areas of safeguard for ecosystems is also necessary.

Water: demand over water has rapidly increased during the last decades. Annual per capita, pollution problems, salinisation, overconsumption are among some of the problems decision makers have to deal with in the near future.

Sea Pollution: the main reasons for increased levels of pollution in certain cases is industrial activity, marine shipping and, in several cases, inadequately treated waste water.

In 1988 a survey of 150 beaches in three member states found that at 25% of the sites pathogen counts exceeded recommended safe levels. Waste volumes are expected to increase from 0.4 billion cubic metres to 1.5 billion by 2025.

Erosion: more than 5200 km (30%) of the EC's beaches are estimated to be eroding.

Sea level rise: sea level rise presents today probably the most severe threat for several countries. Millions of ECU are being set aside for coastal protection and sea defences. Conventional engineering approaches and soft engineering methods such as management treatment have been used in order to anticipate future changes.

In turn, environmental deterioration can have a significant impact on the development prospects of coastal areas.

Conflicts on the use of coastal resources, threats to natural habitat areas, pollution and resource degradation seriously affect the potential of coastal areas for the support of human activities. The long-term future of coastal areas depends on a rational management of coastal resources within the framework of ecologically sustainable economic development.

In the future, coastal areas are likely to face increasing pressures, particularly on habitats, natural resources (land, water and energy) and infrastructures (transport and waste water treatment facilities). Fishing, agriculture, industry, tourism, transport and urbanization are major forces of change.

Among the activities of the primary sector **fishing** is certainly the one that is tied to coastal locations. Although coastal (nearshore) fishing is gradually declining in relative importance in terms of the European and world economy, it has still significant impacts on coastal marine resources mainly due to overfishing or following certain practices, in most cases illegal (small size nets, dynamite use, etc.). Another aspect of the fishing sector with potential negative impacts on the environment is **aquaculture**, which could compete for the use of sea space with other uses, mainly recreation, but also with traditional fishing activities, industry, etc. The impacts from aquaculture installations are not restricted to the use of sea space, but also include possible pollution from excessive use of fishfood, a problem which can be particularly important in enclosed bays, estuaries, etc.

The role of **agriculture** in changing coastal environments is indirect and primarily affects the dynamic and wider zones. Changes in agricultural practices (modernization and crop restructuring) affect the management of rural areas with possible impacts on:

- The extent and intensity of the use of land space (abandonment, conflicts with other uses or even over utilization) affecting mostly open space and natural areas.

- The use of coastal resources i.e. freshwater and soil (abandonment, depletion or degradation) or pollution from excessive use of fertilizers and pesticides.

- The marine environment as a result of agricultural runoff.

The impacts of **industry** on coastal areas can be direct or indirect. Direct impacts refer to pollution problems at the site level through effluents (in most cases), underground water resources, and the marine environment. Indirect impacts relate to the attraction or “repulsion” of the location of industries (mostly large-scale plants) to other industries (economies of agglomeration), or activities (economies of urbanization) ultimately leading to concentration and urban development on the coast. Agro-industries, refineries, thermal power plants, metallurgical and chemical complexes on the shore or nearby upriver sites are potential threats affecting seawater quality. Land-use conflicts might also arise in such a context.

The various facilities for sea **transport** (fishing, commercial, industrial ports or some special purpose terminals) requiring coastal locations can also affect the marine environment through pollution or as a result of the coastal engineering works required. Coastal habitats can be severely affected due to loss of vital space and changes in coastal processes (water flow, sediment transport, etc.)

Coastal **tourism** is strongly seasonal and becomes increasingly more intensive. This results in reduction of natural sites and open space, substantial alterations of coastal landscapes and conflicts on the use of land, water and other resources. These adverse effects are further exacerbated by the associated indirect effects of tourism, related urban development for trade, transport facilities, vacation houses, infrastructure, residences for those working in the tourism sector, etc. Recreation and leisure activities can also have adverse impacts on coastal

ecosystems due to physical effects (i.e. trampling effects on sand dune vegetation) or disturbances (noise, etc.) from human presence. Pressures on the coastal zones are likely to increase in the future. It is estimated, for example, that coastal tourism related development in the Mediterranean could double in twenty years . The largest share of such growth is expected within the territory of the European Union member states, already established as major destination areas.

The impacts of **urban development** on coastal resources include:

- *loss of natural habitat areas* due to reduction of vital space or pollution and waste disposal;
- *decline in biodiversity* of species, ecosystems and inter-species variation as a result of losses in habitat areas;
- *coastal erosion or accumulation* as a result of marine engineering works to provide additional land for new facilities or protection of existing installations and facilities;
- loss of forest land to urban expansion and related hazards (forest fires);
- *decline in the quantity and quality of drinking water resources* and sea *pollution* as a result of waste disposal.

I.6 Coastal Zone(s)

The definition and spatial delimitation of coastal areas depends on physical geographical factors (geomorphology, hydrology, etc.), ecological factors (terrestrial and marine ecosystems), human activities and uses of land (type and intensity of development) as well as on institutional factors (administrative and legal framework regulating development and use of space).

From a management perspective, depending on the physical, ecological, human activity and development characteristics there are several spatial dimensions which can be identified in coastal areas:

- a *critical zone* or a narrow band of land and sea a few hundred metres wide, adjacent to the shoreline, usually of the highest ecological value and subject to intense pressures for development;
- a *dynamic zone* which may extend inland and seaward, usually a few kilometres wide, where there is strong dependence and/or influence of human activities and natural processes on coastal features and resources;
- a *wider zone of influence,* often several kilometres wide which partly influences, directly or indirectly, the other two zones.

I.7 Coastal Management

Coastal areas are characterized by complex patterns of interaction between natural and human ecosystems. Therefore, their problems are extremely complex to manage. An integrated approach is necessary whereby environmental management is incorporated in socio-economic and physical development planning. Such a task imposes strong coordinating mechanisms to ensure a balance between environmental conservation, economic efficiency and social equity in the framework of sustainable development.

There are several “actors” who influence or have an interest in coastal areas with a multitude of goals and perspectives on their use and protection. In addition, administrative boundaries often transcend natural areas and functional regions. As a result there are considerable conflicts, overlaps and gaps in managing coasts. In spite of developed planning and management systems, where -and if- they exist, there is a need for special attention and better coordination to manage coastal areas. Quite often the basic mechanisms exist but what is lacking is a coordinating policy which:

- Links environmental protection to development policy;
- Seeks intersectoral coordination;
- Seeks coordination among the various spatial levels (local, regional, etc.).

Furthermore, the multitude of interests for the use of coastal resources imposes the need to mobilize all those concerned through a participatory process of policy making. In most cases the initiative of coastal management rests with regional or national authorities, due to the coordinating role which they usually assume. However, coordination should be also sought at international level. The basic reasons which justify the need for such an option are:

- There are problems in coastal areas which transcend national boundaries (i.e. pollution, fish stock depletion, natural habitat areas, etc.).

- There are problems of common interest, and benefits could be drawn from communicating about them.

II. POLICY FRAMEWORK

II.1 Sustainable Development for Coastal Areas

The strong priority given by modern societies to environmental protection issues in the last 30 years or so, has led to a reconsideration of general societal priorities, particularly as they relate to social and economic development. A new term has been employed to differentiate the present from past attitudes: sustainability, which gained wide recognition and support following the 1992 World Conference on Environment and Development at Rio de Janeiro.

Sustainability as a term had been in use much earlier, particularly in the context of resource management, mostly in terms of the economic use of a given resource in a given way, i.e. forest, agricultural land, etc.

The major difference with the past has been the emphasis put on environmental conservation, which is on an equal footing with social equity and economic efficiency. In such a framework, the environment is not just a “container” to support human activities, but a vital factor -a prerequisite- for sustaining human activity.

Since environment was considered a prerequisite for the development of human activities, environmental quality became a central issue. As a consequence of the new perspective, the definition of environmental quality was broadened and extended towards the concept of quality of life in general. Their boundaries have become increasingly more diffuse.

Sustainability is conceived as a process and a state or condition, in many respects static -implying a sense of dynamic equilibrium- in which economic development is pursued without significantly affecting environmental resources and ecosystems. In this context significance refers to irreversible loss of resources, or of the capacity of natural ecosystems to function in a way that future generations may also benefit from them.

The operational aspects of sustainability have been questioned seriously. In spite of this, the concept has achieved broad political support.

Following the Rio Conference there has been a proliferation of international, national and local activities on the issues of sustainability, particularly as they are elaborated in Agenda 21, a set of priorities for action set forth at the Conference.

On the basis of the definition of sustainability, its interpretation for coastal areas can be defined as the state and process of achieving such a state in which economic and social development is ensured without compromising environmental resources and ecosystems. In the context there are various interpretations of sustainable development in coastal areas:

- environmental terms:

  Placing emphasis on the use (inputs, flows and outputs) of natural resources (energy, water) and waste management.

  Placing emphasis on environmental quality in general, including social and economic aspects.

- economic terms stressing the viability of economic activity as a support for the quality of life in coastal areas. Two types of considerations fall in this category:

  A broad “economy ” perspective with emphasis on issues as the “balance” or mix of economic activities, etc., or,

  A narrower “comparative advantage” or economic base perspective, with emphasis on key sectors, such as tourism for example.

- social terms as:

  A broader social equity concept, including the right to employment, and accessibility of various social groups to decision-making as conditions for democratic progress or

  A narrow “pragmatic” approach, stressing the availability of opportunities and access to amenities, services and facilities (open space, water, etc.,) or

A softer approach, stressing social attitudes and practices towards environmental conservation.

- a composite of all the previous ones.

Each of these interpretations reflects the prevailing socio-political beliefs and attitudes of various societies or institutions, but also the complexity of each case region or state.

Implicit in every attempt to define sustainability has been the ideology which influences the perception of the reference state of sustainability, the "desired goals", drawing heavily on political ideology, the role of the state and the treatment of public property.

The complexity of each case reflects the institutional context in which decisions are made, reflecting the established lines of authority and responsibility, widely diverse among Mediterranean coastal regions.

These differences in views influence the basic dimensions and parameters which are used to describe sustainability.

Three groups of indicators can be used for sustainability conditions in general:

- Environment

natural resources (soil, water, etc.)
natural habitats
sea water quality
air quality
water consumption
solid waste
energy

- Economy

employment concentration
wage levels

- Society

poverty/children
housing affordability
health expenditures
birth defects
community service
democratic participation
literacy

On the basis of these three basic sets of principles the following can be suggested:

- Environment

  resource use and recycling
  pollution control
  biodiversity
  reliance on local resources

- Economy

  accessibility for basic needs to services and facilities (food, water, shelter, etc.)
  work opportunities

- Society

  health
  access to amenities facilities and services
  access to education/knowledge
  participation in community matters
  opportunities for leisure/culture
  aesthetics/human scale

The different dimensions used to describe sustainability in the context of coastal areas reflect different views on the appropriate indicators employed. In spite of these differences, it is possible to identify three broad categories of issues which relate to the use of indicators in policy making, the spatial level of reference and the time horizon assumed.

C Policy orientation

Indicators are used for describing the state of the "coastal environment" in relation to a state of desired conditions describing sustainability. They reflect the purpose of their utilization and the context-or particular environmental and socio-economic conditions.

The specific institutional setting concerning the legitimization and responsibilities of local/regional/national authorities influences the purpose of indicator use. Two broad sets can be identified: the indicators for a "complete" or holistic description of the urban environment, and the indicators suited for the particular authority/body. Both are used for policy evaluation; the former as a reference, and the latter as operational guidelines for decision-makers.

The first set of "reference" indicators includes several aspects falling broadly within the environmental, social and economic spheres.

The second are those over which specific authorities are assumed to have responsibility and control.

C Space orientation

The treatment of geographic space is another issue strongly related to the spatial level for seeking sustainability.

A basic hypothesis is that sustainability can be sought at every spatial level, including the local one. Most literature assumes that sustainability is sought at the global and local level.

A basic methodological difficulty in this respect is the definition of a coastal area. Most use the administrative boundaries of local authorities, mostly reflecting initiatives seeking sustainability indicators. Such an approach can be biased, though, in view of the interrelationship of the coastal zone with its hinterland. This approach suggests taking the region as an appropriate level where natural processes and socio-economic phenomena are better manifested and related.

Another issue relating to geographic space is the feasibility and rationale of seeking sustainability at a local level, given the wider interdependence of each locality with its vicinity, broader region, and even the world.

C Time orientation

The treatment of time has been quite vague, assuming a very broad perspective of intergenerational equity imbedded in the WCED Report. Some cases are quite explicit about the lack of time horizons, assuming that such targets are a matter for local societies, and that as long as there is progress towards sustainability this is satisfactory. When, however, performance indicators are used, it is necessary to utilize a time horizon to reference the progress made.

Related to the issue of time horizon is the time frame of reference for sustainability. That is, the conditions set as references. This issue is often quite relevant for environmental aspects where restoration of previous levels of environmental quality standards is possible. For example the reduction of CO_2 emission standards can be considered for 1992 levels.

II.2 Integrated Coastal Management

During the last few years, several articles and books have been written with their core topic the management of coastal areas, and in certain cases of islands as well. The suggested methodological approaches appear to share a lot in common. Similarities in the goals to be pursued, in the strategies to be developed in the tools to be applied, despite some differences.

In the following paragraphs a presentation of four very well known suggested management practices will be made with the emphasis mainly drawn not in the analytical presentation of each one separately, but in the identification of the particularities/differences characterizing each one. The study of the four approaches will focus on some core issues, trying to highlight particularities/differences. In addition, some thoughts about suggested approaches will also be included.

The analysis included the following books:

1. *Amber, 1994, "Economic Development and Environmental Protection in Coastal Areas: A Guide to Good Practice.*

2. UNEP, 1995, Guidelines for Integrated Management of Coastal And Marine Areas

3. OECD, 1993, Coastal Zone Management, Integrated Policies.

4. J. Clark, Integrated Management of Coastal Zones, 1992, FAO, Rome.

II.2.1 Definition of the approach

Integrated Coastal Zone Management is considered as one of the tools, probably the most essential, towards Sustainable development of coastal areas. Besides ICZM, other tools recognized were the following:

- Planning for tourism
- Environmental Impact Assessment -E.I.A-
- Designation of Protected Areas
- Market Mechanisms
- Land Purchase
- Networking

Some of the key features raised by Coastal Zone Management approaches are:

The need to adopt a national perspective, a long term view, the establishment of a specific agency responsible for coastal issues, the promotion of strategic planning for coasts, etc.

It is interesting to note that, according to approaches like the one presented above, tourism development is identified as an issue to be dealt with separately. In several cases this is well justified, since it allows for more detail. If one considers the significance of tourism for most of the economies throughout Mediterranean countries, in relation with the severe environmental impacts caused by the irrational or intensive tourism growth, it is justified to look at corresponding issues separately, but not necessarily in an independent way.

On the other hand, other approaches adopt a wider perspective for the term ICZM, which is considered as a "proactive and adaptive **resource**[1] management for environmentally sustainable development in coastal areas.

Ecologically sustainable development is most likely to be achieved through integrated management[2] of coastal resources.

Sustainable development appears as the ultimate goal, while ICZM is seen as the way to assure the transition to that stage. The tools mentioned previously, for example E.I.A, as

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[1] The term refers to substances, organisms and properties of the physical environment -natural resources-

[2] The term management refers to a set of activities carried out by governments -political and administrative level- to guide and support the operation of the economic sector and provide market produced goods. These government activities in turn ensure that market produced goods -including an acceptable quality of the environment- are available in sufficient quantity and quality.

additional tools for coastal management besides ICZM, are now included in the approach of ICZM itself.

Sectoral concerns are included as well. As a result, management of tourism development of an area presents part of the ICZM program for the same area. Sectoral interrelations which quite often lead to conflicting situations ought to be dealt together in order to minimize conflicts and furthermore increase the economic efficiency of the system itself.

Concluding a multi-sectoral approach should be done in all cases. Although ICZM is a multi sectoral process it should not be seen as a *substitute for the uni sectoral programs* prepared for tourism, industry, etc.

As a result, within the context of the ICAM, guidelines for sectoral policies should also be included.

These guidelines would refer to issues such as:

- Urban growth
- Location and operation of industrial facilities
- Tourism
- Areas for aquaculture
- Areas suitable for fishing
- Agricultural areas
- Open spaces.

For all above activities, limitations are to be defined, so that conflicts and environmental threats will be either avoided or at least minimized.

Besides integration of sectoral concerns, an integration of *local, regional, national and international goals* is advised.

Integration also calls for the integration of authorities, of geographical and political levels, of economic activities and environmental resources, of zone activities and activities in other regions, of time itself. That is, the short term objectives, which basically refer to local and regional levels, should be integrated with long term objectives, usually involving national and international levels.

One may argue, of course, that such distinctions should be avoided, since long term objectives may exist on a lower level as well.

It should be noted that in almost cases the net result is an emphasis on management of resources. This is reflected in the goals to be pursued, including:

C sustainable use of natural resources;

C maintenance of biodiversity;

C conservation of critical habitats.

ICZM should closely reflect general government economic policy, while in certain cases ICZM may provoke changes in the economic policy of a country. ICZM is considered to be a

combination of development management and resource management. Although environmental considerations are of particular importance, the extent to which the corresponding goals will be included depends on the country's willingness to extend priorities usually given to economic yields, products, employment, income and consumption to nature.

II.2.2 Defining the Coastal Zone

Several approaches call for Integrated Coastal *Zone* Management, while others for Integrated Coastal *Area* Management, not always suggesting particular differences.

It is widely recognized that there is no real definition of the coastal zone. The identification of the boundaries depend on political, administrative, legal, ecological and pragmatic considerations. The 100 metre strip defined by several land use regulations is considered inadequate, so a much wider area is considered as coastal area, its designation based upon geographical and environmental criteria related to geomorphology, sediment transport and land drainage patterns.

In any case, the geographical scope will vary from case to case. It is suggested that the coastal zone should include economic activities and related problems in any case.

The borders of the coastal zone are relatively more easily to identify when compared with the identification of the coastal area. This distinction is quite important, since a lot of ecological, social, economic processes take place in this broad coastal area, although their extreme manifestations appear in the coastal zone.

According to other approaches, the definition of the coastal zone varies depending basically on the *scope of the study* itself or, better, the objectives of the management program. As a result, the extent of the zone will vary according to the nature of the problem, the extent of the resource and the boundaries of governments with jurisdiction and responsibility for management in the coastal zone.

In some approaches it is suggested that the narrow coastal zone is to be only regarded if this is the focal point. If watershed issues are of concern an inland extension will be required. In the case of small islands the whole country might be considered as a coastal zone.

In any case it is clear that the coastal zone should include at least the coastal lowlands, the intertidal areas, salt marshes, wetlands and beaches and offshore features such as coral reefs and island habitats.

The main problem confronted in most cases is the operational character of the above approaches. A number of problems have to be overcome, such as the political boundaries, the definition of the boundaries of coastal waters seawards, etc.

For operational reasons it is suggested that in the first place a broad planning zone should be delineated, while in a next stage a narrower management zone should be defined as well. It is evident that the planning phase covers a much wider area than the one that it will eventually be managed. The broad planning zone should include areas threatened by seastorms, tsunamis, or other natural causes. Besides natural ecosystems, towns and

industrial centres should also be included. As a result the broad planning zone can be as wide as the drainage basin area.

For the inland boundary of the planning area, it will be convenient to use a major highway parallelling the coast, the foot of a coastal mountain range, or the inland boundary lines of the coastal counties or municipalities, or other recognized political or physical features.

II.2.3 Integrated Coastal Area Management Process

The Integrated Coastal Zone Management according to some approaches is constituted by the following phases:

1. The Definition of the Framework
2. Implementation
3. Information, including a special handling of data.

Most of the approaches put great emphasis on the identification of agencies for management, on the assurance of financing, on the preparation of management plans.

Several examples have been used to illustrate the content of an Integrated Coastal Zone Management. In most of these programs -the Atlantic Coast of Aquitaine, the English and Welsh coastline, Wexford Country in Ireland,Languedoc-Roussillon in France- the emphasis of the management programs is basically on the preservation of certain natural assets which are either considered as of unique beauty, or are under some threat -i.e. erosion, storms.

In certain cases the strategy covered a broader field of action, including policies for the development of an alternative type of tourism, with culture, health, and sports, while emphasis was drawn to the attraction and further familiarization of tourists with local characteristics.

Protection was in any case of high priority. Speculation in sensitive areas, usually private, was prevented. Besides land protection, other measures related with pollution control, creation of nature reserves, habitat protection, restoration of wetlands, maintenance of marshes, water management, assurance of public access to beaches, restoration works, control of car parking, introduction of nature trails and cycle routes, and public awareness programs were included.

In most cases the application of corresponding management programs covered areas of particular ecological, scenic beauty, essential for the preservation of not only local but in certain cases of national “identity”.

In certain cases -Ireland- a further identification of appropriate uses and functions of each zone of the coast was attempted. In addition, adoption of a cell or area approach was followed, since it was thought that it would reflect the different development potentials, protection needs and priorities for each part of the coast.

It seems that land control and particularly the establishment of a zoning system is encouraged particularly for those areas which represent significant ecological units -main ecosystems, dynamics and sensitive- the case of France.

In some cases -France- the scope of the Management Program was even broader than the management of particular resources, expanding up to the study of socioeconomic aspects. Formulation of alternative development scenarios and further evaluation of their human and natural impacts was also part of the study's scope. Considerations of ecological demands and constraints, in order to define development solutions were also included.

It is clear that practice indicates that coastal management in most cases develops around key issues, identical for each case. This could be the preservation of sand dunes, or the upgrading of tourism etc. Although the scope or the principles declared in the first place are common and quite broad, usually referring to protection issues or development in accordance with the preservation of environmental quality, in practice the emphasis is drawn on certain specific issues, appearing more as a single task program than an integrated management program. The initiatives undertaken are more broad in the case of tourism development.

In conclusion, most of the coastal management programs do not appear as a full-scale integrated programs, but as cases of limited interventions.

Besides the development of specific site proposals, one may argue that the whole process has a non spatial character. It is well accepted that environmental issues and in particular coastal development issues are tightly related with spatial issues as well. Spatial allocation of activities is crucial, and alternatives over different allocation strategies should be carefully examined from the very first moment, as an important part of the whole process. It makes sense, of course, that this more spatially oriented approach can be pursued in cases of regional local level.

According to another approach, an Integrated Coastal Area Management process includes the following three stages:

a. Initiation, consisting of
   I. Analysis of triggering factors, such as past or new decisions, external influences, or reactions from the community, etc.

b. Preparation of the Integrated Coastal Master Plan (Planning), including
   I. Preparatory phase with the identification of sectoral problems.
   ii. Analysis including present and future uses of coastal resources and their interaction. In this stage, projection of existing trends and forecasts of activities not currently affecting, but expected to affect the natural system in the future are included. The forecasts are furthermore integrated in the form of alternative cross-sectoral scenarios.
   iii. Definition of goals (global, area -specific, sectoral) of ICAM and strategies (sectoral and cross-sectoral).
   iv. Preparation of integrated plans and policies, including, among others, allocation of land and sea uses.

The most important guidelines for these phases address:

- The definition of the coastal area suitable for ICAM.

- Establishment of the institutional mechanism needed for integrated planning.

- Creation of legal instruments for integration and preparation of policy instruments.

- Financing mechanism for ICAM.

Of crucial importance is the establishment of a coordination mechanism which will be responsible for guiding the ICAM process.

c. Implementation of the Plan, including
   i. Implementation of plans (the total period of the plan will be divided into shorter periods and further definition of short, medium and long term targets will be included, so as to assure a more operational character to the whole plan).
   ii. Monitoring and evaluation of the implementation, aiming in the evaluation at the effectiveness of decisions, of the efficiency of investments etc.

In this phase, application of several techniques is encouraged, such as:

- Environmental and economic techniques
- Policy instruments
- Evaluation techniques, etc.

The whole process has all the typical characteristics of planning. It is cyclically repeated, and includes feedback mechanisms.

A rather characteristic example of such an approach is the case of the “Integrated Planning Study for the island of Rhodes”. Management of environmental resources was strongly related to the development of the island itself. Alternative development opportunities were searched. In addition, spatial implications of these alternatives were further identified.

According to the approach already described, the development of an action plan which will guide implementation will be required. *Site specific proposals* are to be included for land and sea use, based on detailed plans *for priorities areas*, where sectoral policies and programs of action related to the development and protection of the resources of the area are well integrated.

The process described previously for the Integrated Coastal Area Management was particularly explicit, successfully integrating sectoral concerns, although there might be some reservation concerning two issues.

The first refers to the issue of the long term perspective that should characterize every effort for ICZM, which is included through a prospective sectoral analysis.

Although the forecasting techniques/methods have been widely used in previously years, one may argue that their application is in contradiction with the basic principles of the ICZM itself, which implies an integrated management of both resources and activities. Examining the future of its sector separately does not allow a complete understanding of the conflicts provoked by the simultaneous development of all other activities. It is exactly the future interaction that should be taken into consideration when one wishes to succeed in long term planning.

A second criticism concerning such an approach is that it presupposes a well- developed administrative and planning system, which is a condition often lacking in many Mediterranean countries. In addition, such a perspective does not accommodate the need for a more flexible approach of strategic guidance of the system very well.

Another approach to the process of the Integrated Coastal Area Management includes the following stages:

1. Detailed inventory and assessment -information and analysis- to produce required data.

2. Coordinated analysis to identify those elements in development plans which would comply with the criteria laid down, and enable the modification of plans accordingly -and thus helping to correct intervention deficiencies and market failures-

3. Coordination of policy formulation, to eliminate conflicting policies being developed - thus helping to correct intervention deficiencies-

4. Establishing implementation, monitoring and evaluation mechanisms and defining responsibilities.

The main condition for a proper analysis and an efficient application of integrated instruments is considered to be the establishment and the successful operation of an institutional mechanism.

The sequence for the coastal zone management process can be presented in the following way:

- Establishing administrative/political coordination and the creation of the institutional mechanism.
- Production of information -analysis/planning-
- Reassessment of present policies.
- Reassessment of legislative requirements.
- Reassessment of legal/judicial action.
- Preparation of alternative options and analysis of implications -environmental, social, economic- and risk uncertainty.
- Selection of the final plan, involving public participation.
- Implementation.
- Monitoring and evaluation to feedback into planning.

According to an other approach the stages of ICZM are the following:

1. Policy formulation.

2. Strategic Planning.

3. Program Development.

4. Implementation, including several management mechanisms
   - Pollution control
   - Designation of Critical/Protected Areas
   - Environmental Assessment
   - Socio-economic Assessment
   - Conflict Resolution.

II.2.4 Strategic Planning

Strategic planning refers to the phase where a general strategy is created. Decision making should be based on criteria related with:

- economic efficiency;
- low resource intensity technology;
- environmental stability and diversity and
- equity and social self determination.

The development of a Master plan should follow.

The Strategic plan includes, in the first place, investigation, data collection, dialogue along with negotiation and finally draft writing. The plan should also:

- Identify a particular agency responsible for the program.
- Authorize the necessary funding.
- Define objectives.
- Guide cooperation among sectoral agencies.
- Define the time required for the realization of each stage of the program.
- Formulate a step by step program.

Some suggest that it is impossible or is not necessary to start a national ICZM all at once. It can be implemented either *region by region, resource by resource, or function by function*. Through this step-by step process a better evaluation of the whole problem can be achieved, since isolated cases serve as pilot projects, providing for useful experience and information.

Within this context, it is possible to focus first on some areas -lagoons, estuaries- or in some specific resources and corresponding problems -i.e. erosion-. Within this context, designations of Critical areas and of Exclusion zones can be encouraged.

The need for a special coastal management agency responsible for assistance in decision making is recognized.

Within this context the strategies to be developed in order to implement coastal policy are the following:

- Management of fishery resources.
- Management of recreation and tourism.
- Management of extraction of minerals, sand, gravel, oil and gas, and
- Management of marine transport.

It is obvious that the above strategies refer to each one of the economic sectors separately. Besides those strategies some additional ones will be required that cut across sectors such as:

- Pollution control.
- Management of coastal land use and protection of significant landscapes and conservation of coastal ecosystems.
- Management of overall economic growth and
- Management of governmental and private use of coastal resources.

II.2.5 Tools for Integrated Coastal Zone Management

Concerning the instruments to be used, a variety of them have been developed starting from simple ones -industrial licenses, building permits- to more complicated ones like scenarios, or EIA or more sophisticated tools from a technical point of view. In particular, the instruments that are suggested for a successful application of ICAM are:

- *Data management* including tools like GIS, which facilitates dealing with spatial problems.
- *Evaluation and assessment techniques* including EIA, risk assessment, economic evaluation, prospective studies, etc.
  Several others like carrying capacity assessment, studies of impacts of expected climatic change, etc. belong in the same category of assessment techniques.
  In the category of economic instruments, techniques like cost/benefit analysis, least cost analysis are included.

- *Instruments for implementation* including regulatory and economic, bargaining, negotiations and voluntary agreements, conflict resolution techniques, etc.
  Within the category of regulatory instruments one may identify the following: land use planning, zoning and building regulations, licensing, etc.
  Within the category of economic instruments one may identify the following:Charges, development taxes, subsidies, resource pricing

It should be noted once more that among the tasks of an ICAM is the definition of *specific areas* appropriate either for a certain kind of development or appropriate for the development of required infrastructure, or areas where pressure will further increase in the future. It is obvious therefore that a close relationship exists between any kind of planning or management of resources with the spatial implications of such actions. One such example is the identification of areas of opportunity using site suitability and exclusion criteria.

II.2.6 Sustainable Development/Integrated Coastal Management

By definition Coastal zone management is an activity within the broad field of resource management.

Furthermore Resource management is defined *as a conscious process of decision-making whereby natural and cultural resources are allocated over time and space. This allocation aims to optimize the attainment of stated objectives of a society, within the framework of its technology, political and social institutions, and legal and administrative arrangements.*

Coastal zone management is in reality a multisectoral and cross-sectoral activity.

The following definition highlights even better the difference between the two terms, ICAM and sustainability.

A process of achieving goals and objectives of environmentally sustainable development in coastal areas, within the constraints of physical, social and economic conditions, and within the constraints of legal, financial and administrative systems and institutions seems the most comprehensive.

What one may understand from this definition is that although goals of sustainable development are definite, fixed, the way to achieve these goals through time will change, depending the constraints arising form the socioeconomic and institutional context. The continuously changing process in order to reach the fixed target of sustainability could be considered as ICZM.

Furthermore Sustainable development requires the assurance not only of environmental quality, but of economic development and above all of social equity. It is clear therefore that the goals declared by sustainability are broader than the goals pursued at least in the first place by ICZM approach.

III. POLICY RESPONSES

The basic policy framework developed for Sustainable Coastal Development and the more detailed one for Integrated Coastal Zone Management might require further elaboration both in terms of the approach and the techniques applied. Furthermore, it is evident that the present state calls for immediate action since problems are worsening.

Any delay in policy response is likely to lead not only to a further deterioration of environmental quality, probably in an irreversible way, but furthermore will provoke deterioration of the quality of life in general and aggravation of issues of social equity. Last but not least, impacts upon economic activities will worsen, provoking a decline of activities as well, tourism being one of these.

In many countries, meeting the current prerequisites for integrated planning hinders the initiation of ICZM processes.

III.1 Actions undertaken for the Implementation of ICZM

At a political level, one of the most significant initiatives undertaken was the Tunis Declaration concerning Sustainable development of Mediterranean countries, adopted by the Ministers in charge of the environment in the Mediterranean countries and the member of the European Commission responsible for the environment. It was agreed to integrate sustainability considerations when implementing national and local development policies, to provide resources -economic, human, organizational- and the means to achieve sustainable development and develop bilateral, regional and multilateral actions. Cooperation and partnership was to be promoted, while development of appropriate measures and institutional restructuring in accordance with sustainable development were to be encouraged.

Another important initiative undertaken is Agenda 21 for the Mediterranean, which had the development of a framework for achieving sustainable development as an ultimate goal. Within this context, special reference is made not only to environmental issues but also to social and economic aspects in a rather holistic approach. In particular, goals and activities to be undertaken were identified to achieve international cooperation, demographic sustainable development, adoption of an integrated approach to planning and management of land resources, water resources, etc.

Issues such as the role of NGOs, local Authorities, private actors as well as issues related with training, education, public awareness, cooperation, promotion and in general of implementation were also dealt with.

Concerning the development of actual programs it should be noted that efforts towards the development and further application of integrated coastal management throughout the Mediterranean region started in the late 70s. Efforts were further intensified in the mid 80s with the initiatives undertaken by the Mediterranean Action Plan (MAP) including Blue Plan, Priority Actions Programme and the activities of the other regional centres integrated in pilot projects, Coastal Area Management Programs (MAP CAMP).

Within the context of international initiatives one may include several important international conferences held in recent years (i.e. MEDCOAST).

Action was also undertaken on a national level. Certain progress was also achieved in the field of coastal management related legislation (Israel, Spain, Tunisia), and in the creation of institutional arrangements for the integration of coastal management activities (Israel, Tunisia, Syria).

Within the context of the above activities, several documents have been published providing additional information, drawn in several cases from specific case studies. Still more significant experience is gained. Although fragmentary these applications allow for a testing of ideas on various tools and techniques, besides the conclusions for the theoretical framework that can be drawn.

III.2 Some of the reason for failures of intervention in coastal management

I. *Inadequate information*, and understanding of coastal processes and ecosystems, inadequate data and projections, lack of skilled technical staff, especially at the local level, where pressure for coastal land use development can be acute.

In addition, physical and biological information on the state of the environment needs to be supplemented by an analysis of the social and economic implications of alternative plans to identify trade-offs.

ii. *Inadequate co-ordination* among ministries or poor demarcation of responsibilities among government agencies.

iii. Limited range of regulatory instruments in coastal zone management.
During the past decade special attention was drawn to the development of a limited range of regulatory instruments in coastal zone management. Encouragement of simultaneous use of economic instruments in conjunction with regulations as,

- regulations may be flexible and static,
- the design and enforcement of regulations may be influenced by vested interest groups undermining the credibility and attainment of stated environmental policy objectives,
- the administration costs of regulations may be high.

iv. *Unsatisfactory policy implementation and inadequate monitoring and evaluation of policy performance.*

Implementation problems include political commitment, inadequate administrative arrangements and failure to enforce policies or legislation. Monitoring and evaluation are not always sufficient implemented. Planning is often poorly carried out, and on a remedial basis rather than a preventive one.

Finally, intervention failure may result from the influence of different interest groups on policy formation and the management process.

III.3 Identified Problems in the development of an ICZM

As mentioned in the previous section integrated coastal management requires a multi-sectoral approach. In practice this is not an easy target; cooperation or coordination still appear as unattainable objectives. Responsibilities over a specific coastal area, or even a specific function are distributed among several authorities, on all levels, from local to national level, in certain cases even further.

As a result, inconsistencies will arise in sectoral decision making; conflicts will appear. Although existing approaches in ICZM define in several cases the goals and the process to be followed quite explicitly, in practice, a lot remains to be done.

In particular there is no real multisectoral approach. Instead, the traditional practice of sectoral planning is followed. Long term considerations, as the sustainable concept requires, are still to be met. Instead, emphasis is laid on short term effects. This practice is not completely unrealistic, but it proves to be inadequate when dealing with issues concerning environmental quality. Development of long term goals and their further integration with short term considerations remains a distant goal to be attained.

Other issues which have either not been confronted at all, or have been partially dealt with are the application of conflict solution techniques in the coastal management process, and the issue of public participation in the whole process.

It is understood that differences in the problems anticipated vary significantly among different countries. Still, no country can claim that has achieved this in developing an ICZM.

In any case, although in several cases significant progress has been made, this issue remains to be answered where the rate of change towards the adoption of a more “aggressive” policy is sufficient enough.

It is necessary to further highlight the problems involved in the establishment and/or strengthening of the ICZM processes, in the individual countries of the region.

One may recognize problems related to:

Research/Education

One of the most important problems to be overcome is the acquisition of required knowledge on coastal issues. Cooperation on a *research* level is recommended, especially for several of the issues which are of global interest, such as: global climatic change and its impacts, understanding and modelling, coastal and marine eco-systems, land-marine interface interactions, environmental economics, impact of congestion in coastal areas, carrying capacity assessment of eco-systems, etc. But many of them are also country -or site- specific and need specific approaches.

Research has been heavily oriented towards the understanding of ecological processes, but little progress has been made towards the development of policy analysis tools. Within this context, development along with improvement of existing knowledge and in particular of methodological approaches, of technical tools, such as GIS, EIA, prospective studies, economic instruments for ICM, cost-benefit analysis, conflict mitigation techniques, and carrying capacity should be carried on.

Developing appropriate tools and acquiring a sufficient theoretical background will not necessarily assure proper implementation. Awareness and training of the people who will be responsible of the whole process is essential. This guidance should be based on a solid background which can be attained through education.

So far, training and education are mainly offered through internationally sponsored programmes, or within ICM projects having as their “target group” mainly decision makers, managers and professionals.

Legislation/Institutional arrangements for Coastal Management

All Mediterranean countries have developed legislation relative to environmental protection, including general laws on environmental protection, laws regulating individual coastal management issues (land-use planning, maritime, tourism, fisheries, sea and fresh water pollution, monitoring and protection, etc.), and corresponding by-laws, standards and norms. Several countries (Spain, Italy, Israel, Tunisia, etc.) have laws which treat the coastal areas in a comprehensive way. Such a national framework is complemented by numerous international conventions adopted by all, or by a large majority of the Mediterranean countries (Barcelona Convention, the Basel Convention, Law of the Sea, UNCED documents, EU directives, Tunis Declaration,).

The need for an agency responsible for the overall management process has been widely recognized and as a result, coordination and integration of all levels in the decision making process is required.

As a result, special agencies are sometimes established, or responsibilities are given to an existing institution at the lowest level, which can guarantee a successful implementation of the programme.

In many Mediterranean countries, a sectoral approach in coastal management is still dominant.

Integration of all interested and involved groups in the process is a major problem.

National strategies and policies

Depending on the political and administrative framework of the country and its planning tradition, such efforts at best cover coastal regions or administrative units as special parts of an overall plan or strategy. Some countries have entirely (Malta, Cyprus, Israel), and some prevailingly (Italy, Greece) coastal nature. Therefore, coastal related issues dominate in their national documents.

The degree of integration of coastal management issues depends largely on the institutional framework. In most cases, the formulation is easier than implementation of national coastal management strategies and policies.

Financing of management

Although environmental problems appear to be common among Mediterranean countries, the differences arising from the state of their economic development is probably one of the reasons preventing some countries from ICZM.

Financing addresses:

- administrative structures,
- infrastructure development
- conservation projects.

Most of the developing Mediterranean countries provide for all these needs from budgets which are, of course, limited to higher or lesser degrees.

The preparatory and planning phases of coastal management can be established at little cost while implementation requires large sums. Therefore, it might be necessary to define priorities in a gradual manner.

In some cases, in the developing economies, funds for preparation can be secured from international donors (The World Bank - METAP and National Divisions, the European Investment Bank, EU, GEF, UNDP, MAP - financed by the Mediterranean countries, etc.)

IV. POLICIES FOR SUSTAINABLE DEVELOPMENT OF MEDITERRANEAN COASTAL AREAS

IV.1 Summary

Summarizing the previous sections, one can conclude that:

- Coastal areas are priority areas in the Mediterranean due to:
  - their ecological, economic and social importance
  - the conflicts of use and intensive pressures for development they face
- Mediterranean coastal areas need policy action
- The particular characteristics of Mediterranean coastal areas derive from their:
  - Natural ecosystems structure and dynamics: types, diversity, etc.
  - Human ecosystems structure and dynamics: demography, economy, culture, etc.
  - Interaction of natural and human ecosystems.

Four major categories of impacts can be identified:

- On the *structure and function of natural ecosystems* as a result of the construction and operation of facilities for human activities and the associated development, either directly (through loss of vital habitat areas or pollution) or indirectly (for example, through noise or the presence of people).
- On the *quality and quantity of natural resources* (forests, soil, water, etc.) as a result of increasing concentration of people and activities adding to the demand for their use and exploitation and disposal of waste.

- On the *use of the territory*, the spatial organization and function of the area as a consequence of the development of human activities and associated facilities, infrastructure and urban development.

- On the *natural and man-made landscape* as a result of the size and scale of facilities and associated development . The landscape is often a major source of tourist attraction in a place.

- There is a wide diversity of types of Mediterranean coastal areas as a result of differences in the natural and human ecosystems and their interaction. A basic typology would include:

    - Coastal areas densely urbanized in dynamic stability or even decline.

    - Coastal areas undergoing rapid development and urbanization.

    - Coastal areas with rural development in a relatively natural state.

    - Islands

These types are further diversified at a smaller scale as to the particular:

- geomorphologic and ecological conditions (lagoons, deltas, bays, etc.);
- human activity (tourist areas, metropolitan waterfronts, industrial areas, etc.)

or

- presence/absence of resources (water, soil, etc.);
- intensity of use;
- types of conflicts.

Therefore, different situations and problems need different policy responses or actions.

- The management of the problems of Mediterranean coastal areas should be rational combining short term needs with long term perspectives and aspirations.

- An integrated approach is more efficient than a fragmented one
    - Multisectoral coordination.
    - Multilevel (of authority) coordination.
    - Integration of tools.

- Integrated Coastal Area Management is an ideal approach to ensure multisectoral coordination and integration of tools.

    - It places emphasis on planning, or anticipatory action.
    - It is ideal for controlling urbanization and to plan for infrastructures.

- Mediterranean countries often lack the necessary institutional, financial and technological framework to pursue Integrated Coastal Area Management.

    - Often they lack the necessary political and social support (and tradition) to implement such all-encompassing policies.

- Often they struggle to attract investments for development, with areas outside the Mediterranean putting a high priority on socio-economic development.

- In spite of such constraints, a lot of efforts are increasingly addressed to the problems of coastal areas. Some of them are partial or sectoral, or small area oriented, while others are comprehensive and integrated.

- A large diversity of tools exists for the management of Mediterranean coastal areas. They include regulatory, economic and physical interventions. Some are geographic area-based and some other are non-spatial in character or procedural. They can deal with small issues like beach cleaning or erosion protection to wetland conservation or tourism planning.

- Development in the Mediterranean is increasingly dependent on environmental quality as it relies heavily on the use of local natural and cultural resources. The future of the Mediterranean depends to a great extent on the future of environment/development interaction. A long term strategy is necessary as a guide for action at all spatial levels.

IV.2 Guidelines

- Such a strategy should be in conformance with the goals of sustainability, combining economic efficiency with social equity and environmental conservation and allowing for intergenerational equity.

- Characteristics of a strategy for sustainable development of Mediterranean coastal areas:

  - Multi-dimensional and long-term oriented.

  - Targeted to *critical* factors (pressures, resources) and issues.

  - Based on the conservation of resources and basic ecosystem functions as a basis for social and economic development. This calls for:

    - protection of critical areas
    - multiple use of resources
    - multiple use of coastal space
    - management of areas for nature conservation and/or future use.

  - Diversified and adapted to the *type* of problem or area addressed to:

    - upgrading the environment, enhancing economic activity and providing the necessary infrastructures to improve services (water and sewage networks, solid and liquid waste disposal, etc.) in already densely developed coastal areas and areas in decline;
    - urbanization control through land development regulation, provision of basic services for guiding growth in coastal areas experiencing rapid growth and urban sprawl;
    - conservation of nature reserves in rural areas;

- special integrated environmental management and socio-economic development plans and programs for islands.

- Mobilizing a number of basic actors in the spirit of “shared responsibility” through sensitization to issues and participation to the management of coastal areas.

- A more comprehensive approach could be instituted to manage the Mediterranean coasts in an integrated way . This could include:

  - Identifying a *critical* zone for strict management.
  - Linking the management of the critical zone to policy making, planning and programming of a wider area of influence.

- Implementation of policies is essential, through better coordination and streamlining of operations and lines of responsibility.

- Monitoring and evaluation is a vital part in a process of periodic review and adjustment of policies.

IV.3 Priorities for Action

On the basis of the above, the following steps of actions can be envisaged in the short term:

- Identification and assessment of coastal resources and critical processes and factors.

- Identification of areas of interest from the perspective of environmental conservation (i.e. natural habitats, scenic beauty/natural heritage sites, erosion/natural hazard areas, etc.) or future reserve.

- Analysis of conflicts and pressures, land-use and urbanization patterns and opportunities.

- Analysis of existing policies, plans and programs at various levels to identify gaps, overlaps and conflicts of interest.

- Development of a plan of action and periodic review process.

Complementary actions can include:

- Development of information systems on the state of the coastal environment (on a geographical basis).

- Improvement of review procedures for projects dealing with the coastal zones (i.e. specification of EIA, etc.).

- Establishing procedures to incorporate environmental management in development programs.

- Development of pilot programs for key problems as beach erosion protection/management, coastal habitat management (linking water basin management with ecosystem protection, etc.), management of coastal tourist resorts in “crisis”, etc.

- Development of innovative management tools and techniques for sustainable development (i.e. establishing thresholds for development on the basis of local resources and infrastructure constraints while upgrading capacities through organizational or technological means, visitor flow management programs, etc.).

- Development of “demonstration” programs to solve environmental problems (i.e. establishing waste treatment facilities, cleaning the beaches, restoring natural processes , etc.).

- Raising public awareness.

- Review and revise existing plans and programs on the basis of the principles for sustainable development, controlling negative impacts on the quality of the environment, respecting critical resources and ecosystem functions.

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ECONOMIC INSTRUMENTS

by

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ECONOMIC INSTRUMENTS FOR

SUSTAINABLE DEVELOPMENT IN COASTAL AREAS

1. INTRODUCTION

1.1 This paper brings together four concepts used today by governments in environmental policy making: sustainable development, coastal areas, integrated management and the use of economic instruments. These concepts are now widely recognized separately but their combined use so far has received less attention both in the literature and in policy making than the importance of the problems would require. The objective of this paper is therefore to assess how economic instruments can be usefully employed in coastal area management with the aim of moving towards sustainable development.

1.2 The concept that has received wide attention recently in policy implementation is integrated management, especially as used in natural resource and coastal area management (1) & (2). The paper will also examine the elements of integration that are essential to the application of economic instruments in coastal areas.

1.3 The paper is directed towards the problems of coastal areas in the northern and southern Mediterranean countries. However, to bring together the necessary information on the use of economic instruments, the area of research has been enlarged to use experience gained in other parts of the world including northern Europe, North America, Japan and Australia (9).

2. THE CONCEPTS

2.1 Sustainable Development

2.1 "Keeping options open for future generations" is one of the widely accepted definitions of sustainable development, but this is too vague for operational purposes. Developing this concept further: 'economic development should be such that it would leave the total patrimony, including natural environmental assets, intact over time'. To future generations should be bequeathed the same capital, embodying opportunities for potential welfare, that the present generation enjoys.

2.2 Environmental economics distinguishes three broad types of capital. Man-made capital (factories, roads, houses, etc.) can be decreased or increased at discretion but it will have impacts on the natural environment. Critical natural environment (ozone layer, global climate, biodiversity, etc.) comprises natural assets essential to life that cannot be replaced or substituted by man-made capital. The third type of asset - other natural capital - includes renewable natural resources and some finite mineral resources that can be wholly or partly replenished or substituted by man-made capital. (3)

2.3 Applying the environmental/economic approach to coastal areas the following broad questions are main issues for sustainable development (1):

- what should be the critical stock of coastal resources to deliver sustainable development;

- what should be the critical level of quality of coastal resources compatible with the critical level of stocks to deliver sustainable outputs;

- what species and ecosystems need to be preserved, and at what level, to provide their output on a sustainable basis;

- what are the factors (e.g. population density) and what should their level be to maintain the quality of life in coastal areas on a sustainable basis?

These distinctions between different categories of objectives are important for the application of economic instruments, because they have to be selected and applied with these objectives in mind.

2.2 Coastal Areas

2.4 For the purpose of integrated management, and, within this, for the use of economic instruments, it is essential to define the geographical limits of coastal areas and their natural capital resources. It is customary to distinguish between the narrow concept of coastal zone and the geographically broader concept of coastal area (1).

2.5 Coastal zone is constituted of coastal waters, 3 to 5 kilometres wide, (including the intertidal area), the seafront or shoreline areas and the coastal uplands, defined as an area of the interior between the shorelands and, most frequently, the highest peak of the closest mountain range. The coastal area would cover the coastal zone plus ocean waters up to 200 nautical miles seaward off shore (Exclusive Economic Zone) and the inland area where processes (demographic, economic, environmental) take place affecting in a significant way the coastal zone; such an area is an entire watershed region. This distinction is important for integrated management, and consequently for the resources and activities involved and for the economic instruments used.

2.6 The coastal areas feature a large variety of man-made and natural resources. Indeed, the uniqueness of coastal areas is found in this variety and in the associated diverse activities. On the one hand, these offer economic opportunities; on the other, they are the main causes of problems in coastal area management. The uniqueness of coastal areas is found in the interface of water and land, and the environmental amenities and economic services provided by them. This large diversity of resources poses also a special problem for the use of economic instruments.

2.7 In addition to those natural resources that can be found everywhere, such as inland waters, land and forests, there is a variety of other resources in coastal areas:

- coastal waters containing a great variety of marine resources and water birds, as well as significant recreational and transport facilities, cultural and aesthetic values, aquaculture potential etc.;

- coastal land consisting of flatland (urban and agricultural), sand dunes, headlands and cliffs, bays, lagoons, wetlands of different varieties, hilly and mountainous areas, etc.;

- watersheds and groundwater supplies which interact in various ways with coastal waters.

2.3 Integrated Coastal Management

2.8 Coastal areas are the repositories of a great number and variety of natural and environmental resources which provide or produce a flow of goods and services through complementary and/or inconsistent activities. The social and economic forces at work in coastal areas, competing for scarce resources, can lead to an overexploitation of resources, negative environmental effects, equity problems and reduction in social well-being and quality of life.

2.9 The main potential cause of this overall degradation is the sectoral policy approach: infrastructure, industrial, transport, tourism, agriculture, environmental etc. policies are often conducted independently of each other, failing to take into account their overall impact on the coastal area. It is now generally accepted that coastal systems are far too complex to be managed through independent sectoral policies. Rather than being transferred from one sector to another, existing as well as potential problems should be viewed and resolved within a comprehensive environmental, social and economic policy framework.

2.10 Such management framework can be provided through integrated management, which can lead to sustainable development of coastal area. The main elements of integrated management are: a consistent legislative framework setting out in detail the sustainable development objectives; and appropriate administrative structures ensuring coordination between all participants involved in the coastal area; a well defined management process for initiating, preparing a master plan and implementing it; a set of appropriate policy instruments to allocate resources and raise revenues.

2.4 Economic Instruments

2.11 The main function of economic instruments is to affect the allocation of resources by influencing the decisions of buyers and sellers of goods and services. Economic instruments usually affect resource allocation by changing the prices at which goods and services are exchanged in markets; for example charging a higher price for water will normally reduce the quantity of water sold while simultaneously increasing the potential revenue of the water authority. They generally involve charges or taxes on the use of resources or provision/elimination of subsidies for particular activities; they may also involve assignment of rights to the owners of resources.

2.12 In the following this paper will first discuss economic instruments in general; secondly the criteria for the use of economic instruments in coastal areas; thirdly the experience with economic instruments so far in coastal areas.

3. ECONOMIC INSTRUMENTS IN GENERAL

3.1 The Basic Principles

3.1 Today all governments accept two basic principles of resource and environmental management (UNCED 1992): the Polluter-Pays Principle (PPP) and the User-Pays Principle (UPP). As a broad generalization it may be said that the PPP aims largely at pollution prevention and control and the UPP at resource management. The basic objectives of both of these principles is environmental and economic efficiency in the market economies in which they operate. As they are designed to achieve efficiency through the operation of the market system, these principles should be applied partially with the help of economic instruments; this is particularly so for the UPP.

3.2 As sustainable development, another principle adopted at the same UNCED conference, establishes the need for close harmony between economic and environmental development, there is a definite requirement to manage the environment through instruments that provide clear economic signals. The economic instruments comply with this requirement and economic agents, enterprises and consumers, can respond to them directly.

3.3 Economic instruments can be defined as measures that directly affect costs and benefits of alternative actions open to economic agents, with the effect of influencing their behaviour in a way that is favourable to the environment. This definition leaves open the question whether instruments imposed for non-environmental reasons, but have beneficial environmental effects, should be treated as environmental economic instruments. Consequently the classification of economic instrument is open to different interpretations. One broad classification, with wide acceptance, is presented here:

- Charges
- Resource pricing
- Taxes
- Subsidies
- Other incentive schemes.

A detailed description of the various categories is given in Appendix A.

3.2. Benefits of Economic Instruments

3.4 Well defined and properly applied economic instruments can assist the achievement of environmental and resource management, including coastal area management objectives, in a number of ways.(4)

Compliance cost savings

- Resource users and polluters are encouraged to choose the most efficient way of responding to standards, thereby achieving cost savings that would not be available from less flexible regulations. In addition, where costs of environmental management vary between firms, those firms that can reduce their polluting activities at little cost will do so, while those that would face much higher costs, will change their activities to a lesser extent and face higher costs. The result is

an overall level of activity that minimizes the sum of environmental damages and compliance costs.

Efficient resource use

- Resource pricing based on full social cost encourages resource users to reduce waste and over-exploitation, leading to more socially efficient resource use.

Dynamic incentive effects

- Resource users respond to changes in environmental conditions, economic activity, and technological change in the most efficient and innovative way for as long as the cost of doing so is less than that imposed by the instrument.

Revenue raising

- Economic instruments raise revenues while improving environmental quality by discouraging environmentally damaging activities that cause economic losses. Revenues can be used to fund management programs, to make charges more effective by improving enforcement, and to compensate households bearing an unfair incidence of environmental charges.

Integration of environmental and economic goals

- At the individual firm level, pecuniary rewards for environmental stewardship encourage resource users to incorporate environmental considerations in decision making. At the economy-wide level, by facilitating environmentally benign activities in cost-effective ways, economic instruments work to enhance simultaneously environmental quality, competitiveness and economic growth.

3.3 Criteria for choosing economic instruments

3.5 The choice of the appropriate economic instrument for any area of pollution control or resource management requires considerations of the following major criteria (5):

Environmental effectiveness

The environmental effectiveness of economic instruments is mainly determined by the responsiveness of polluters and resource users to incentives. The primary objective of economic instruments is to provide permanent incentives to environmentally benign activities, technical innovation and product substitution.

Economic efficiency

In a broad sense, economic efficiency is achieved by an optimal allocation of resources; in a limited but more optimal sense, it implies that the cost of complying with environmental requirements is minimized.

Equity

The notion of equity introduces ethical and moral judgements about what is fair. Distributive consequences vary according to the type of policy instrument applied and how revenue generated by the instrument is used.

Administrative feasibility and cost

All types of policy instruments involve implementation and enforcements structures, particularly those that relate to the ease and cost of monitoring discharges and the number of target groups involved, as well as the legal and institutional settings.

Acceptability

It is crucial that the target groups involved be informed of and consulted about the instruments that may be imposed on them and about any changes in the use of these instruments.

4. ECONOMIC INSTRUMENTS IN COASTAL AREAS

4.1 The Need for Economic Instruments in Coastal Areas

4.1 The need for the use of economic instruments in coastal areas arises both from the general benefits that can be gained from their effective application and from the specific nature and qualities of coastal areas. Experience shows that both regulatory and economic instruments are needed in coastal areas.

4.2 The general benefits, that can be gained from economic instruments, are set out in paragraph 3.4 above and they can be realized also in coastal areas. However, some of these potential benefits are of particular importance: efficient resource use, revenue raising and integration of environmental and economic goals.

Efficient resource use

- to move towards sustainable development, coastal area efficient resource use is an absolute requirement, more essential than in any other area of a Mediterranean country; at present, these coastal resources are overexploited and mismanaged; regulatory instruments so far have failed to halt overexploitation and mismanagement; there is a clear need for new instruments and a combined and stricter application of existing ones;

Revenue raising

- although the main objective of economic instruments is efficient resource allocation, they can raise substantial revenues or sometimes they are used expressly for raising funds for specific purposes. As coastal governments often have to lay out substantial funds for pollution control, far above that which could be financed from classical revenue sources, additional financing is needed through economic instruments. In addition, central governments are often

unwilling to provide funds for purchasing and preserving sensitive natural areas and these purchases might have to be financed with the help of economic instruments;

Integration of economic and environmental goals

- in coastal areas, the relationship between economic activity, resource use and pollution is particularly evident and direct; to convince all participants to act in an environmentally responsible way, economic instruments provide signals that are transparent and tie markets, prices and economic instruments into an overall comprehensive picture; they integrate economic and environmental goals in a direct way through the market mechanism.

4.3 The specific nature and qualities of coastal areas also necessitate the use of economic instruments in combination with regulations. Three aspects are important in this context: the unique nature of certain coastal resources, coast specific activities and the intensity of activities.

Unique nature of certain coastal resources

- One of the exceptional features of coastal areas is that they possess a number of unique natural resources that are not present in other areas; some of these are: the coastal waters with a great variety of marine resources (fish and plankton life, underwater features and seabed resources); the coast line and shoreland areas with unique land and water features with sensitive habitats (sand dunes, headlands, lagoons and wetlands); historic and archaeological resources in an extremely fragile environment. To ensure efficient management, including conservation of resources, a range of economic and regulatory instruments are needed.

Set of specific coastal activities

- related to the unique set of coastal resources are a set of specific coastal activities exploiting these resources. These activities include: coastal tourism and recreation, fisheries and agriculture, exploitation of seashore and seabed natural resource, water transport and harbour activities. In addition, especially in the Mediterranean area, the rapid growth of urbanization due to the combination of climate and seashore; these economic activities lend themselves to management with the help of economic instruments;

Intensity of coastal activities

- in the Mediterranean countries, the majority of the population lives in coastal areas as defined for the purpose of integrated management; this population increases during the tourist season; in some areas there has been intense industrialization as well as construction of oil terminal facilities; shipping as well as tanker operations are at a high level; commercial fishing rose by 50% between 1973 and 1985; these are but few of the indicators of the level of coastal area activities and the pressures they exert on coastal resources and the environment.

4.4 Although the emerging resource and environmental problems have been recognized for a long time and over the last 25 years, major management efforts have been undertaken, the quantity of coastal resources has declined and their quality, with some exceptions, continues to deteriorate. Two broad lessons might be drawn from this (a) management has not, as yet, changed, the development trend towards a more sustainable form; and (b) policy instruments have not been sufficiently effective; they need to be broadened and more effectively employed.

4.5 The arguments advanced above suggest that there is a need and ample opportunity for an effective application of economic instruments. These were largely supported by theoretical considerations, but today there is sufficient empirical evidence to argue that they can be effective. A review of the literature on economic instruments (6) shows that economic instruments either have been concentrated on a specific pollution problem (e.g. water, waste) or on a specific economic sector (e.g. energy, agriculture). There are no cases where economic instruments were intentionally concentrated on a specific region, such as a coastal area, for its management. It is possible, however, to collect from various regions the results of the application of economic instruments for coastal area management.

5. REVIEW OF THE PRACTICAL APPLICATION OF ECONOMIC INSTRUMENTS IN THE MANAGEMENT OF THE RESOURCES OF COASTAL AREAS

5.1 General Trends

5.1 In recent years there has been a significant growth in the use of economic instruments (7) and present policy trends show 'that there is a great deal of interest in developing the use of existing excises on goods such as energy to take more account of environmental considerations. These considerations now play an important role in the design of tax systems in many Member countries' (8).

5.2 Economic instruments in practice are never applied in isolation but in combination with regulations. In some cases the main emphasis may be on economic instruments, as with water management in France and the Netherlands; or sulphur oxide and carbon taxes in Sweden (6).

5.3 Many taxes and charges are applied essentially for financial purposes, often to raise money to fund environmental protection measures. Their incentive effects are often relatively small, mainly because of the low level of taxes or charges, and are difficult to measure. One report states that there is far too little empirical evidence to arrive at a systematic ex-post evaluation of the significance of instruments as used in practice; much of the recommendations originate from incidental observations and sometimes even observation driven by intuitions (7).

5.4 There is no agreed and universally accepted taxonomy, in the literature or in practice, for economic instruments. They vary from country to country. The specific names/types used here, and also given in Appendix A, follow the taxonomy used in individual countries and adjusted to provide a degree of uniformity. For management purposes it is useful to present them according to the resources or sectoral activity they are applied to, as they are given below. The instruments listed have been used in coastal areas of Mediterranean and other coastal countries

(9). Where assessments were available on the efficacity of the instruments used they have been noted here.

5.2 Coastal Water Resources

5.2.1 Coastal waters

5.5 Management of coastal waters can be divided into the following functions: protection from direct discharges into coastal waters, allocation of coastal waters to different uses and the use of coastal wetlands.

5.6 *Protection from direct discharges*

Coastal waters are polluted from two types of direct pollution in the immediate vicinity of the shoreline: industrial discharges and urban household/commercial discharges. There are other sources of pollution generated further away in a watershed and by agricultural sources, but they are treated under their respective headings.

- Industrial discharges: Pollution charges are used to control direct discharges from industry. The objectives are to reduce the quantity and improve the quality; these are sometimes combined with water pricing aimed at reducing water use. Both are incentive instruments, but they produce significant revenues where charges/prices are set at an effective level. The problems are: (a) local authorities, trying to attract industry, are setting charges/prices too low; (b) it is not possible to impose them on existing, old industries, which are unable to change their technologies. Use of penalties on existing plants for excessive non-compliance with regulations is another instrument.

- Urban/commercial discharges: Development taxes are imposed on developers of new coastal suburbs and tourist complexes, which can not be connected to existing sewerage systems. This is usually a fund raising instrument to provide money for constructing the necessary treatment facilities. Alternatively performance bonds are imposed, repayable after the developer finds a suitable solution for the discharge. Elimination of subsidies for urban or touristic development along the immediate shore land area is rarely applied.

5.7 *Allocation of coastal waters to different uses*

Coastal waters are allocated, usually by the respective local authorities, for different purposes; some of these require specific water quality and therefore have to be protected from pollution; some uses can be combined, others require exclusive use. The main uses are: recreation, marinas, commercial harbours, aquaculture and exploitation of undersea bed. The allocation between different uses is normally through zoning according to a development plan. The allocation for individual uses is mostly through economic instruments.

- *recreation use* is usually provided free, but is controlled for safety purposes through zoning (swimmers, surfboard riders, boats); there are, however, many cases where the beach is leased for an annual charge to private entrepreneurs who charge fees to users;

- *marinas* are also leased for a long period or auctioned to private entrepreneurs who in turn sell or lease moorings to private individuals; in some cases local authorities construct the marina and sell or lease moorings; the fees charged are then used for environmental purposes (cleaning coastal waters and waste disposal);

- *commercial harbours* are normally leased to enterprises which are paying leases and fees as well as local taxes; these are all revenue raising activities and the money collected is normally used for environmental purposes; penalties are enforced for non-compliance with environmental regulations; user charges are imposed for discharging ballast water into facilities provided;

- *sites for aquaculture* are usually auctioned in open bidding; users are then required to pay annual fees for various services provided;

- *exploitation of seabed resources* is usually allocated through exploration licences in open bidding; subsequently, royalties are paid for mining minerals or extracting petrol; these monies are then collected either by central, regional or local governments according to legislation. Performance bonds are used to enforce compliance and to cover potential costs from accidents.

5.8 *Use of coastal wetlands*

Coastal wetlands are either preserved, or transformed for commercial purposes, and thereby lost or transformed, but replaced by another wetland;

- *sale of wetlands for commercial purposes is* through open bidding and the money is used for environmental purposes;

- *permits to transform wetlands for commercial purposes* is given for fee, but the permit holder is required to provide funds for the creation of another wetland.

5.2.2 Coastal stretch/seashore

5.9 The coastal stretch consists of a multitude of resources, some of which are exploited commercially but all of them could be subject to substantial man-made alterations and need protection. These resources include: inundation/intertidal zone, beaches, coastal dunes, historical and archaeological sites, visual coastal sites.

5.10 *Inundation/intertidal zone*

The inundation/intertidal zone can be used only part of the time for beach recreation or anchoring boats and is normally protected by zoning from substantial alterations. However, there were cases of local authorities building protective dams, reclaiming these zones and then leasing the reclaimed area for commercial purposes, using the monies collected to cover part of capital costs and maintenance. In addition it is normal procedure to impose a development tax on reclaimed land, either to deter any further development, or to cover the cost of environmental infrastructure.

5.11 *Protection of beach areas*

Normally beach areas are protected by zoning laws and no construction is allowed on the beach itself. To protect against overcrowding on the beach, two types of economic instruments are employed: (a) leasing for an annual fee to private contractors, who limit the use by charging an entry fee; (b) imposition of parking fees on the beach or nearby areas.

5.12 *Coastal dunes*

Coastal dune systems are of greater ecological interest and are highly sensitive to damage by human activities. Their survival now depends on maintaining a plentiful supply of sand, and on the vegetation which enables its stabilization (1). Sand mining is often allowed and a charge is imposed according to the quantity mined. Unfortunately, the charges imposed fail to incorporate the high environmental value of the sand dunes and they are therefore overexploited.

5.13 *Archaeological and historical sites*

The coastal zone is rich in the remains of civilization, including remnants of maritime activities and coastal activities. Underwater remains include wrecks of ships, submerged harbours and sunken cities. On land, coastal civilizations have left monuments of their built structures, including harbours and urban centres. Apart from their intrinsic values they are important tourist attractions and visitor fees are charged for their use. These fees and related revenues from the sale of touristic memorabilia cover their maintenance in part.

5.14 *Visual coastal lines*

Visual coastal resources are those images which became valuable through man's visual perception of them: contrast between land and water areas, multiple topographic and environmental conditions, vividness generated by the dynamic movements of waves, vibrant colours. These aesthetic values are captured to some degree in taxes imposed on property values with specific sea views, etc. Other specific areas with exceptional natural beauty have restricted public access through the imposition of fees.

5.3 Marine Resources

5.15 The marine resources that require protection are fish life and marine vegetation. Both of them are endangered by pollution and the fish population from overfishing. The many measures undertaken against pollution are dealt with under different headings concerning the sources of pollution. Here the main concern is with the protection of the fish population from overfishing.

Protection of the fish population

5.16 It is not possible to differentiate between measures taken concerning deep-sea fishing, fishing in coastal waters or fishing in coastal rivers. There is a migratory fish population and the measures taken are implemented by the same authorities and the boats are controlled in the same harbours:

- *Commercial fishing* is charged licence fees and there are taxes on the value of the catches. In addition, to protect the fish population, quotas are imposed on the quantity of certain types of fish and the quotas are auctioned; in some cases these quotas are traded in an open market.

- *Sport fishing* is regulated through a number of licences and fees. In addition, there are licence fees to be paid both on commercial and sport fishing vessels.

5.4 Inland Water Resources

5.17 Coastal waters are the receptacles for inland waters and a large proportion of coastal waters pollution is received from rivers and catchment areas. It is often the case that more stringent pollution measures are imposed in catchment areas to protect coastal waters, particularly bays and lagoons (e.g. Bay of Izmir, or the Lagoon of Venice). One of the main objectives of integrated coastal area management is to treat the main catchment areas within a certain distance of the coast (up to 100 kilometres of the coast) as part of coastal area. Consequently, the economic instruments used for the protection and pollution control of these catchment areas are instruments for the protection of the coast.

5.18 The usual regulatory instruments concerning direct discharges are, in many areas, supplemented by effluent charges which provide incentives for polluters to seek and use new pollution-abatement technologies and management practices. The revenues collected are used to install public treatment plants or provide subsidies for other plants. In other cases, fees are imposed to cover the cost of transferring effluents to deep sea outfalls. Other expenditures in catchment areas, such as sediments traps and diversion drains, are financed from mandatory developer contributions.

5.19 Water pricing is used in many areas for efficient water allocation, to reduce water use and pollution discharge. Tradeable permits have been seldom employed for direct abstraction of water from reservoirs, rivers and underground sources. Tax concessions are given to landowners for investment on soil conservation. On the other hand special taxes have also been used to prevent sale of land in water protection zones. In some cases landowners were compensated for the limitations imposed on the use of their land in watercatchment areas. Developers contributions are used to finance works for water supply, sewerage and drainage.

5.5 Land Use

5.20 Land resources in the vicinity of the coastal stretch are the most valuable resources of the coastal area. They have many alternative uses, most of which are exclusive and some of them are non-reconcilable (e.g. urban and industrial development). The main types of land use are: urban, industrial, agricultural, forestry and conservation areas. The main instrument of land use policy is land use planning and zoning. Economic instruments are always employed in conjunction with land zoning.

Urban use

5.21 Concerning constructions for urban living, commerce and hotel establishments, property taxes are used mainly to obtain revenues to provide essential services. The high market value of coastal construction makes it possible to obtain revenues that can provide appropriate infrastructure. Development taxes are often imposed on hotel establishments. Heavy penalties are also imposed on constructions not in conformity with the construction permit or regulations.

Industrial use

5.22 In this field, contradictory economic instruments can be found. Local governments provide subsidies to attract industry, and also impose environmental taxes to raise money for infrastructure.

Agricultural use and forestry

5.23 Governments in general subsidize agricultural activities and thereby help to maintain the diversity of coastal land but at the same time also promote polluting activities. In some areas a special tax is imposed on fertilizer use to reduce pollution. To discourage conversion of agricultural land to urban/industrial uses a special income tax is levied on windfall gains from sale of agricultural land. The maintenance of forests is generally encouraged with similar instruments.

Natural parks

5.24 Natural parks are of great environmental importance for coastal areas and today governments in general encourage their conservation. Tax benefits are provided for private purchases for conservation. Governments themselves contribute funds for purchasing land for conservation. Fees are imposed on visitors to raise funds and to limit use. Special charges are imposed for limited construction in some natural parks.

5.6 Sectoral Activities

5.25 Two types of sectoral activities relevant to coastal areas which could have severe environmental impacts and are heavy users of coastal resources are transport and tourism; often these two activities are closely connected.

Transport

5.26 The transport sector is one of the most extensively taxed sectors and most of these taxes, although not imposed directly for environmental purposes, have environmental impacts. Furthermore, the majority of these taxes and charges are used on a national basis and not explicitly for coastal areas. However, in cases where regional differences are allowed, there appear to be higher taxes/charges in the coastal regions than elsewhere.

5.27 Basically two types of taxes can be found in the transport sector: taxes on motor vehicles and taxes on motor fuels. On motor vehicles one can differentiate between taxes on the sale and initial registration and annual and recurrent taxes on private motor vehicles. These include sales tax or VAT, import duty, stamp duty on registration, special tax on heavy vehicles, special tax on diesel vehicles, kilometre tax, gas guzzler excise tax, charge for inspection and operation licence. There are numerous taxes on motor fuels some of which are directly environment oriented: excise duty on petrol and diesel fuels, oil pollution fees, preferential tax on unleaded petrol, carbon dioxide tax.

5.28 More directly environment related are subsidies provided by local authorities for public transport to minimise the use of private vehicles. They include low fares or free transport along the beach front; encouragement of competition by granting licences to a number of companies between the local urban areas along seashore; heavy parking fees and penalties in high density coastal zones.

Tourism

5.29 The discussion in this section refers to tourism in general; specific touristic activities such as boating, fishing, etc. and transport used by tourists have been already discussed separately. Tourism is one of the major industries of coastal areas and often the main driving force behind coastal development. Governments at local, regional and central levels are encouraging the growth of tourism and at the same time have to minimize the detrimental environmental effects of tourism. In some cases, where it was feasible, the local authorities have decided to promote tourism in preference to industrial development and subsidised tourism, and thereby protect the environment from the impact of industry. This approach is preferred in areas which possess particular attributes for eco-tourism which is incompatible with industry.

5.30 Most local governments impose tourism taxes to collect revenues for tourism related infrastructure e.g. water supply and sewerage treatment. Often two types of taxes are employed: one based on tourist capacity (number of beds), the other on the number of tourists' nights spent in the establishment. There are also special charges for domestic refuse disposal. Large touristic developments are either charged a special development tax for sewerage treatment facilities, or receive special tax depreciation for their investment in their own sewerage treatment plants. Similarly, special tax depreciation is available for investment in solar energy facilities.

6. SUMMARY AND CONCLUSIONS

6.1 This paper presents the proposal that integrated coastal management is essential to ensure sustainable development of coastal resources. Economic instruments are the most efficient tools for integrated environmental and economic management and they can play an important role in the integrated management of coastal areas.

6.2 Over the last decade the use of economic instruments in general environmental management has increased in intensity, variety and the extent of application.

6.3 In coastal areas, economic instruments have also found wide application, covering all types of resources and activities and employing a range of instruments. In a number of areas, such as coastal waters and marine resources, their use is unique; in others, such as land and transport, they have been applied in similar ways to other geographic areas.

6.4 Economic instruments in coastal areas have usually been employed in conjunction with regulatory instruments and, partly for this reason, it is not possible to specify the importance of their allocative effects and their impact on the use of coastal resources. On the other hand, they have become a major source of revenue and make a major contribution to the financing of environmental expenditures.

6.5 In some areas, such as industry and agriculture, there is a conflict between economic instruments, because the measures used to promote economic activity, namely subsidies, are counteracting the measures to protect the environment, taxes and charges. Here, economic instruments demonstrate in a spectacular way the failure of governmental policies and lack of integration. This is a frequent occurrence in the development of resource rich coastal areas with highly fragile environments.

6.6 One lesson that can be drawn from the experience with economic instruments so far is that there is ample scope for employing them, and that they can provide revenues for environmental protection. The question that remains to be answered is how efficient are they in allocating natural and environmental resources, and under what conditions can they be used most effectively.

6.7 Concerning institutional aspects, economic instruments appear to have been more frequently and perhaps more effectively employed where local authorities had the initiative to apply them and the power to retain most of the revenue. At the same time, there is a need for a special institutional framework for integrated coastal area management, which can effectively employ and use economic instruments.

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The information on the use of economic instruments in coastal area has been obtained from a large number of country reports, most of them unpublished, and from discussions with governmental representatives including those from local governments.

APPENDIX A

Principal Types of Economic Instruments (4)

The following major kinds of economic instruments can and are used for coastal area management purposes:

Charges, prices and taxes

effluent charges: charges paid on discharges into the environment, based on the quantity and/or quality of discharges;

resource prices: prices paid for renewable or non-renewable natural resources reflecting the cost of provision, scarcity, stock depletion and environmental costs;

user charges: charges paid reflecting the cost of provision and management of facilities such as parks, beach maintenance, car parking, sewage waste disposal;

product charges: charges included in the price of products in the production, consumption or disposal phase, based on product characteristics or the product itself;

administrative charges: charges paid for services; for instance, registration of commercial fishing licences and enforcement of regulations;

tax differentiation: tax measures that lead to more favourable prices for environmentally friendly products; for example, tax differentiation between leaded and unleaded fuel.

Market creation

tradeable permits or quotas: resource use rights are established and allocated in conjunction with regulations that generally establish a limit on resource use or emissions. A market develops in surplus permits or quotas, which are tradeable between resource users.

Other incentives

deposit-refund systems: an incentive to encourage the reduction of waste, raw material and energy consumption whereby a deposit is refunded when the product (beverage containers, for example) is returned to the appropriate agent or other conditions are satisfied;

subsidies: various forms of financial assistance (cash payments, tax relief, accelerated depreciation on capital equipment and so on) can be used to encourage reductions in pollution or to finance measures necessary to reduce environmental degradation;

enforcement incentives: non-compliance fees penalize polluters that exceed prescribed standards. Performance bonds are payable to authorities under a licence granted to the developer and are returned upon satisfactory performance.

INDUSTRY/ENERGY

by

Professor Grigoris Kafkalas

INDUSTRY AND ENERGY ISSUES AND INTEGRATED SPATIAL PLANNING

ABSTRACT

The report attempts to identify both the general context and the major factors for the promotion of sustainable development. Special emphasis is put upon industry and energy production and consumption patterns at the coastal areas. The report develops an argument in three steps for the need to adopt an integrated spatial planning approach. First, it examines the general context and the conceptual framework of sustainability. Second it focuses upon the situation at the coastal areas. Finally, it deals with both existing policy frameworks and the outline of an integrated approach for sustainable spatial planning. Instead of a conclusion and as an example of agendas for the future, there are some comments on the notion of environmental space and the EU approach to the issue of sustainable development.

1. Sustainable development: the general context

1.1. Models of development: conceptual framework, patterns of growth and prospects

When *The limits to growth* was published in the early 70's there was still an atmosphere of super-power competition and nuclear deterrence and despite its many variations the dominant model for economic development was that of a mass production and mass consumption economy. The major fears at that time were those of an imminent nuclear catastrophe and a foreseeable exhaustion of non-renewable natural resources.

Twenty years later, after a series of severe energy crises and a long lasting economic restructuring, the situation has changed significantly. Competitive industrial production has shifted from mass production and scale economies to various flexible specialization models based on technological innovation and favouring economies of scope and customized quality products. The collapse of the planned economies and the dismantling of the Soviet Union brought the end of the Cold War and the politics of nuclear deterrence. In the current atmosphere, the major fears are those social exclusion, ethnic and religious wars, the AIDS epidemic, the greenhouse effect leading to climatic change and various forms of environmental degradation on a global scale.

How have we reached this stage? It is argued that the prevailing model of development for a long period of time was based upon the *inefficient and exploitative use of the two major resources: human labour and the environment*. The priority upon purely economic cost reduction and cutthroat competition for market expansion led to the massive replacement of labour by capital and technology and the over-exploitation of natural resources.

The outcomes of these trends were, on the one hand, the undermining of the integrity of social life through unemployment and social exclusion, leading to extreme social pressures and, on the other hand, the exponential increase of the use of energy and other resources that have

caused environmental degradation not only near places of production and consumption, but on a global scale.

It seems therefore necessary to design and promote a different model of development that makes possible both continuous economic growth, providing work for the unemployed, and also reduction of the use of energy and the consumption of natural resources by industry and the final consumer. This might sound impossible, but the cost of not doing so is even more unthinkable.

As it has been stressed in the White Book on Development, Employment and Competitiveness for the Transition to the 21st century (CEC 1993) during the last two decades it became clear that there was no balanced correspondence between the scarcity of a natural resource and its consumption. This makes it clear that sustainability is not an area that could be left to the invisible hand of the market and pricing system alone. The White Book underlines the reasons why these trends should not be allowed to continue:

- the cost of environmental recovery is getting higher
- the degradation of environment undermines long term welfare
- the generalization of the standards of production and consumption now prevailing in the developed world will multiply by ten the use of natural resources, a fact that suggests the possibility of severe international tensions
- some forms of pollution (e.g. CO_2 emissions) are a threat for the ecological balance of the entire planet

The present situation implies huge losses of welfare. For example, the cost of inefficient transport infrastructure in the developed countries (accidents, pollution, congestion, etc.) is calculated to be around the range of 3 or 4% of their GDP. Even more important is the fact that certain consequences of the use of fossil fuels and nuclear energy threaten the very existence of life itself (e.g. global warming and the resulting change of climate, increase of health hazards due to nuclear waste and nuclear accidents, etc.). In the end it seems that an increasingly greater part of what was considered to be economic growth represents in fact a cost that diminishes the welfare of our societies.

In response to these trends, by the early 80s agencies and institutions such as the World Conservation Union (IUCN), the United Nations Environment Program (UNEP) and the World Wide Fund for Nature (WWF) were already pioneering the idea of sustainable development as a comprehensive response to our social, political, economic and environmental problems. In a joint effort the above agencies have published a book on *World Conservation Strategy: Living Resource Conservation for Sustainable Development*, promoting the idea that there is no future for human societies outside the conservation of natural resources and maintenance of the biodiversity.

Such concerns have guided the principles and the attitudes also prevailing in the late 80's and expressed in the book *Our Common Future* (1987), known also as the Brundland report, published by the World Commission on Environment and Development. And more recently, the Rio Summit of UNCED marked a turning point of the official government views and attitudes by

recognizing the need for a global commitment to a model of sustainable development. These views were expressed in the Rio declaration and published in the series of Agenda 21 documents.

It is important to notice that these developments have moved far away from the catastrophology and the zero growth mood of the Club of Rome. Instead, the participants at the Rio Summit have adopted a positive approach for sustainable forms of development seen as consisting of three major components: preservation of ecosystems, preservation of biodiversity, and the sustainable use of resources taking into account future needs. At the same time, sustainable development is to be pursued in ways that contribute to the fight against poverty, and remain compatible with social justice and the equitable treatment of all countries.

It may be practically impossible to imagine a general purpose model of sustainable development, equally suitable to the needs of both developed and developing worlds. Nevertheless, there is still much hope for the gradual adoption of a series of steps leading to an acceptable and satisfactory global solution that combines the need for coordinated action with adequate flexibility, in order to allow for the specific conditions prevailing in each country.

1.2. Development and sustainability: a realistic utopia?

In 1991 the same agencies that in 1980 published the *World Conservation Strategy*, published a new book with the title *Caring for the Earth : A Strategy for Sustainable Living.* I should like to use this as an example of the prospects for the success of the sustainability project. This book epitomizes the kind of thinking that led to the Rio declaration in June 1992.

The core of the approach lies in the view that sustainable development combines economic growth with the betterment of living conditions and the preservation of biodiversity and natural productivity. Sustainable development implies harmonization and symbiosis between various communities and with nature in general. The argument has three parts: principles for sustainable living; actions for sustainable living; and implementation and follow-up mechanisms.

Sustainable development is based upon three principles. The first refers to the need for satisfactory living conditions of present and future generations. The second, underlines the dependence of human societies upon natural resources, the degradation of which threatens their survival. Finally, the maintenance of human society is dependent upon sustainable living and the appropriate allocation of natural resources.

In an effort to provide realistic and pragmatic alternatives, there is a differentiation of the content and the meaning of sustainable living between the developed and the developing countries. The former have generally achieved a high level of development and should now turn to the extension of the benefits to all their citizens as well as to the assistance of the developing world to achieve real convergence. At the same time they should diminish energy and natural resource consumption and cut down pollutants of the environment. This is a very difficult task

that requires difficult and innovative political decisions and radical restructuring of our conventional priorities, in order to lower the present high levels of consumption without loss of employment and welfare. The developing countries on the other hand, should pursue higher rates of growth but with a grater part of their GDP devoted to the protection of the environment.

The implementation of policies for sustainable living requires regional and international cooperation on a huge scale, the acceptance by the most powerful economies of the equity principle, and the recognition of their interdependence with their less developed partners within a global system. The actual responsibility for the realization of the ideal of sustainable living lies with the local and territorial communities at different spatial levels. This refers to any coherent whole from a municipality to an ethnic group or a geographical area that could undertake the realization of the principles of sustainability. But the achievement of sustainable development is not a self-evident goal. It will need many reforms and extensive institutional restructuring. And lying somewhere between the local initiatives and the global coordination of policies, national governments should abandon their traditional plans for development and formulate national strategies for sustainable development. The adoption of such plans could become the vehicle through which, what until now seems to be a utopia, might start to become a realistic option for the foreseeable future.

Indeed, after the Rio Summit, the multiplication of experimentation with national strategies for sustainable development, and even the official adoption of such plans as guidelines for political and economic choices in an increasing number of countries, justify a more optimistic outlook, at least in so far as political consensus is concerned.

2. The environmental situation at the coastal areas

2.1 The problem: over-concentration in the land, pollution in the seas

Sustainable development requires that the use of land and natural resources not follow an intensive logic independently of the capacity of the environment. Accordingly, spatial planning should take into account environmental restrictions and regulations. Urban and regional planning should include the principle of maintenance of ecosystems of which human settlements and other activities are an integral part.

The above is particularly crucial for coastal areas which represent extremely sensitive and intensively used ecosystems. Though coastal areas can be defined in many different ways, we should think of the various definitions as being complementary, rather than mutually exclusive. For example, in document Europe 2000 (CEC 1991) different definitions are offered as to what constitutes a coastal area: a) a certain zone (e.g. a 100 metre-wide strip around the coast), b) the area of the location of activities directly connected with the sea estimated to extent 5 km inland, c) the area consisting of the administrative boundaries of coastal communities and territorial waters, d) the first kilometre of land from the shore that is generally considered to determine the quality of marine resources, etc.

Whatever the definition adopted, the attractiveness and the productivity of coastal areas are usually very high and tend to attract population and human activities. Thus, if we take the boundary of 60 km from the shoreline, we find more than half of the world's population. It is projected that this population might be doubled within the next 20-30 years. There is therefore an urgent need for coordinated efforts to promote sustainability at the coastal areas.

Already, many marine and land ecosystems around coastal zones are suffering from the concentration of human activities. Environmental degradation is caused by the difficulty to control the pressures for intensive use of land. Such pressures stem from activities such as housing, industrial, commercial, tourist, and agricultural activities and resulting emissions and waste. The pollutants entering the sea waters from such inland activities are increasing rapidly, and high priority should be given to the protection of the ecosystems from the uncontrollable increase of the polluting substances.

There are significant differences between the various coastal areas regarding environmental saturation and priorities for protective measures. For example, areas with high population density, and high rates of growth and per capita consumption of resources or areas around closed seas with little water circulation require immediate action. Also high priority for protective action should be given to areas where land use conflicts put pressure on natural resources (e.g. use of water) and also on areas that are saturated and have already suffered significant environmental damage.

It was stated that degradation of the marine environment can result from a wide range of causes, and that land-based sources contribute around 70 per cent of marine pollution, while maritime transport and dumping-at-sea activities contribute around 10 per cent each. (Agenda 21, chapter 17, *Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources*). Furthermore, environmental degradation of the marine environment is also caused by shipping and other sea-based activities. Approximately 600,000 tons of oil enter the oceans each year as a result of normal shipping operations, accidents and illegal discharges. However it seems that the nature and extent of environmental impacts from offshore oil exploration and production activities generally account for a very small proportion of marine pollution.

2.2 Industry: the changing locational factors

In so far as industry is concerned, the most important aspect to be taken into account in relation to the promotion of sustainability is the need to study and understand, on the one hand, the prevailing patterns of location, and on the other, the main features and consequences of the ongoing restructuring of the productive processes for locational change.

Industry, as many analysts have shown, see for example Storper and Scott (1986: 5-6), has entered a period of experimentation and competitive restructuring that affects both the choice of location and production process. In both traditional and modern branches there are different forms of organizational and locational structures (e.g. networking, vertical and horizontal integration, diversification, subcontracting, etc.). It is still unclear what model will prevail in the

near future. But whatever the outcome it will certainly affect the national and international patterns of production. And these in turn will affect the relationship between industry and environment as for example the handling of industrial waste and the shift towards environment friendly products.

There is indeed a wide range of changes taking place within industrial branches and even in specific categories of firms that can contribute directly and/or indirectly to sustainability. Such changes can be achieved through the introduction of more efficient production processes, preventive strategies, and cleaner production technologies and procedures throughout the product life cycle. The means by which environmental management can become an integral part of the functioning of industry include technological improvements and innovation as well as their transfer through partnership and cooperation. Detailed regulatory frameworks effected under the supervision of public authorities and/or free market mechanisms are also important in relation to the above issues. Depending on the direction of change, all the above could become important instruments for the promotion of sustainability by industry.

If we now turn more specifically to the environmental impact of industry in coastal areas the first priority is to focus upon the pollution of sea waters by industrial waste. But the coastal ecosystem involves more than that. It involves all other natural depositories such as the atmosphere, the land, and the water resources. Furthermore, industry is not an isolated activity, but often is closely interwoven with settlement expansion and a wide range of other economic activities. In Greece for example, much industrial development has been developed alongside coastal zones and close to major urban areas. This in turn triggers a series of land use conflicts that involve many other activities indirectly related to industry, such as commerce and recreation.

Thus, when we look for the impact of industry upon coastal areas we should look to much more than industrial waste, and expand our study to include not only all other directly and indirectly related activities, but also the general conditions, quality and intensity of infrastructure in the area. This means, to provide an example, that the direct environmental impact of a refinery is less important for the environmental conditions in a coastal area than the network of its operational requirements (port facilities for tankers, road and warehouse facilities for tracks, etc.). This approach to the problems created by industry is important because it will show that even industries considered to be clean may have operational requirements that add to the environmental burden of a coastal area. In fact, such calculations are necessary for the promotion of sustainable development, as the latter internalizes the otherwise external environmental cost of production and consumption in a given area.

2.3. Energy: how we can handle it?

It is important to understand issues associated with the use of energy in close relationship with the models of development and the patterns of production and consumption prevailing in the various countries. There is no doubt that most of the current supply of energy is mainly based on fossil fuels, while nuclear energy is mainly used for electricity generation. From the above fact stem many of the problems faced by contemporary world.

The changing of the global energy system is necessary in order to effectively tackle problems such as the risks of a greenhouse effect. In fact, the latter and the negative consequences associated with it constitute the main energy-related problem. It is projected that the world temperature will increase gradually up to 3 degrees by the end of the next century if there is no reversal of current trends.

The reversal of current trends involves social and technological shifts of a dramatic nature. A prominent role in changing current trends could be played by using renewable energy sources. This shift will certainly increase the intensity of land use, as it has been calculated that for solar, wind and biomass electric systems land requirements are significantly higher than those related to the use of coal, oil or natural gas.

But energy is interwoven with the social and economic life of all societies. For this reason changing the energy system is not an easy task. Therefore there is a need for parallel and complementary solutions providing efficiency in energy production, transmission, distribution and consumption. These solutions should take into account the full cost of energy consumption, in the sense that it includes the cost of assuring the sustainability of life for the future generations on earth. This means to adapt taxation policies in order to favour energy supplies with as little CO_2 emissions as possible. Instead, many countries, for quite different political and economic reasons, discriminate against such clean energy forms (e.g. by subsidizing more dirty ones).

In any case, it should be made clear that more reductions of dirty energy use could be achieved by appropriate changes in consuming sectors (e.g. housing, transport, appliances, industry, etc.) than by reductions caused by technological and other changes in the energy sector *per se*. As has been suggested, during the last twenty years, growing mobility and income for consumption for pleasure have increased energy use at least as much as efficiency improvements have reduced it (Schipper 1996).

In the Agenda 21 (Chapter 9) the program area for energy reduction is defined, taking into account the different needs and potentialities of developed and developing countries as follows. “The basic and ultimate objective of this program area is to reduce adverse effects on the atmosphere from the energy sector by promoting policies or programs, as appropriate, to increase the contribution of environmentally safe and sound and cost effective energy systems, particularly new and renewable ones, through less polluting and more efficient energy production, transmission, distribution and use. This objective should reflect the need for equity, adequate energy supplies and increasing energy consumption in developing countries, and the need to take into consideration the situations of countries that are highly dependent on income generated from the production, processing and export, and/or consumption of fossil fuels and associated energy-intensive products and/or the use of fossil fuels for which countries have serious difficulties in switching to alternatives, and of countries highly vulnerable to adverse effects of climate change”.

According to the Program of the European Community for the Environment published in the Official Journal (C138/17.5.93) the role of energy is central to the achievement of Sustainable Development. The projections for the use of energy by the middle of the next century show enormous increase, not only according to the ‘business as usual’ conventional scenario

but also under a high efficiency scenario, with serious consequences upon the environment and the social, economic and political tensions between the various countries. The patterns of energy use by the developing countries and the formerly planned economies will play a decisive role because we expect the higher rates of growth there.

The necessary steps for the sustainable use of energy include at least three major components or fronts: increased energy efficiency, changing consumption patterns, and a shift to renewable supplies of energy.

3. Policy responses and the need for integrated spatial planning

3.1 General principles

The definition of environmental problems requires the study of sectoral activities (agriculture, industry, tourism, transport, energy, settlements, consumption) at the various geographical levels (local, regional, national, water systems). Each specific form of environmental problem demands, depending on the source, the substances and the factors affected, particular treatment in relation to its monitoring and confrontation strategies.

An integrated approach defines environmental problems at each geographical level and sets general aims and specific objectives and targets for each category of problems. Furthermore, it defines the agents and actors who will undertake their implementation.

For example, if transport is a major local problem, then measurements of specific indicators (e.g. noise levels, housing distance from the roads, etc.,) should be made, acceptable limits should be defined and definite roles should be assigned to the various actors (e.g. local government, interest groups, transport companies, etc.). In all cases, what we wish to achieve, when it is expected to be achieved and who is responsible for the appropriate actions should be made clear.

This integrated approach is not a self-evident goal but should be politically and institutionally supported. A necessary element for the success of such plans is the existence of a strong regulatory framework supported by institutional mechanisms for the monitoring, control and commitment of all the actors to the specified targets.

However, it is also important to involve all interested parties, whether public bodies, private concerns or non-governmental organizations. In this manner it is expected that preventive and voluntary measures strengthened by the introduction of incentives to produce environmentally friendly products will gradually replace the ex post implementation of controls and penalties.

At the core of an integrated approach lies the coordination of all agencies involved with environmental issues and the completion of a series of compatible plans at the various sectoral

and geographical levels. It is truly a combination of sectoral and geographical components of sustainable development within a comprehensive planning framework.

The first step is the decision on concrete environmental targets. Without specific targets it is impossible to evaluate the appropriateness and the effectiveness of the proposed plans and the resulting allocation of environmental costs and benefits. The costs should include indicators on items such as:

- reduction of specific pollutants
- reduction of the burden for specific natural receivers
- reduction of specific environmental hazards
- increase of environmental capacity for specific indicators

Ultimately, the quality of the environment is the combination of many different factors and processes that have a cumulative impact upon specific geographical areas. The reference to a specific geographical level is indispensable for any understanding of sustainability. There is, therefore, an issue of geographical scaling for any environmental plan. For example the noise from the operation of a factory is a local problem, while the greenhouse effect has a global dimension. Furthermore, many environmental elements cut across a number of geographical scales, e.g. emissions of CO_2 might become simultaneously a local, a national and a global problem. Therefore, for any particular problem and area we should define the appropriate level for the promotion of sustainability and it is quite probable that different spatial levels will require differential treatment.

In this manner we can fix different limits for each geographical level in order to take into account the synergies, the complementarities and the cumulative effects of both polluting sources and environmental capacities. In order to effectively internalize all environmental costs within a sustainable approach, it is necessary to apply the principle of susbsidiarity in such a way that decisions and actions for each category of problem are taken at the lowest possible level. This is important, because participation and consensus as well as joint responsibility lie at the centre of the problems of development and land use planning for the promotion of sustainable development.

3.2 The social actors

Within the integrated approach there is a need for the various social actors to become involved with specialized roles and areas of responsibility. The following list provides a synoptic account of the major actors and their possible involvement and actual capacities in relation to the promotion of an integrated plan for sustainable development.

The agents of implementation

The examination of the detailed conditions for the implementation of the plans is necessary for the achievement of its targets. Thus the preparation of a plan should include procedures for the inclusion of the views and the interests of those actors and agents that are expected to become involved in the implementation process.

The entrepreneurs

The entrepreneurs representing industrial activity in a region are a central target group for sustainable plans, and particular duties should be allocated to them by the plan. There is a need to have their consensus, the terms of which constitute an indispensable preparatory stage of the plan.

The employees

Workers and employees are involved because environmental upgrading of the workplace is very important, and also because any restructuring caused by environmental considerations (e.g. modernization, relocation, etc.) affects their working conditions and contractual relationships. The needs of the employees should be taken into account whenever there is a decision made concerning the environmental targets of an area.

Citizens and non-governmental organizations

The views and interests of the citizens in any area lie at the heart of any plan or decision concerning the sustainable management of activities. Their problems, difficulties and prospects should be studied in advance. The inclusion of targets that reflect the views of a majority of the citizens is very important, for the implementation of the plan. Equally important is the support by non-governmental organizations with environmental interests (e.g. voluntary associations, pressure groups, etc.). The plan should consider the possibility of integrating their views at an early stage.

Administration and local government

Many researchers and policy makers have shown that the overlapping of administrative capacities and various decision tiers and departments constitutes a barrier to the effective environmental management of resources and activities. The integrated sustainable plan should take into account the actions and the interests of all administrative tiers, with specific reference to the distinctions between central, regional and local as well as between state agencies and local government. The plan should take the compatibility, coordination and complementarity of the various decision making bodies and departments into account in order to guarantee maximum efficiency and avoid bureaucratic bottlenecks at the implementation stage.

3.3 Institutional mechanisms

Analysis of the procedures, mechanisms and agents for the location of industrial activities and protection of the environment allows for the identification of many problems like the inadequacy of the administrative apparatus, neglect of environmental factors in the organization of industrial zones, or permit grant in for individual firms, ineffectual monitoring and control mechanisms, etc.

The above-mentioned problems are more acute in the case of industrial concentration at the coastal regions for the following reasons:

- the co-existence of industrial and other activities (e.g. construction, tourism, etc.) create specific demands for integrated management of the resulting competition over land and other resources;

- the usually greater fragmentation of administrative responsibilities and jurisdiction prevailing at the coastal areas, with many overlapping rules and regulations (for fishing, marine resources, water quality, navigation, seashore zone activities, etc.) in addition to those for other areas;

- the fierce competition for highly profitable land (housing, tourism, high productivity agriculture) confuse the environmental concerns for sustainability with non-industrial interests for intensive use of the coastal areas;

- finally, the lack of a comprehensive framework for the management of the coastal areas, where the environmental targets are combined with targets for the maintenance of employment and the improvement of productivity;

- the existence of many restrictive policies associated with mechanisms for the provision of land permits that often create unfair competition situations due to unequal treatment.

Thus, in the case of coastal areas it is clear what is necessary for the promotion of sustainable development: the formulation of comprehensive institutional frameworks for regional development planning that combine social, environmental and economic considerations within either the same or a series of compatible plans.

It is a serious weakness that so far environmental legislation does not provide comprehensive answers to the complex problems of sustainable development. Instead, it focuses upon detailed technical prescriptions and administrative measures of controls and does not include a comprehensive sectoral and geographical mechanism where the various components of sustainable development could be related in a consistent manner.

As was mentioned, coastal areas constitute a crucial category due to their attraction for many human activities and their environmental sensitivity. The relationships between atmosphere, sea water and land, create the preconditions for the development of many important ecological processes. Besides, coastal areas are important for many economic and other human activities such as housing, recreation, sea-transport, fishing , etc. Thus, there is a need for the preparation of special plans for the management of the emerging complex relationships between the various human and ecological processes.

The difficulty to define geographical boundaries for a plan for sustainable management of a coastal area should be seen as part of the same problem. A systematic approach can start by detailed analysis of the interactions between the land and marine ecosystems, in order to solve the problem of area definition for the specific case. However, due to extensive overlapping and continuation of the ecosystems, it is not always easy to provide an operationally useful definition.

Thus, for example, it is possible to define the coastal area in the broadest sense to include natural basins, or in a very narrow sense (e.g. a narrow seashore line) or even in an intermediate way that is appropriate for the solving of particular problems such as land use permits. The adoption of any one definition might be useful for specific categories of problems, but may create problems for an integrated approach of both environmental and development issues within a framework of sustainability. It is therefore very important to make the choice of the appropriate definition of a coastal area an integral part of our plans.

In all cases we should take into account the possibility of integrating all the existing institutional capabilities, as well as the mobilization and the social consensus of the interested parties.

This report strongly supports the idea that the best solution to the promotion of sustainable development is provided by the adoption of an integrated approach that combines sectoral and geographical perspectives in a non-directive dynamic plan of a preventive nature.

4. New developments and agendas for the future

In the place of conclusions we should like to refer briefly to two approaches to the problem of sustainable development that in my view epitomize the kind of issues that we will have to include in our agendas in the immediate future.

4.1 The ideal of an environmental space approach

The first is the notion of environmental space as expressed in the report “Towards Sustainable Europe; the Study” (Spangenberg 1995). It made clear from the very beginning that “as long as rich countries continue to consume a disproportionately large amount of the earth's natural riches per capita, developing countries also have that right.”. But if all exercise this right, then it becomes clear that environmental considerations are closely linked with issues of resource allocation and distribution. In 1992, the Friends of the Earth Netherlands published the 'Action Plan Sustainable Netherlands' where the notion of environmental space was used in order to implement the principles of sustainable development with a time horizon extending to the year 2010. The main components of this concept are the following:

1. Environmental space is quantifiable and there is a limited amount of use for each resource if sustainability is to be achieved (e.g. permissible CO_2 emissions).

2. Equity principle according to which the use of resources in the rich countries must be cut back significantly (for example the world average of the environmental space for energy is calculated to be 1.7 tons of CO_2 per capita per year while a country like the Netherlands is emitting 11 tons per capita per year).

3. Social impacts are expected on the grounds that while democracy and solidarity are the core elements of a socially and environmentally sound market based economy, transparency and public participation are considered crucial elements of a sustainable society.

4. Precautionary principle. Unjustifiable risks should be avoided.

5. Proximity principle. Environmental problems should be solved as near to their source as possible.

It is possible on the basis of the above principles to proceed with calculations of reductions that should be made in the use of resources, their reallocation and the necessary restructuring of human activities. The democratic principle allows for the same degree of development in a country, but environmental space limits determine the reallocation that is needed for its realization. This means that in order to guarantee a standard of living close to that of the developed areas, economic activities should be based more on efficient use of a limited amount of resources, instead of being based on the increasing use of resources and energy.

4.2 The EU pragmatic approach

The European Commission has adopted some very advanced attitudes in the White Book for the Development, Competitiveness and Employment for the transition to the 21st century where it was recognized that the present model of development has unacceptable consequences for the citizens of the European Union.

The proposed policies should include concrete measures for a) the reduction of pollution through the reversal of its relationship with growth, and b) the general betterment of the quality of life including the protection of nature, the landscape and the built environment. The necessary restriction of consumption levels is associated with the provision of a better collective quality of life and the promotion of new and attractive job places in locally coherent communities.

The new model of development demands the coordination of actions of many countries while the internal market provides the framework for the sectoral approach to problems and policies. It is important to stress that whatever the actual commitments undertaken by the member countries, the Maastricht Treaty explicitly recognizes the need to base the new model of development upon the principles of sustainability.

Clean technologies occupy a vital role in the construction and implementation of the new model. It is expected that the new technologies will contribute to:

- the improvement of energy efficiency and the decrease of the necessary inputs per unit of output;
- the increase of product life both directly and through maintenance ;

- the extensive use of recycling and reuse of materials and components;
- the improvement of productive processes and the reduction of waste.

New and clean technologies are also expected to contribute indirectly in terms of competitiveness and to offer an international paradigm. Industrial and energy policies are examined in order to design the necessary measures at the micro-economic and short-term levels (e.g. environmental and other taxation, internal market measures, international trade rules, environmental infrastructure, etc.)

As a concluding remark, we can restate with emphasis the need to incorporate the environmental dimension into the prevailing models of development. The concept of sustainability offers an unfinished but already adequately elaborated framework for the redirection of our theories and practices. Sustainable development is an epistemic and policy paradigm with increasing influence. It remains to be seen whether we can make good use of its potential for the promotion of sustainability as a realistic utopia.

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AGRICULTURE

by

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THE ROLE OF AGRICULTURE IN THE SUSTAINABLE DEVELOPMENT OF MEDITERRANEAN COASTAL AREAS

THE CASE OF GREECE

1. INTRODUCTION

Recent developments in the world economy affect agriculture and form a new reality influencing not only the economy and rural communities, but also the way society in general views the role and importance of farmers and agriculture environment. Within the agricultural economy, the reduction of state protectionism is becoming essential and international competitiveness is acquiring paramount importance when choosing any development route. Thus, it is not surprising that economic interest has shifted from the farms to the industrial and commercial links of the modern agri-food chain. Within rural societies, farmers have ceased to play a prominent role and are on the brink of marginalization. Fewer, older and less educated, these people are encouraged, individually or in groups, to develop business skills, diversify the ways they exploit their production, supplement their income through non-agricultural activities and become "guardians of the environment". Many are already talking about the "urbanization" phenomenon, pointing out the nature of the new social stratification in rural areas, at the time of farming contraction. It is worth acknowledging the consequences of the changes in society's perceptions concerning the role and importance of farmers and agricultural environment. There is an emphasis laid on new uses of rural space reflecting, more generally, urban populations' claims to "healthy eating", "natural lifestyle" and "return to nature". Understandably, due to these new trends, people in the cities who traditionally favoured farmers, no longer do so and the latter see their co-operative and professional organization movements losing their political power. In contrast, there is a steady increase in the membership and political influence of non-governmental organizations for the protection of the environment, cultural heritage and consumer rights.

The subject of this paper but, mainly, the authors' expertise are the reasons for focusing on the experience gained from the application of the CAP to the southern member-states of the EU. Especially the role agriculture, more specifically Common Agricultural Policy (CAP), could play in the achievement of the determinants of sustainable development, in the coastal areas of Greece, a country typical of Southern Europe and the Mediterranean. Let's not forget that the length of the Greek coastlines is over 15,000 km, 7,300 of which surround the continental part and 7,700 the islands. The importance of sustainable development in these areas becomes profound if one bears in mind that here lives more than 75% of the population, take place more than 80% of industrial activities, 35% of agriculture and the totality, more or less, of sea fisheries and aquaculture. All these activities are concentrated on this zone, between mountain and sea. Moreover, in the case of islands - especially in lengthy and narrow shaped or small islands - this zone could constitute the totality of the island. From the environmental point of view, this high concentration of activities on the coastal zone has had negative consequences, since the development of such activities was not followed by the necessary infrastructure for the reduction of pollution and design and efficient control of land uses. In Greece, there is a complicated system of laws, regulations and directives aiming towards environmental protection, rational use of land and control of land use changes to compensate, unsuccessfully, the lack of a National Land Register. As a result, this system is either not implemented or its implementation is not complete. Land ownership regime in Greece is characterized by a property, unique within the EU member states: land ownership rights include, apart from exploitation rights depending on the characteristics and the properties of the land, the right to urban exploitation and, consequently the right to build. Greek agricultural land is not an exception and, often, abuses

of this right occur. It is a commonly known fact that it is continuously being reduced, due to the loss of considerably large areas for the sake of non-rural activities (urban development, tourist installations). The problem is greater in peri-urban zones, islands and the coastal areas, where the pressure for such uses are more intense. Indicatively, 90% of tourist and recreational land or areas that for some regions, as, for example, islands, are considered essential for the development of the local economy, do not escape that threat, i.e. uncontrolled land use changes, including most frequently, illegal building. The reform of the CAP after 1992 and the implementation of the GATT since 1.7.95, increases pressures for the abandonment of agricultural land. On the other hand, as it will be analyzed later, it offers, through some innovative measures, new alternative options for the conservation and protection of agricultural land (non food use of agricultural products, extension of agricultural production and conservation of traditional rural landscape).

2. CAP REFORM AND TYPES OF AGRICULTURE IN EU

Any discussion of the effects of the CAP upon the wider region of its application (i.e. the Mediterranean countries) presupposes the co-evaluation of two basic issues. First, what type of agriculture is promoted by the policy under question within the framework of EU, and second, how the CAP, one of the most traditional and extensive policies of the EU, fits within the short and long term strategic aims of the latter. As far as the first issue is concerned, it is known that since 1992, the CAP has diversified its founding goals. The objectives of the CAP, as stipulated in Article 39 of the Treaty of Rome, reflect the priorities of the founding member states in the 1950s. Their main aim was to ensure food sufficiency through secondary objectives, namely the increase of agricultural productivity, the market stabilization and the assurance of a satisfactory standard of living for the agricultural community. These objectives were mainly achieved through mechanisms containing market intervention measures such as price support, import duties and export refunds for main agricultural products such as cereals, beef, lamb and milk. While farming was intensifying, partly due to the aforementioned CAP objectives, the fiscal cost of subsidizing and managing any surplus production rocketed. In an attempt to control over-production, the CAP adopted measures such as milk quotas in 1984, and in 1988 set-aside, then in a voluntary form. The CAP reform of 1992 was, in fact, the most ambitious attempt to face the cost of over-production within European farming. Nevertheless, over-production was not the sole problem the CAP had to tackle. Following the terms and conditions of sustainable development which dominated the international fora after 1987, it was obvious that European agriculture had developed on the whole, because of the CAP. However, such progress did not prevent economic inequalities, social injustice or the downgrading of the natural environment. These negative developments were vividly depicted in the European farming sector which was anything but homogeneous after 30 years of the CAP application. Grosso modo, one could identify three types of agriculture: mass production agriculture, quality production agriculture and small scale pluri-active agriculture. It would be useful to refer briefly to the main characteristics of each type (Poux *et al.*, 1995).

- Mass production agriculture is the most widespread type within the EU and includes farms whose viability depends upon high, usually subsidized production. These farming systems, bearing the structural features of size increase, specialization and standardized production practices, do not favour the survival of traditional, locally adapted farming systems. Furthermore, they have significantly affected the environment and almost monopolized CAP resources, thus contributing to the socio-economic injustice which characterizes the CAP.

- Quality production agriculture is less widespread. Even though its viability relies on the scale of production, its products are sold at higher prices and this reduces dependence on the level of output. This type of agriculture specializes in products of defined standards, such as “Appellation d’Origine Contrôlée”, but also displays a diversify of farming practices related both to the products and local conditions. On the other hand, since quality production agriculture is partly defined by consumer demands, it is more sensitive to the environment, with some exceptions. For example, high quality wine production involves the cultivation of slopes prone to erosion and the use of pesticides and fertilizers.

- Small scale pluri-active agriculture is characterized by insufficient quantity and quality of production and its viability depends upon supplementary income from non-agricultural activities. Diversified agricultural systems are found predominantly in regions of low agricultural potential e.g. mountains, but sometimes, in high quality landscapes with potential for touristic development. These systems, that, up until now have survived in the margins of the main directives of the CAP, are gaining public attention thanks to the EU regional development policies, structural funds and the Accompanying Measures of the 1992 reform, examined below.

Bearing in mind this three-faceted picture of European agriculture, one can comprehend better, first, the philosophy of the 1992 reform and, second, its temporary achievements as well as limitations, thirty years after the introduction of the CAP. Dealing with surplus production of European agriculture has been the core of the reform. The price support for cereals, oil producing seeds, protein plants, beef and lamb was significantly reduced while semi-compulsory set-aside of arable land (10-15% of the acreage) was introduced for the bigger farms (with cereal production exceeding 92 tons). Because such policy resulted in income loss, farmers received arable payments (per hectare of arable land) and animal premia (per livestock head). The results of compulsory set-aside were really spectacular. Within two years of the introduction of this system, the market was relieved, 1991 stocks were dramatically reduced (so was the respective environmental damage caused by their production) and the subsidized export quantities decreased. An example of the effectiveness of this measure is the fact that (combined with other factors) international prices, according to estimates, rose by 30-40% within the last year, keeping in mind that the EU is one of the biggest producers and cereal exporters in the international market. Despite all this, the EU budget for agriculture was not reduced, and beef production remains uncontrolled. On the other hand, the adoption of Accompanying Measures (Regulation 2078/92 “on environmental incentives”, Regulation 2079/92 “on early retirement”, Regulation 2080/92 “on forestry”) was of major importance for problems related to economic inequality, social injustice and environmental downgrading, already exposed through the presentation of the three types of agriculture in the EU. The significance of these measures is considerable as they appear to lead the way to a transformation of farming regions resulting in their sustainable development. It is worth noting that, through the Accompanying Measures, attempts are made to redistribute expenses in a fairer way and to rebalance the support among those sectors even within the FEOGA Guarantees Department. However, only feeble action has

so far been taken, as is the case with a long-standing demand of the agriculturally less favoured EU member states, regions and peripheries. These areas are seeking a fairer ratio between market support expenses and the structural CAP policy. Table 1 of the Appendix documents this particular lack of initiative and the weakness to reform the distribution of funds.

The availability and distribution of funds are not the only threat to the completion of the 1992 reform. In the December 1994 European Council which took place in Essen, it was stated that agriculture constituted the key-element of the EU pre-accession strategy towards countries of Central and Eastern Europe (CECs). Two basic observations were made in the relevant study submitted by the Commission to the Madrid Summit Conference, last December (C.E.C., 1995). The first observation considers that a resolute continuation of the 1992 reform approach which would lead to a clearer distinction between market policy and income support, would not only be less distorting from an economic point of view, but even increase the market orientation of the sector, and help make it more competitive. It would also tend to facilitate future integration of the CECs. According to the second observation, following the hypothetical scenario of all ten associated countries joining in 2000, the budgetary impact of enlargement would be an additional cost in the order of 12 bio ECU per year after a period of transition and adjustment (compared to a projected 42 bio ECU for EU-15), including the arable payments and animal premia and the accompanying measures. There is no doubt that the enlargement of the EU to include the CECs is related to its wider geopolitical interests. Nevertheless, the combination of the CAP's future prospects and the prospect of enlargement poses serious problems for the promotion of sustainable development in the agricultural sector of the EU, especially for the abolition of structural and economic inequalities amongst the member states, peripheries and regions of the EU itself. As far as the first point is concerned, despite the reform, the core of the CAP has not been marked by the principles of sustainable development. General data referring to this matter has been given above. At this stage, one should add that the budget of agri-environment Regulation 2078/92, which is of paramount importance for the promotion of sustainable development, does not exceed 650 mio ECU for 1996, in other words 1.6% of the expenses of the FEOGA Guarantees Section. In addition, important measures such as eco-responsibility, levy of inflow tax and eco-labeling are still discussed and viewed with a certain scepticism (Weijden van der W.J. *et al.*, 1994). As for the second point, the reaction of member states facing serious structural problems in their agriculture is not fortuitous. Greece, for instance, replied through its Minister of Agriculture (29.11.95) to the above mentioned Agricultural Strategy Paper of the Commission that inequalities, similar to the ones in the agricultural sectors between CE and EU countries, still exist within the EU itself, and the gap is getting wider. The Greek minister agrees that the idea of enlargement has matured, but sets as a precondition the distinct convergence of the agricultural sector within the EU itself, and he suggests an increase of the EU funds as the only solution.

Conclusively, it is clear that after the 1992 reform, the CAP has entered a new era that lays the foundations for a new type of rural development. Its declared aims are the increase of competitiveness and the convergence of the EU agricultural sector within the framework of a sustainable rural development. What is not clear is the feasibility of such aims, bearing in mind the level and present distribution of the CAP funds, at a time when priorities of geopolitical importance dictate the EU enlargement by the year 2000, and the full accession of the CECs

by 2010. During this crucial period, the EU is attempting to increase its power and risking yet another ambitious opening to the "other South", i.e. non-EU-member Mediterranean countries[1].

As regards the economic and financing partnership, the New EU Mediterranean Policy consists of the creation of a Euro-Mediterranean economic region based on bilateral agreements and the establishments of a free trade zone by the year 2010. The formation of this region will have to comply with the new rules imposed by the World Trade Organization (WTO) regarding the creation of Free Transaction Zones. Within such zones, there will be free movement and customs exemption of manufactured goods. Within the agricultural sector though, liberalization will need to be gradual with preferential and mutual access of farm goods to different markets "to the extent allowed by various agricultural policies". The term "agricultural policies" is a direct reference to the CAP and this paragraph was added in Barcelona, after Greece, Spain and Portugal underlined its necessity, quite justifiably so. The northern member states have, so far, been rather reluctant to develop relations with the TMCs, fearing that the largest share of expenses concerning any additional aid would fall upon them. At the Cannes European Council (June 1995), it was decided to reduce the support fund to the TMCs by 475 MECUs for the years 1995-1999. The decision was taken under German pressure and despite the suggestions of the European Commission. The final sum to be paid out amounts to 4,685 MECUs, without mentioning a similar amount of loans to be given by the European Investment Bank. The estimated funds appear in Table 2 of the Appendix so that one can compare the terms and conditions of the (unbalanced according to Pisani, 1995) economic cooperation among the EU, the CECs and TMCs. Hence, the northern member states argue for the need to support the TMCs by the means of trading concessions, especially in the agricultural sector. The limited conventional relations between the EU and the TMCs improved in view of the accession of Greece (1981), Spain and Portugal (1986). Furthermore, farming goods coming from the TMCs into the EU have been exempt from import duty since 1993. Within the agricultural sector, the Mediterranean member states of the EU face fierce competition from the TMCs and their main competitors are, in order of importance, Israel, Turkey and Morocco. It is anticipated that, within the next fifteen years, Turkey and Morocco will drastically improve their trade position. In view of the gradual further liberalization of the trading links between the EU and the TMCs, the Mediterranean member states of the EU are seriously concerned as they relate these developments to the expected deepening of the CAP reform and the decisive EU opening towards the CECs. Greece, for example, not only favoured but also strongly supported the already thorough approach of the relations between the EU and the TMCs (Corfou European Council, June 1994), yet it is concerned about the new developments. The indirect impact of the above mentioned approach upon Greek agriculture is already noticeable and rather harmful. The frequent mass imports of farming goods from the TMCs create considerable competition with serious repercussions for farmers' incomes and occupations. The Greek Government's position is that the gradual deregulation of transactions between the EU and the TMCs is essential and should be implemented with increased financial aid, so as to become mutually beneficial. Moreover, the forthcoming concessions should be made after consideration of these negative effects, and should be based on the principle of complementarity.

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[1] For more details see L. Louloudis "The future of rural areas and agricultural activities in Mediterranean countries. Regional impact of the CAP on the agricultural activities of Mediterranean countries". Council of Europe Seminar: "The challenges facing European Society with the approach of year 2000: Strategies for the sustainable development of European states in the Mediterranean basin" Athens, Greece 25-26 April 1996.

The Greek government justifiably expressed its concern but, by focusing on the issue of insufficient financial support, it overlooked a far more serious problem: it has been observed that southern member states have difficulties in adjusting to the structural policies of the EU and in fully exploiting them. C. Hadjimichalis concludes that southern regions are facing a triple difficulty. First, EU structural policies are paying attention to the wrong issues dominated by the "gap approach" (lagging southern regions have to "catch-up" with north western ones and for this reason they need assistance) and a bias towards north-central European "norms" of capitalist development. Second, the very focus of structural policies runs contrary to emergent shifts in the geography of production which currently are assuming more global dimensions and are, anyway, very limited to compensate for the many social and economic difficulties in the south. Third, southern regions lack at present the political power to raise their voice against incoming marginalization. The latter is related to the legacy of weak civil society, lack of strong local institutions, and the clientelistic practices of the central state (Hadjimichalis, 1994). A brief overview of the development of Greek agriculture during the 15 years since the CAP came into effect illustrates this policy's major impact and confirms Hadjimichalis' observations. The almost uni-dimensional price support policy for certain goods encouraged the growth of certain production sectors (arable crops, plants for industrial use) at the expense of others (livestock breeding, quality goods produced locally). Moreover, it exacerbated inequalities amongst the peripheries and minimized the interest, previously shown by the EU, for the vital restructuring of some problematic structures within Greek agriculture[2]. The plain, well irrigated regions used for intensive farming greatly benefited from this policy while mountainous and problematic areas used for traditional, high quality extensive farming, were deserted (it is worth mentioning that Greece is the most mountainous country in the EU). Nevertheless, even against the main tendencies some interesting developments, from an environmental point of view, took place in these very areas. The main idea was to promote or retain agricultural practices and methods of non-intensive (in other terms extensive) nature. Before going into a detailed reference to the above-mentioned developments, some remarks on the definition and the main practices of extensification are necessary.

Extensive systems correspond to a wide range of situations, levels and conditions. We can, however, give a general description of the main features of a medium extensive farm: inputs are limited, less - expensive methods are applied, no irrigation systems are used, resources are utilized to the greatest extent. Cultivation treatments are simplified, fertilization does not always cover the loss of nutrients, uptake in the resisting crop yield varieties is maintained, the propagation material comes from the farms' own production and plant protection aims at preventing great losses. Recent work at the Institute for European Environmental Policy (Baltic *et al.*, 1995) tried to identify some of the farming systems most closely associated with high nature value. While there are great variations within Europe, the list is dominated by low intensity systems, such as a substantial proportion of sheep and goat production, some outdoor beef production, significant areas of dry arable farming, some perennial crops including sizeable areas of olives and relatively small areas of mixed farming systems, traditionally managed orchards and other crops.

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[2] In 1994, the influx of funds from the CAP reached 3 bio ECU approximately whereas the Domestic Agricultural Product did not exceed 7.3 bio ECU. On the contrary, the CAP offered only 14% of the total EU funds reserved for Greek agriculture towards its structural modernization. Even these funds did not reach the majority of Greek farmers since the terms and conditions of their use (for instance the definition of the term "farmer") had not taken into account the particularities of Greek agriculture (extensive pluriactivity, small holdings etc.).

In Greece on the whole extensive systems are quite widespread[3]. But in the case of two main island areas i.e. Aegean and Ionian sea islands, the proportions are higher. Around 70% of the total cultivated land is under extensive systems. Furthermore the proportion of irrigated land as a percentage of the total cultivated land (TCL), was in 1989 in the Aegean sea 9.3% while in the Ionian islands it was 5.3%. These percentages in 1994, in the case of Aegean were decreased by 1.4 thousand hectares (to 8.6% of the total cultivated land, while in the Ionian it was increased by 1.1 thousand ha to 6.7% of the TCL. These figures show more or less a state of stability, since in Greece as a total the proportion of irrigated land rose from almost 30% in 1989 to 34,6% in 1994. Of course the expansion of irrigation depends on several factors, but in the case of the Aegean seems to show the persistence of extensive systems. Taking the case of the area covered by cereal crops (except corn) and the land cultivated by vegetables once can see that during the years 1989-1994 there is an increase of cereal cultivation from 3.47 kha to 3.56 kha in the case of the Ionian and 3.60 to 3.73 kha for the Aegean, while vegetable crops seem to remain constant in the case of Ionian islands (2.25 kha) and reduced in the case of Aegean 5.6 to 5.127 kha. In the latter case the arable area payments system under Reg. 1765/92 "on the establishment of a support system for producers of certain arable crops"[4] of the Common Agricultural Policy (C.A.P.) seems to have made a considerable contribution to the persistence of the extensive systems since about 2000 agricultural holdings in the case of the Ionian and more than 9000 in the Aegean were supported through this scheme, representing the totality of the land covered by cereals and other crops under Reg. 1765/92. The fact that no obligatory set aside land was required in order to benefit from the scheme, due to the fact that small holdings prevail in the islands, was another factor that positively affected the environment, since the abandonment of agricultural land, although increased from 18.8 to 19.8% between 1989-1994 in the Aegean and from 12.3 to 13.2% in the Ionian, was not facilitated by the scheme. The effect is positive from the environmental point of view, since the abandonment of agricultural land in the case of the islands due to the prevailing geomorphologic and climatic conditions can lead to decertification phenomena[5].

A rather different picture is given in the case of the Argolid valley, on the coast of Argolikos gulf at Peloponnesos (Lemon *et al.*, 1995). According to the authors, another path was

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[3] Extensive systems do not always guarantee environmental protection. In certain Aegean islands, the existing extensive systems for sheep and goat breeding have been established by farmers on the basis of a rationale aiming at saving time due to pluri-activity (seasonal employment in tourist activities) as well as getting the aids granted for livestock, not linked to the carrying capacity of the land. These areas, however, are characterized by poor pastureland quality (due to the extreme xerothermic conditions prevailing and the soil relief), as well as by the difficulty in promoting other activities, which could on reflection, be the starting point of agricultural operation. The result is over-grazing, which in combination with the adverse climatic conditions impedes vegetation growth and decreases the production potential of the ecosystem, due to the continuous soil erosion. The extreme effect of these existing conditions is the beginning of the "decertification" procedure.

[4] Reg. 1765/92 introduces direct per hectare payments for the producers of cereal crops, oilseeds etc. in order to compensate them for the considerable decrease of the price secured to them by the EU. In order to be supported under this scheme large holdings are obliged to set aside part of their arable land.

[5] In the case of the islands the proportion of abandoned land seems to be increasing while in Greece as a whole it looks more or less stable around 12%. The above-mentioned Reg. 1765/92 is thought to have contributed to the contraction of the abandonment, in areas where small holdings prevail.

followed leading towards a more intensive and less diverse agriculture based upon fruit production. The valley is one of the main citrus and apricot producers in Greece. This evolution was facilitated by certain policy measures like state subsidized investment on irrigation, mainly, and technology as well as the price support framework offered by EU. This led to negative effects like water salination in the case of the zones near the coast, and the need for increasing the depth needed in order to obtain water to 400 m, bore holes drying up at the peripheral zones. Although certain measures were taken in order to help the farmers of the region, e.g. a project of pumping water from sources inside the sea (Anavalos). This project, although it has proved of considerable help, seems to have raised problems of equity between the farmers of the area apart from the practical difficulties. The whole complex of problems led the authors to suggest the reduction of water use even by uprooting the already existing orange tree plantation. The undesirable side effects of a policy successful in its objectives are profound.

3. CONCLUSIONS

Horizontal measures, especially in the form of indiscriminate price support, do not seem to have effects proportional to the amounts of funds allocated. More targeted policies, with measures adopted to local conditions and less oriented towards direct market intervention and price support are required. The agri-environmental eg. 2078/92 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance and enhancement of extensive systems, if it is adequately funded, implemented by well designed and sufficiently targeted schemes, supported by advice, information and research and treated as a policy with genuinely fresh objectives. But as D. Baltic (1995) has also stressed, it is not only agricultural policy that will determine the fate of extensive farming systems. Amongst the many other factors involved are rural development policies, socio-economic initiatives, including the development of local education and training, the viability of local processing and food production units, the social status attached to often low-tech farming systems and the implementation of environmental policies, such as the EU habitats Directive[6]. Interestingly enough, because of these recent developments, there is a persistent tendency amongst the elite who determine agricultural policy and farmers who were favoured by the above-mentioned measures: they strongly oppose any adjustments to the new conditions dominating the international trade of farming goods and which the CAP reform attempts to regulate (Collins *et al.* 1995).

Even so, the CAP reform itself affirms the predominance of northern European views on agricultural development. In a recent study, it was convincingly argued that, if we break down the explanation and action logic of regulation 2078/92, we may find an ideal-typical argument of the following kind in it: to reduce overproduction in agriculture and to contribute to more environmentally sound forms of natural resource use, all types of measures to reduce intensity of production at farm level - from reduction of inputs like fertilizers and agrochemicals (as weak forms) to conversion to organic farming (as a strong form) - will be supported by the CAP. This argument reveals the preponderance of “northern problems” and the dominance of rich, northern countries in the EU. Furthermore, it is not a social construction in the sense of socially anchored forms of agriculture, but a scientific-bureaucratic construction based on farm management. For

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[6] Directive 92/43/EU. A primary selection of around 300 areas - most of them in coastal areas has been completed. The initial steps seem to have been done, as presented in a recent conference in Athens. Achievement of the directives’ goals seemed possible through the implementation of integrated management and sustainability principles (Tsekouras, 1995).

example, the EU agri-environmental policy introduces measures into Portuguese agriculture which are targeted for other forms of agriculture. What is extensification in an agriculture which is still dominantly extensive and traditional? Portuguese agriculture faces other problems. The level of population density in the interior rural areas of Portugal has fallen dramatically from 1981 to 1991, social and physical decertification becoming possible. So, the main environmental problems in rural areas of Portugal, and the same applies to some extent to Greece, are caused by giving up land use and by rural exodus. However, these do not fit into the goal structure of regulation 2078/92 which follows the combination of market relief through extensification (Billaud *et al.*, 1995). It must be stated that the regulation 2078/92 became operative three years ago for northern member states such as Germany, France, Denmark and others and it has been considerably successful. In Greece however, it is coming into effect this year, after some long and difficult negotiations with the authorities of the Community and with its initial budget reduced by 1/4. According to unofficial estimations of the Greek Ministry of Agriculture about 268,000 ha could be considered as available for alternative, environmental friendly, use. 165,000 of them, are of importance for the coastal and island areas, in particular.

This critique formulated from a "Southern" perspective does not lessen, however, the significance of the agri-environmental measures and their positive impact on future developments concerning rural economy, agriculture, nature and landscape and finally, on southern member states of the EU. Moreover, because we live in an era when, according to a recent study, "contradictory trends can be observed: the marginalization of certain areas, while at the same time the "demand" for nature and rural heritage is growing. Over the last couple of years throughout the southern regions people have been rediscovering mountain leisure activities.... today's exceptions -a few scattered and fragile havens of resistance to marginalization- could become "a network of activities meeting emerging economic, ecological and cultural needs, thanks to a more general support scheme" (Bazin *et al.*, 1995). However, this "more general support scheme" does not now exist. Nevertheless, the package of existing Accompanying Measures is already a decisive step in a process of building a new European policy on rural environment based on sustainable development. It must, however, be better adapted to the particular conditions prevailing in the South.

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APPENDIX

Table 1

The allocation of the CAP budget

Overall CAP budget	ECU 35 - 38 billions/year
Market support	average ECU 34 billions (95% of above) - ECU 15 billions for direct payments - ECU 19 billions for price support
Accompanying measures	ECU 800 millions for afforestation, early retirement and agri-environmental measures
Structural Policies	ECU 28 billions, incl. ECU 460 millions for less favoured areas

Source: Nature Conservation and new directions in the EC CAP-IEEP London-1993.

Table 2

Allocation of EU Funds among CECs and TMCs (mio ECU)

Year	CECs	TMSc
1995	1,154	550
1996	1,235	900
1997	1,273	1,000
1998	1,397	1,092
1999	1,634	1,143
TOTAL	6,693	4,685

Source: Ministry of National Economy, Greece, 1995

Table 3

Basic categories of land use
(.000 of ha)

	Communities	Agricultural	Pastureland		Forests	Covered by water	Urban	Others
			Communal	Private				
Aegean								
1981	408	204.31 (22.40%)	141.53 (15.51%)	323.40 (35.44%)	127.62 (13.98%)	13.95 (1.53%)	41.01 (4.49%)	60.37 (6.61%)
1991	386	202.67 (22.22%)	151.35 (16.59%)	309.12 (33.89%)	126.91 (13.91%)	13.72 (1.50%)	46.24 (5.07%)	62.19 (6.82%)
1981-1991		-0.80%	6.94%	-4.42%	-0.56%	-1.65%	12.75%	3.01%
Ionian								
1981	279	77.96 (33.79%)	14.79 (6.41%)	97.44 (42.24%)	21.77 (9.44%)	2.82 (1.22%)	11.93 (5.17%)	3.98 (1.73%)
1991	266	79.37 (34.41%)	16.61 (7.20%)	91.63 (39.72%)	21.20 (9.19%)	3.03 (1.31%)	14.89 (6.45%)	3.95 (1.71%)
1981-1991		1.81%	12.31%	-5.96%	-2.62%	7.45%	24.81%	-0.75%

TOURISME

par

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DÉVELOPPEMENT TOURISTIQUE DURABLE SUR LE LITTORAL MÉDITERRANÉEN: NOUVELLES STRATÉGIES ET PROJETS PUBLICS

1. VERS UN DÉVELOPPEMENT TOURISTIQUE DURABLE?

L'intensification des flux internationaux de tourisme enregistrés depuis les quarante dernières années confirme le fait que l'activité touristique est l'un des secteurs les plus dynamiques entre tous ceux qui forment le processus productif. Dans le cas des pays riverains de la Méditerranée, près de 100 millions de touristes étrangers sont reçus chaque l'année, ce qui représente, en moyenne, 2% du PIB (5% si l'on intègre le tourisme intérieur), atteignant même plus de 7% sur le littoral européen, et créant à la fois 5 millions d'emplois.

L'évolution touristique internationale confirme la croissance permanente pendant les années à venir, de sorte que les prévisions du Plan Bleu pour le tourisme national et international dans les régions côtières de la Méditerranée (selon M. Bâtisse), même si l'on envisage la pire des tendances, prévoient 170 millions de touristes pour l'année 2025 et entre 110 et 120 millions pour l'année 2000 selon les prévisions de l'OMT.

Mais le fait le plus évident de cette croissance a été la concentration d'offres dans les grandes aires réceptives, entraînant des problèmes de massification et de perte d'attraits. Ce phénomène contraste avec les nouveaux goûts et tendances de la demande, qui visiblement s'éloignent des offres habituelles et visent une gamme plus diversifiée de produits, bien que le grand attrait du soleil et de la mer reste l'atout numéro un.

Deux faits sont essentiels pour comprendre l'évolution dans les processus de développement touristique du littoral méditerranéen:

- La grande concentration territoriale, la détérioration de l'environnement, les infrastructures insuffisantes et le fait de considérer le territoire comme un simple support de l'activité, sont des obstacles à un développement continu du secteur touristique à long terme. Même dans les destinations les plus dynamiques, l'offre hôtelière a besoin de modernisation ou de mise à jour et l'environnement urbain et naturel exige rénovation et amélioration.

- Les perspectives de croissance dans les régions du sud et de l'est méditerranéen, en tant que foyers récepteurs alternatifs, se fondent sur l'idée des nouvelles destinations émergentes, mais doivent conjuguer les formes, comportements et attitudes de la demande, avec les objectifs de développement durable établis par le **Deuxième Plan d'action pour la Méditerranée** pour les activités se rapportant au tourisme dans les plans nationaux et locaux.

Les principes de base du développement durable ont été définis à partir de programmes d'action pionniers, depuis le **Plan d'action de 1975,** jusqu'au plus récent, **le Rapport sur le tourisme et l'environnement en Europe** (D.G. XXIII, 1995), et tout spécialement, la **Charte du Tourisme Durable** née durant la Conférence Mondiale de Lanzarote (avril 1995), dans laquelle le développement durable est établi comme un processus orienté, contemplant une gestion globale des ressources pour assurer sa durée et permettre la conservation du patrimoine naturel et culturel. Dans la ligne de la durabilité comme point de référence pour le

développement figure le **PAM II** (Barcelone, 1995), et c'est dans ce cadre que se situe cette étude.

Il est intéressant d'évaluer la situation de départ dans les pays méditerranéens et la mise en place de politiques et stratégies, au moyen d'instruments et d'actions concrètes qui essaient de reconduire le modèle actuel, prêtant attention tout spécialement aux problèmes de gestion du tourisme durable à l'échelle régionale et locale, dans les différentes phases de développement.

Il convient de différentier les stratégies et politiques comme suit:

1. La problématique environnementale des destinations en pleine maturité, pour lesquelles se présentent de grands défis: la limitation de la croissance immobilière disproportionnée, l'insertion de la qualité environnementale (évaluation de l'impact sur l'environnement des projets, paramètres), modernisation de l'offre et étalement dans le temps, diversification du produit, amélioration de la qualité de vie des agglomérations, revalorisation du patrimoine naturel et culturel.

Dans ces cas, les objectifs doivent être fixés par étapes, recherchant le facteur long terme, vu qu'il s'agit de réorienter des modèles consolidés. Mais ces politiques doivent être comprises comme une exigence et un facteur de concurrence pour maintenir sa position sur le marché touristique mondial.

2. Dans le cas des nouveaux espaces touristiques et des destinations émergentes des rives sud et est, il s'agit de choisir un modèle d'offre, avec des éléments structuraux positifs dans la gestion des ressources. Comme l'affirme Figuerola dans le **Plan Bleu,** le tourisme ne peut être conçu exclusivement comme une industrie de transport, hébergement et restauration. Il s'agit donc de considérer tous les aspects se rapportant au développement de l'activité et d'évaluer les potentialités et les problèmes sous l'angle du tourisme. Il est évident que la spontanéité est inacceptable dans les interventions touristiques, de même qu'une planification dont les rigidités négligent les potentialités. Donc, dans les nouveaux développements, il sera nécessaire de déterminer des modèles territoriaux et urbanistiques mesurés en termes de rentabilité sociale et de modernisation pour le pays. Mais l'environnement doit être l'élément central des projets, de façon à ce que le tourisme remplisse la double fonction de mise en valeur des ressources et de contribution efficace à leur conservation et amélioration. Une autre question essentielle sera celle des aspects socio-culturels.

2. DÉVELOPPEMENT ET ENVIRONNEMENT DANS LES DESTINATIONS TOURISTIQUES DE LA MÉDITERRANÉE: SYNTHÈSE DES PROBLÈMES

La situation à laquelle font face les destinations touristiques méditerranéennes, spécialement les grandes destinations doit être le point de départ pour concevoir de nouvelles stratégies et des projets de développement durable.

En règle générale, l'expérience des années de développement touristique de masse met en évidence la croissance disproportionnée de l'offre face à la pression de la demande, basée sur la consommation appauvrissante du sol- considérant la prépondérance des intérêts

immobiliers- et sur l'utilisation excessive d'autres ressources essentielles (on peut souligner tout particulièrement le problème de l'eau).

Dans une bonne partie des régions des rives nord, le tourisme s'est approprié la majeure partie du littoral, ce qui suppose des revenus mais aussi des coûts sociaux et environnementaux élevés. Il ne s'agit pas d'exposer maintenant le vaste catalogue des problèmes environnementaux qui font du tourisme l'un des secteurs-clés sur lequel il faut agir de toute urgence à cause de son incidence environnementale. Mais il est intéressant de souligner les raisons qui conduisent à un modèle insoutenable:

- vision sectorielle des problèmes du tourisme: le tourisme comme facteur de développement, l'assimilation au transport et à l'hébergement et l'oubli des questions territoriales et environnementales.

- gains individuels rapides: absence de culture d'entreprise et prépondérance du facteur court-terme dans les investissements, situation renforcée de plus par la pression de la demande.

- spontanéité des développements, en l'absence d'instruments et de plans pour l'aménagement de l'offre sur le territoire.

La situation des destinations en pleine maturité est fondée sur la théorie du **cycle de vie du produit**, puisqu'après une phase d'expansion accélérée, on atteint la consolidation dans les années 80, avec une série de déficiences de structure qui- masquées quelquefois par des succès conjoncturels comme c'est le cas depuis les deux dernières années en Espagne.- obligent à un changement de direction pour maintenir la concurrence.

Il est vrai qu'actuellement on ne peut généraliser la définition de régression, si l'on s'en tient aux indicateurs de fréquentation: la proximité des foyers émetteurs, l'existence d'offres consolidées et l'efficace commercialisation maintiennent la situation. Mais l'évolution des tendances dans le marché touristique international, les nouveaux comportements et goûts de la demande et la naissance de nouvelles destinations, établissent deux modèles d'évolution pour les régions en pleine maturité, si l'on tient compte des réponses observées:

a) Dans certains cas, la nouvelle philosophie de développement pour ces destinations est acceptée, tenant compte du changement d'orientation qu'implique la durabilité en tant que point de référence, et des actions visant la qualité et l'excellence.

b) Dans la majeure partie des destinations, la réponse aux problèmes de durabilité a été concrétisée dans l'intention de capter d'investissements, favorisant de nouveaux processus de croissance de l'offre. Y compris moyennant des stratégies basées sur des coûts bas, ce qui conduira à une détérioration irréversible de la destination touristique, puisque la compétence pour capter des segments de clientèle plus stables et de plus haut niveau de revenus se produira dans le domaine de l'environnement, de sorte que la rapide évolution des valeurs pénalise les fragilités de structure.

3. FONDEMENTS D'UNE STRATEGIE DE TOURISME DURABLE

Les propositions et recommandations émanant d'instances internationales commencent à aborder dans le domaine local et régional puisque des signaux d'alarme évidents apparaissent et tout spécialement parce qu'il s'agit de garantir le futur de l'activité. Mais la nouvelle philosophie de développement touristique, basée sur la qualité environnementale, prend de la force pourvu qu'elle démarre en tant qu'action menée entre différents agents (entreprises, organismes, institutions, citoyens), et quand la nécessité de transformer les fondements du modèle antérieur est assumée. Il est vrai qu'une stratégie de durabilité présente des difficultés objectives (rigidités des structures consolidées) et subjectives (inerties des agents sociaux), mais c'est la seule réponse à la concurrence du produit touristique et au maintien de son apport économique.

La qualité de vie doit être basée sur la participation sociale, mais elle démarre d'interventions publiques qui impliquent l'introduction de concepts nouveaux dans les destinations touristiques: écologie urbaine, décongestion du front côtier, régénération des zones dégradées, protection des espaces ayant une valeur environnementale et de paysage, réserves marines, traitement des résidus solides et liquides et le plus sévère de tous les concepts pour la transformation de la situation actuelle: les démolitions sur le front de mer.

Tenir compte des questions environnementales n'est pas seulement un facteur pour qualifier l'offre, mais aussi la condition requise indispensable pour la continuité de l'activité, à tel point que le tourisme ne sera pas possible dans les régions qui présentent des dégradations significatives de l'environnement et où il n'y a pas de gestion environnementale adéquate.

Le succès dépendra de la capacité d'administration pour impliquer les agents publics et privés, dans la définition du modèle et sa mise en pratique et de l'articulation institutionnelle au moment de répartir les compétences et responsabilités, d'élaborer des instruments et de mettre en marche des processus d'intervention. Tout ceci quand la situation dans des pays touristiques développés est caractérisée par les problèmes concurrentiels.

4. POLITIQUES, PROGRAMMES ET INSTRUMENTS POUR LA PLANIFICATION DURABLE DU TOURISME

Les conditions de changement de structure dans les marchés touristiques, les réajustements consécutifs entre l'offre et la demande et leurs répercussions négatives pour les économies régionales et nationales, ont été les facteurs qui ont motivé des initiatives de la part des agents économiques et des administrations, pour garantir la position concurrentielle du secteur et les stratégies à suivre à l'avenir. Les nouvelles stratégies surgissent du niveau de l'état jusqu'au niveau local et, après l'analyse de la position du secteur, des plans et des programmes essayant d'orienter les interventions sont formulés.

Dans un cadre plus global, la **coopération internationale** n'a pas dépassé les programmes de référence- déjà cités- dont le rôle est d'établir le cadre de référence et les objectifs génériques pour un modèle durable, qui devra être concrétisé à niveau régional et national. Dans le cas de la U.E.R., c'est dans le **Traité de Maastricht** que pour la première fois, le tourisme est mentionné comme digne d'intérêt, c'est-à-dire, comme phénomène social et économique qui mérite des interventions. Mais l'UE manque de politique spécifique en matière

touristique et on discute actuellement (**Le rôle de l' U.E.R. en matière de tourisme. Livre Vert de la Commission,** Bruxelles, 77 pages) de la façon d'articuler cette dernière du point de vue administratif, puisque dans le développement de l'activité interfèrent différentes compétences publiques.

Jusqu'à présent, ce sont des politiques horizontales et indirectes à celles qui sont explicitement touristiques qui implicitement ont plus d'effets que les mesures spécifiques du secteur. Ainsi ce sont celles qui touchent à la politique environnementale, aux petites et moyennes entreprises, à la protection des consommateurs et aux transports qui sont intéressantes. En somme, le besoin de coordonner des politiques en matière touristique s'impose sur le plan international et il est donc indispensable de disposer de moyens administratifs et politiques. En attendant, c'est depuis les fonds structuraux consacrés à la politique régionale qui se concrétise la politique touristique européenne, de sorte que la compétence entre les différentes régions pour élargir leurs quotas de marché se maintient.

Sur le même plan international, la naissance de nouvelles destinations sur les rives du sud et de l'est, situation qui représente une menace pour les zones consolidées de la part des nouveaux concurrents, pourrait servir pour la mise en place de politiques de coordination entre les destinations spécialisées et les destinations émergentes, dont la situation actuelle est dans une certaine mesure semblable à celle reflétée dans les pays de la rive nord au moment de son démarrage touristique. Ainsi, le transfert de technologie, l'expérience et la conviction que la diversification et la croissance des flux permettront de maintenir les destinations actuelles et d'argumenter de nouvelles offres, renforcent le besoin de développer des mécanismes de coopération internationale au moment de projeter des développements. Le **Plan d'action de la Méditerranée** comprend parmi ses objectifs la solidarité entre les états riverains dans la gestion du patrimoine et des ressources.

4.1 Initiatives des états

Sur le plan des états, l'énorme contribution du tourisme au développement économique justifie l'intérêt qui existe à entreprendre des projets de modernisation du secteur. Un cas emblématique est celui de l'Espagne, dont l'offre représente plus de 50% de l'hébergement touristique de la Méditerranée, en plus de la variété typologique et qualitative de son produit touristique.

La perte de concurrence, après une longue période d'expansion, est justifiée par la disparition des traditionnels avantages comparatifs initiaux, de concert avec l'obsolescence et dégradation de l'environnement. L'administration de l'état s'est attachée à l'élaboration du **Plan cadre pour la compétitivité du tourisme espagnol (FUTURES),** dont l'objectif général est de créer les conditions favorables au développement soutenu du secteur, moyennant la collaboration des administrations et des acteurs sociaux et économiques.

Les objectifs spécifiques sont: récupérer l'intérêt et l'attrait du tourisme sur les marchés internationaux, améliorer la position concurrentielle, maximiser les bénéfices sociales et économiques et conserver et améliorer les environnements naturels et culturels. Le Plan est composé des **programmes opérationnels: Coordination** (relation entre administrations), **Modernisation, Nouveaux produits, Promotion** et **Excellence.** Pour la durabilité du tourisme, ce dernier programme est particulièrement intéressant, puisque ce sont des instruments globaux dirigés aux destinations consolidées qui se sont vues affectées par des pertes de concurrence. Avec les **Plans d'excellence** on vise à dynamiser et mobiliser les

destinations, en engageant les administrations (nationale, régionale et locale), faisant face à l'excès de densités, au déficit d'infrastructures et à la dimension excessive de l'offre. Chaque Plan d'Excellence implique la conception et l'exécution de plans globaux pour les destinations qui visent à l'amélioration de l'environnement urbain et la conservation environnementale. Parallèlement on intervient quant à la modernisation de l'entreprise (stimulants) comme condition requise pour la concurrence.

Le bilan, depuis 1992, est inégal entre les dix **Plans d'Excellence** correspondant à diverses destinations, entre lesquelles figurent des succès comme celui de Calviá, et d'autres qui ne changent rien, comme celui de La Manga del Mar Menor. Entre les projets inclus dans les plans, on peut souligner les interventions en infrastructure: régénération et nettoyage des plages, équipement, embellissement, signalisation, accès, contrôle des nuisances et de la pollution.

Sans aucun doute, le grand progrès de ces plans est leur capacité dynamisatrice et intégratrice de tous les intérêts d'une destination touristique et le principe de concertation entre les agents et de coordination au moment d'agir, puisqu'il s'agit de **plans globaux**, c'est à dire que tous les problèmes et potentiels sont identifiés depuis la dimension du tourisme.

Même si les projets d'amélioration de l'environnement sont perceptibles, les résultats quant à la mobilisation de la destination dépendent toujours de l'engagement entre les divers acteurs. Précisément, quand le problème d'une partie substantielle des destinations touristiques en pleine maturité, sauf exception de grand dynamisme, est l'absence de culture d'entreprise et même l'absence d'entrepreneurs engagés, puisque les investissements qui ont stimulé la croissance ont été primordialement immobiliers. C'est pour cela qu'il est nécessaire d'encourager parallèlement des programmes et des initiatives d'entreprises- en accord avec le positionnement concurrentiel- si l'on entend le développement durable en termes écologiques, socioculturels et économiques.

En plus des projets spécifiquement touristiques, on ne peut oublier l'intérêt que présentent pour la qualité du modèle touristique, les projets de **politique territoriale et d'aménagement du territoire**, développés moyennant des plans, en tant que méthode d'intervention publique. De cette manière. dans le cadre de la planification physique, les mesures d'aménagement du littoral ont contribué à l'amélioration de l'environnement naturel et urbain du tourisme. Les interventions du ministère des travaux publics, qui normalement a compétence pour les questions relatives à l'environnement, apportent un bilan positif en matière de **régénération des plages, protection du littoral, interventions dans des zones dégradées**, etc, avec des répercussions évidentes dans la qualité environnementale pour le tourisme. De la même façon, la protection des espaces pour des raisons de valeur écologique et de paysage contribue à l'amélioration des aires touristiques. Il suffit de tenir compte du rôle que peut jouer un espace protégé sur une zone côtière dense ou la création plus récente de réserves marines sur les côtes et dans les îles méditerranéennes.

Au niveau des initiatives nationales, le pari d'un **développement touristique dans les pays de la rive sud** doit être considéré comme un sujet essentiel, au moment d'appliquer, depuis le départ, les principes de développement durable. Un exemple intéressant, pour sa nouveauté, est l'élaboration du **Plan national touristique d'Algérie** dans lequel le territoire et l'environnement apparaissent comme un argument d'offre et un facteur conditionnant pour l'activité touristique. L'intégration environnementale préoccupe quant aux ressources naturelles, et pour cette raison on procède à l'analyse du modèle territorial le plus approprié et on donne

beaucoup d'importance aux typologies d'offre et aux problèmes du cycle intégral de l'eau. En ce qui concerne les aspects socioculturels, on propose d'intégrer des éléments urbains dans l'offre touristique, en suivant les exemples de Tunisie, et de ne pas générer exclusivement des offres spécialisées dans des zones isolées, essayant ainsi d'ouvrir des perspectives d'intégration culturelle et de participation de la population autochtone au-delà du rôle de la main d'oeuvre. En ce qui concerne le travail d'aménagement interne de l'activité, on mise sur la promotion d'un cadre juridique et réglementaire qui définisse les paramètres à partir desquels devra être ajustée chaque activité associée au tourisme, établissant les fonctions de chaque administration dans un cadre organisationnel du tourisme.

4.2 Initiatives politiques régionales

Dans les pays méditerranéens, ce sont les régions côtières importantes quant à l'offre touristique qui mettent en place des programmes visant à la planification territoriale et environnementale du tourisme, à partir de deux axes d'intervention, correspondant à différents instruments:

a) Politique d'aménagement des zones touristiques mise en place par des plans et des instruments d'aménagement du territoire. La nouvelle philosophie pour la recomposition des zones saturées et la planification de futurs développements, dont la dimension environnementale est évidente, est canalisée depuis le territoire; ce dernier est compris comme un argument d'offre et de facteur conditionnant le développement touristique. On peut souligner des cas, comme les lignes directrices en matière d'aménagement du littoral, en tant que document public pour l'amélioration des zones dégradées et la conservation et gestion rationnelle des ressources.

Cependant, les meilleurs résultats sont obtenus par les plans ayant une optique globale. Comme cas représentatif, on peut citer le **Plan d'aménagement de l'offre touristique des îles Baléares (île de Majorque)** qui s'appuie sur l'importance du tourisme dans l'économie de l'île et sur les effets territoriaux et environnementaux. Elle dispose de 250.000 entreprises hôtelières (26% de l'offre espagnole), 6 millions de visiteurs par année -c'est à dire, 10 fois sa population permanente- et le plus grand PIB du pays dépassant même le revenu moyen de l'U.E., avec des dépenses touristiques de 500 milliards de pesetas par année.

La pression urbanistique, le manque de terrains et les facteurs limitatifs pour maintenir une stratégie de croissance continue de l'offre (eau, infrastructures, équipement et services) ont conduit à des projets fondés sur la qualité, la reconversion des zones saturées et la création d'infrastructures et d'équipements. Le POOT est un instrument prévu au titre de la loi d'aménagement du territoire des îles Baléares de 1987. La méthodologie est basée sur la délimitation des zones touristiques, comme unités de planification, pour lesquelles sont établies des mesures de réglementation et d'aménagement, conditions pour la reconversion et la décongestion des zones. Comme concept de base de développement durable, la **densité** est le paramètre de base.

Certaines caractéristiques typologiques des bâtiments destinés à l'activité d'hébergement sont établies, ainsi qu'un **ratio touristique** (superficie minimum de sol par site touristique, hauteur, volume, équipement). La création d'hébergement alternatif à l'offre majoritaire est stimulé, tandis que la préservation de l'environnement est garantie avec l'établissement de zones limitrophes de protection côtière et des zones de protection de

l'arrière-pays. En outre, une grande nouveauté est l'insertion de conditions pour la rénovation de l'offre et la décongestion de zones moyennant des opérations d'**échange de mise en valeur** (permutation de terrains) et **reconversion** (mise à jour de l'offre, démolition, reconstruction, changement d'utilisation). Il convient de souligner l'acceptation et l'engagement social obtenus pour ce projet .

Dans un cadre à peu près semblable, on peut citer la mise en oeuvre du **Plan directeur des espaces touristiques de la Communauté de Valence** qui utilise un des instruments prévus dans la **loi d'aménagement du territoire** de cette région. L'aménagement de zones touristiques est établi et les mécanismes de coordination administrative pour les interventions sont créées. L'objectif global est l'utilisation rationnelle des espaces et des ressources disponibles.

b) Plans régionaux de tourisme élaborés par l'administration du secteur à caractère intégral, comme c'est le cas en Andalousie, dont le **Plan de développement intégral du tourisme andalou (Plan DIA)** signale l'aménagement du territoire comme la clé de la concurrence, à travers une amélioration de la qualité de l'offre, et la nécessité de projets conjoints et coordonnés. Entre ses programmes d'interventions, on peut citer celui de l'**aménagement touristique du territoire** dont l'objectif est l'amélioration de l'offre à travers des projets spécifiques: reconception territoriale de zones consolidées, aménagement de zones émergentes, conception de zones prometteuses et une spécificité du sol touristique.

On doit souligner que dans des régions spécialisées en tourisme, déjà depuis la fin des années 80, la récession des flux internationaux a fait que les objectifs de la politique touristique essaient de comptabiliser les apports économiques de l'activité (emploi et revenu) avec l'utilisation de l'activité pour la conservation et la gestion des ressources environnementales et culturelles, et alors, un double objectif territorial se pose:

- le maintien des destinations consolidées, stabilisant la croissance de l'offre et stimulant l'amélioration de la qualité et le développement de l'offre complémentaire

- le soutien aux nouveaux produits qui décongestionnent le littoral et diversifient les possibilités sur le territoire.

Le problème est le très faible développement des instruments et des plans opérationnels qui devraient canaliser les projets, point sur lequel le manque de coordination administrative a une influence et qui d'autre part affecte tant le tourisme . De plus, la nouvelle phase de croissance de la demande n'a pas aidé du tout en ce sens vu que le succès conjoncturel dissipe pour le moment la crainte de régression du modèle existant, forçant encore plus la promotion de nouvelles offres.

4.3 Les politiques dans le domaine local comme référence essentielle

Les politiques et interventions qui affectent directement les **destinations** ont une importance essentielle sur les processus de réorientation du modèle vers la durabilité. De ce fait, c'est là où l'engagement des agents sociaux acquiert une vraie importance et où sont perçus directement les efforts. Bien qu'il ne soit pas possible de généraliser, il existe des exemples singuliers, véritables expériences pilotes canalisées vers la qualité et l'excellence, depuis cette nouvelle conception du développement.

Le cas de la municipalité de Majorque de Calviá est un exemple évident de réaction face à la régression, par la voie du tourisme durable. Avec 145 km de long et 56 km de développement côtier, elle est la neuvième destination touristique mondiale sur le marché soleil-plage. Avec 100.000 sites, dont 10% sont considérés comme obsolètes, cette destination en pleine maturité concentre 1.200.000 visiteurs par an, mais la récession et les conséquences de la croissance appauvrissante conduirent à la fin des années 80 à une réaction qui consista à forcer le modèle traditionnel, en essayant de capter des investissements pour des nouvelles croissances. Les résultats ne furent pas satisfaisants et depuis les années 90, avec le soutien de l'administration de l'état (Plan d'Excellence), la municipalité a décidé de poursuivre une stratégie intégrée dans laquelle l'environnement et la qualité sont les facteurs centraux. On comptait sur un consensus social évident, mais le problème était de viabiliser la gestion du tourisme durable à l'échelle locale, à travers différentes phases, avec des actions préventives et des garanties de durabilité à long terme.

Parmi les interventions-clé, on peut souligner l'idée de la planification stratégique, flexible et concertée quant au développement local, refusant les risques de planification déterministe et des actions spontanées. La gestion partagée et durable doit être basée sur le consensus social. C'est pourquoi un **Programme local d'Action 21** a été élaboré selon les principes de la Charte de Río, dont les caractéristiques sont la stratégie globale, le développement par cycles, la conception innovatrice du modèle et l'introduction de concepts nouveaux: reconversion, modernisation, démassification et diversification.

Calviá, avec ses grands défis (qualité environnementale, limites à la croissance, modernisation, diversification et amélioration de la qualité de vie) est maintenant une référence de marque en Méditerranée quant à la façon d'aborder le tourisme durable. Pour cela, il conviendrait d'établir un réseau international de collaboration et d'échange d'expériences avec d'autres destinations.

5. BILAN D'EXPÉRIENCES AU NIVEAU DES PLANS ET DES POLITIQUES

Le problème essentiel est le manque d'intégration des activités touristiques, si l'on conçoit la politique touristique comme sectorielle. De cette façon, différentes politiques, horizontalement et indirectement, interviennent de manière décisive, mais de façon non coordonnée, dans le tourisme. Les problèmes de dispersion de compétences, de manque de coordination et de difficultés de gestion agissent au détriment de la conception globale qui doit être appliquée au tourisme. Cependant, il faut reconnaître que les dernières expériences montrent que des progrès significatifs ont été faits en matière de gestion durable. Parmi les propositions, nous pouvons souligner les suivantes:

- L'intégration de la politique touristique dans le cadre de l'aménagement du territoire régional, moyennant le développement d'instruments dont l'utilité est de corriger la dégradation et de rationaliser l'utilisation du sol et des ressources, en même temps que l'établissement de mécanismes de coordination administrative pour les projets qui ont une incidence sur la qualité des aires touristiques. En plus, ces instruments présentent un véritable intérêt quand ils permettent une relation avec d'autres instruments de planification. Cela dit, on doit tenir compte que la planification du territoire touristique requiert que l'on s'intéresse à d'autres domaines tels, le cycle intégral de l'eau, les résidus ou la complémentarité des offres.

- Les échelles nationale et internationale des cadres de référence globaux pour la politique touristique et leurs mécanismes de coordination. Mais on regrette l'absence de la dimension intégratrice des interventions touristiques. Les problèmes et interventions doivent être soulevés depuis une dimension touristique globale et non comme un ensemble de projets épars de différents départements ou administrations. Ce cadre global intégrateur serait la clé pour canaliser les aides à la reconversion. De la même manière, on signale la nécessité de définir un cadre normatif sur la qualité environnementale en matière de tourisme, intégrant des paramètres comme la densité, la capacité de charge, l'étiquetage vert, parmi les divers aspects qui définissent la qualité.

- Le point de référence essentiel jusqu'à présent, pour ce qu'il suppose d'engagement social et d'effort des divers acteurs, c'est le noyau touristique, où les expériences les plus positives et innovatrices sont développées, en accord avec les principes des forums et des plans internationaux. De cette façon, on compte sur des expériences dans des destinations mûres, pour lesquelles on a mis en marche des processus de reconversion globale, démolitions et restructuration des espaces détériorés inclues. La gestion permanente et durable du développement touristique local apparaît comme le moyen le plus efficace.

- La récente norme sur l'impact environnemental et les espaces protégés affecte de façon claire le développement durable du tourisme littoral, en retirant, face aux processus d'urbanisation, des espaces de grande valeur dans des aires congestionnées. On soumet des EIE pour tout plan et projet de transformation. Mais ces mesures devraient s'intégrer dans les plans d'aménagement de zones touristiques, ainsi que les actions dérivées de la protection du littoral (régénération des plages, assainissement...). Il conviendrait d'envisager la nécessité de soumettre des EIE pour tous les projets qui affectent les aires touristiques.

En tous cas, on détecte des projets spécifiques (plages, espaces naturels, épuration des résidus) ayant une incidence sur la qualité des aires touristiques, mais les résultats seraient plus manifestes si l'on entreprenait des plans globaux pour les destinations touristiques et si les travaux publics en projet étaient interprétés en fonction de la dimension de l'activité touristique.

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DEVELOPPEMENT URBAIN

par

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DEVELOPPEMENT URBAIN ET POLITIQUE FONCIERE LITTORALE

Jusqu'après la Seconde guerre mondiale, on pouvait considérer que chaque fonction exercée sur le littoral pouvait détenir sa parcelle de terre ou de mer, sans interférer avec quiconque. Ces temps sont révolus. Le littoral, en particulier méditerranéen, "explore" aujourd'hui et les activités, jusque là distinctes, se télescopent.

La zone littorale, en particulier dans le cas de la France le littoral méditerranéen, pose à la fois des problèmes spécifiques directement liés à l'interface terre-mer, avec les problèmes de droits de propriété du rivage, de droits d'usage et de "droits d'exclusion" liés à cette interface.

Elle soulève également les problèmes généraux de maîtrise du développement urbain qui sont abordés au moyen de la gamme des outils de la politique foncière (outils réglementaires, incitations fiscales, intervention directe des collectivités publiques ou d'organismes ad hoc...)

Elle a progressivement conduit à la mise en place de politiques publiques, notamment d'ordre législatif, réglementaire et fiscal. Celles-ci se sont concrétisées dans le cas de la France, en plus de l'appareillage d'ensemble de la planification urbaine, par une loi spécifique, la loi du 3 janvier 1986 "relative à l'aménagement, la protection et la mise en valeur du littoral", qui se substituait à une "directive nationale d'aménagement du littoral" prise sept ans plus tôt, en 1979. Cette loi s'applique à l'espace littoral, en y introduisant des contraintes plus fortes sur la gestion de l'espace. La mise en oeuvre de cette législation pose aujourd'hui un problème sensible de mode d'application du droit.

L'espace littoral français fait aussi l'objet d'un mécanisme, à la fois fiscale et d'intervention foncière, sur les "Espaces Naturels Sensibles". Son application ne se limite d'ailleurs pas à la zone littorale.

L'insuffisance des procédés réglementaires et fiscaux a enfin conduit à créer un mécanisme d'intervention foncière directe exercée par un organisme ad hoc, le Conservatoire de l'Espace Littoral et des Rivages Lacustres, crée en 1975.

Au plan européen, une résolution relative à la protection des zones côtières avait été adoptée dès le 26 octobre 1973 par le Comité des ministres du Conseil de l'Europe. Soulignant l'acuité du problème posé ("état critique d'une grande partie des côtes d'Europe et extrême gravité des destructions esthétiques et biologiques dues notamment à l'implantation anarchique des constructions d'immeubles, des industries et des équipements touristiques dans la zone littorale"), la résolution avait posé un certain nombre de principes d'action pour en assurer la protection et le libre accès du public par un ensemble de mesures globales, en particulier "découper le littoral en zones homogènes en vue de répartir judicieusement les utilisations à l'intérieur de ces zones, en tenant compte de leurs influences réciproques et des diverses composantes de l'environnement", et de "réglementer tout le développement dans les zones littorales, notamment par la création d'une servitude *non aedificandi* sur une bande appropriée de terrain en bordure de mer et la subordination de l'octroi d'autorisations à des conditions particulièrement strictes".

De telles recommandations de principe ont été reprises, élaborées, étendues par plusieurs organisations internationales. Elles se sont souvent traduites par des législations *ad hoc*, par exemple en France par la loi de 1986. Maints observateurs constatent pourtant que la situation du littoral méditerranéen ne semble pas s'améliorer, que ce soit en termes de respect des équilibres existants entre protection et développement, entre urbanisation, agriculture et espaces naturels protégés ou en termes de qualité paysagère, et la "bulle immobilière" qui s'est développé dans la deuxième moitié des années 1980, par exemple en Espagne ou en France, a aggravé les choses. En France, par exemple, le nombre de permis de construire dans les deux départements du Var et des Alpes Maritimes est passé de 20 939 en 1986 à 35 619 en 1989. Un tel constat conduit à analyser les politiques suivies, leur impact et à tenter de formuler quelques propositions.

I. La politique du littoral en France. La "loi Littoral"

La perspective redoutée du "remplissage" du littoral méditerranéen ne date pas d'hier. Dès 1923, l'urbaniste Henri Prost, présentant un premier "plan d'aménagement et de mise en valeur de la côte d'Azur", indiquait: "nul doute que dans un avenir peu éloigné, toutes les rives de la Méditerranée, depuis Gênes jusqu'à Marseille, ne formeront qu'une suite ininterrompue d'agglomérations et d'habitations dispersées, et cela par la force des choses, avec ou sans plan d'aménagement".

Ce ne sont certes pas les "plans", "lois", "directives" et autres "schémas" qui ont manqué, dont nous retracerons les principaux. Mais il faut aussi s'interroger sur la "force des choses" de Henri Prost, synthèse des mécanismes du marché foncier et du fonctionnement des systèmes politico administratifs.

Nous ne nous étendrons pas ici sur le principe de domanialité publique qui s'applique aux rivages dont la portée est générale et ancienne puisqu'elle trouve son origine dans une ordonnance royale de 1681 prise sur la proposition de Colbert, dite "ordonnance de la marine", ni sur le principe de l'accès au domaine public maritime. Fondé sur une coutume ancienne, dite du "sentier du douanier", ce dernier a acquis une consistance juridique avec la création d'une servitude de passage sur les propriétés riveraines du domaine public maritime (loi du 31 Décembre 1976). Cette servitude s'applique de plein droit sur une bande de trois mètres bordant le littoral.

En plus des mécanismes généraux de la planification urbaine et de l'ensemble des règles du droit de l'urbanisme et du droit de l'environnement, c'est en 1979 qu'a été approuvé par le gouvernement un texte d'ensemble, la "directive littoral", qui comporte un vaste ensemble de mesures concernant le développement de l'urbanisation, la protection des espaces naturels, la protection du rivage (la "bande des 100 m"), le régime des concessions et enfin la pratique du camping caravaning.

Bien que ces dispositions aient eu un caractère obligatoire et opposable aux permis de construire, le texte de la directive a été repris et est devenu loi en 1986[1]. Ce texte a modifié plusieurs points, précisé et renforcé les uns (le champ d'application a par exemple été étendu aux communes riveraines de plus de 100 ha, la servitude de passage a été renforcée), assoupli d'autres (possibilité notamment d'étendre l'urbanisation de façon limitée dans "les espaces proches de rivage", implantation de campings de faible importance dans les espaces naturels), et adaptée d'une façon générale au contexte de la décentralisation intervenue en France en 1982-1983.

Le tableau suivant met en regard les principales dispositions de la directive de 1979 et celles de la loi de 1986.

[1] Loi du 3 janvier 1936 relative à l'aménagement, la protection et la mise en valeur du littoral.

LES DEUX TEXTES EN PARALLÈLE

La directive	Le projet de loi
Extension de l'urbanisation	
Elle doit : — éviter un développement linéaire — ménager des zones agricoles ou naturelles entre les zones urbanisées — être reportée le plus possible en arrière du rivage	Elle doit se réaliser : — en continuité avec les agglomérations et villages existants — en hameaux nouveaux intégrés à l'environnement — dans les secteurs d'urbanisation diffuse
Les espaces naturels	
Hors des zones actuellement urbanisées des agglomérations existantes, la construction est interdite dans les espaces naturels préservés ou à préserver en raison de leur destination agricole, forestière ou aquacole, ou de la qualité des paysages	Des prescriptions particulières peuvent préciser les conditions d'application de l'article L 146.4 (article concernant les espaces naturels.)
Les documents d'urbanisme rendus publics dont les dispositions applicables aux zones naturelles ou aux zones d'urbanisation future ne sont pas compatibles avec les orientations de la présente directive sont réexaminés et réajustés à cette fin à l'occasion de leur approbation.	Les documents d'urbanisme doivent préserver les espaces terrestres et marins, sites et paysages remarquables ou caractéristiques du patrimoine naturel et culturel du littoral et les milieux nécessaires au maintien des équilibres biologiques.
Protection du rivage	
Une bande littorale d'une profondeur de l'ordre de 100 mètres doit être préservée, sauf cas particulier.	En dehors des espaces urbanisés, dans une bande littorale de 100 mètres, à compter de la limite haute du rivage,... sont interdites toutes constructions, installations ou aménagements de routes... Dans les espaces proches du rivage n'est admise qu'une extension limitée de l'urbanisation.
Les plages	
Lors de leur premier renouvellement, les concessions de plage sont révisées aux fins de réduire les espaces accueillant une exploitation commerciale...	Les limitations à l'usage libre et gratuit des plages sont interdites dans le cas de concessions nouvelles de plages naturelles ne constituant pas le renouvellement des concessions existantes.
Le camping-caravaning	
Les installations légères de loisirs sont à implanter de préférence dans les zones urbaines actuelles ou dans certains secteurs naturels délimités par les documents d'urbanisme.	En dehors des espaces urbanisés, des terrains peuvent être aménagés pour l'accueil d'installations touristiques légères.

La loi littoral et le développement de l'urbanisation

Sur le littoral méditerranéen français, la question du développement de l'urbanisation - en particulier les résidences secondaires et les équipements touristiques - est aujourd'hui au coeur du problème. L'industrie n'y exerce plus la même pression, et se pose davantage le problème de la reconversion d'activités en crise, comme on le voit aujourd'hui avec les chantiers navals dans le département du Var ou la sidérurgie à Fos-sur-Mer, dans les Bouches du Rhône.

En ce qui concerne l'urbanisation, la loi littoral a imposé un certain nombre de règles qui se superposent aux documents locaux d'urbanisme, les schémas directeurs et les plans d'occupation des sols, dont on doit rappeler ici qu'ils sont de la responsabilité des communes.

Le dispositif général est de plus en plus contraignant au fur et à mesure que l'on se rapproche du rivage.

Sur l'ensemble du territoire communal, la loi pose un principe général: l'extension de l'urbanisation doit se réaliser "soit en continuité avec les agglomérations et villages existants, soit en hameaux nouveaux intégrés à l'environnement". On voit que cette disposition, résultat d'arbitrages difficiles, préserve une certaine flexibilité, et qu'elle laisse une part importante au jugement au cas par cas sur la notion de "hameau nouveau".

La règle est plus précise pour les espaces "proches du rivage ou des rives de plans d'eau", dans lesquels l'urbanisation doit être "justifiée et motivée dans le plan d'occupation des sols selon des critères liés à la configuration des lieux ou à l'accueil d'activités économiques exigeant la proximité immédiate de l'eau.

Cette plus grande précision laisse néanmoins ouverte la définition de la "proximité".

Enfin, pour l'espace très proche du rivage, les constructions sont interdites sur une bande littorale de 100 m à compter de la limite haute du rivage, cette bande pouvant être élargie pour les motifs liés à la sensibilité des milieux ou à l'érosion des côtes.

A ce dispositif à trois vitesses se surajoute une règle générale que doivent respecter les documents d'urbanisme et les autorisations d'occuper l'espace: "préserver les espaces terrestres et marins, sites et paysages remarquables ou caractéristique du patrimoine naturel et culturel du littoral et les milieux nécessaires au maintien des équilibres biologiques". Vaste catégorie ! Un décret du 20 septembre 1989 a précisé les neuf catégories d'espaces concernés, par exemple les "dunes, landes côtières, plages, falaises et les abords de celles-ci", les "zones humides et milieux temporairement immergés", ou encore "les parties naturelles des sites inscrits ou classés en application de la loi de 1930.

Pour le reste, on remarque que la protection des 100 m a été renforcée par rapport à la directive de 1979, qui ne donnait à cette distance qu'un rôle indicatif, et il en est de même en ce qui concerne la desserte routière, avec une distance minimale de 200 mètres pour les nouvelles routes de transit et l'interdiction de nouvelles routes sur ou le long du rivage, sauf contrainte liées à la configuration des lieux ou à l'insularité.

L'ensemble est donc potentiellement très restrictif. Mais son impact dépend évidemment de la façon dont il est appliqué, d'autant plus que plusieurs de ses dispositions ont un caractère qualitatif, laissant place à l'interprétation et donc au contrôle du juge.

La loi Littoral, la décentralisation et la bulle immobilière

Un certain consensus apparaît pour estimer que l'équilibre développement-protection n'a pas tenu et que la "consommation" du littoral, en particulier par de grandes opérations touristiques, des golfs immobiliers ou des ports de plaisance s'est développé de façon excessive.

Il serait inadéquat d'imputer ces excès aux seules insuffisances de la loi. Ils sont aussi - surtout - la résultante de la concomitance de deux phénomènes distincts: la décentralisation et le développement d'une bulle spéculative sur les marchés immobiliers.

La décentralisation atteint au milieu des années 1980 son régime de croisière. Elle a dévolu l'essentiel des pouvoirs d'urbanisme (plans d'urbanisme, autorisations de construire) aux communes, souvent de petite taille (il existe 36 000 communes en France).

Jalouses de leurs prérogatives, celles-ci, du moins celles, nombreuses, qui nourrissaient d'ambitieux projets de développement touristique, n'ont pas immédiatement intégré la contrainte nouvelle que représentait l'entrée en application de la loi. La théorie aurait voulu que les plans d'urbanisme locaux (les POS) soient aussitôt révisés pour entrer en conformité avec la loi. Le mouvement n'a été que très progressif, et la durée de gestation du décret d'application de l'article relatif aux "espaces remarquables" y a contribué.

Ce décret n'est d'ailleurs intervenu qu'à la fin de l'année 1989, au moment précisément où commençait à peine à se dégonfler la puissante "bulle" spéculative qui s'était développée à partir de 1985-86 dans plusieurs pays, par exemple la France et l'Espagne. Ce boom immobilier, fondé sur la modification des anticipations des acteurs sur les marchés fonciers et immobiliers, a porté surtout sur les espaces les plus riches de valorisation potentielle, la région parisienne et la Côte d'Azur en France, la Catalogne et l'Andalousie pour l'Espagne, renforcée dans ce dernier cas par les événements qu'ont constitué respectivement les Jeux Olympiques de Barcelone et l'Exposition Universelle de Séville.

Le gonflement de la bulle s'est produit précisément au tout début de l'entrée en vigueur de la loi littoral, et dans un contexte politique modifié où la politique de déréglementation était considérée comme prioritaire(en France, loi de décembre 1986 sur l'offre foncière, qui assouplissait notamment les documents d'urbanisme, surtout les POS).

La simultanéité de ces évolutions rend difficile la mise en évidence de liens de causalité fermes entre la mise en oeuvre des textes, l'évolution des prix et le volume de construction neuve. Mais elle explique en tout cas que le boom immobilier ait largement emporté sur son passage, à la fin des années 80, de trop fragiles barrages réglementaires qui n'avaient pas encore trouvé leur place dans l'urbanisme décentralisé.

La bulle immobilière s'est aujourd'hui dégonflée, les prix des terrains et des immeubles commencent à retrouver des prix davantage en rapport avec les éléments fondamentaux de l'économie. C'est dans ce contexte calme que l'application de la loi et la jurisprudence des tribunaux dans l'interprétation de la loi posent précisément un problème nouveau dans le contexte français, et font aujourd'hui l'objet d'un riche débat.

Le maire, le promoteur et le juge ou les risques de l'urbanisme de prétoire

Le droit français, comme dans une large mesure le droit italien et le droit espagnol, sont organisés autour du droit écrit, procédural, plaçant de façon générale le juge dans une situation de compétence liée, c'est à dire que les conflits peuvent être tranchés de façon objective sans qu'il soit nécessaire de procéder à l'appréciation concrète des situations. En matière de gestion de l'espace, cette conception du droit se traduit par le rôle central des documents cartographiques où chaque espace est affecté de règles explicites décrivant de façon précise ce qu'il est possible de faire en répondant aux questions de type d'usage, de localisation, de hauteur, de densité etc.

Cette conception de la loi diffère de la conception anglo-saxonne, notamment nord-américaine, où le droit est essentiellement d'origine jurisprudentielle, sous la contrainte du respect de principes généraux posés par la constitution et les lois fédérales. Les règles locales, très diverses dans leur nature et leur formulation, sont alors régulièrement déférées devant le juge dont le rôle d'appréciation est décisif.

La loi littoral a marqué en France une avancée dans ce sens, dans la mesure où elle a posé un certain nombre de règles qualitatives que doivent respecter les documents d'urbanisme locaux et les autorisations individuelles. C'est alors, en cohérence avec la décentralisation, aux communes qu'il appartient d'interpréter ces règles, sachant qu'elles pourront être soumises au contrôle du juge, aussi bien par le représentant de l'Etat que par des associations de protection de l'environnement. Parmi ces règles qualitatives, les principales ont trait à la notion d'"espace urbanisé", d'"espaces littoraux remarquables" dont l'énumération précise n'empêche pas d'avoir des interprétations différentes, de "hameau nouveau intégré à l'environnement" d'"activités économiques exigeant la présence immédiate de l'eau" ou encore d'"espaces proches du rivage". L'émergence de ces règles qualitatives, l'usage qui en a été fait, même s'il est resté limité, devant les tribunaux administratifs, et un certain nombre d'annulations d'opérations d'urbanisme importantes ont nourri un débat parfois vif mettant en cause le "gouvernement des juges", dénonçant la complexité de la loi et aussi le retour de l'Etat qui serait contraire à l'esprit de la décentralisation.

Ces critiques, d'ailleurs en partie contradictoires, doivent être remises à leur juste place[2].

En premier lieu, même si le contentieux a subi une certaine augmentation depuis quelques années, la part des autorisations qui fait l'objet d'un recours devant le juge reste très faible (moins de 0,3%). Plus sérieux sur ce point est le dysfonctionnement du système par la durée des instances, ou la non exécution des décisions des tribunaux.

On doit aussi se préoccuper de l'argument d'insécurité juridique, souvent dénoncé avec vigueur par les opérateurs, mais aussi par les élus locaux. Il est de fait que l'accumulation de règles procédurales et le caractère encore incertain à ce jour de certains points de jurisprudence conduit à une insécurité que l'on peut estimer excessive devant l'hypothèse d'un recours. Mais c'est probablement par l'affermissement progressif de la jurisprudence plus que par la modification de la loi (dans quel sens?) que l'on parviendra à réduire cette insécurité.

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[2] Voir Erwann Le Cornec - La défense du littoral a besoin de la loi. Etudes Foncières, no. 69, décembre 1995.

Un changement majeur réside dans le nouveau partage des responsabilités entre l'Etat et les communes. Alors qu'avant la décentralisation, l'Etat était à la fois le producteur et le contrôleur des règles, il est maintenant dans une position beaucoup plus ambiguë, à la fois dans une position de négociation permanente avec les collectivités locales et d'éventuel contrôleur chargé de porter devant le juge ce qu'il estime illégal.

Le relatif sous-développement de ce deuxième aspect, souligné par un rapport du Conseil d'Etat[3], montre que le thème du "retour de l'Etat", s'il est potentiellement contenu dans la loi littoral, n'est pas en fait devenu une réalité. On peut d'ailleurs le déplorer si l'on estime que la politique du littoral fait partie des missions importantes dont l'Etat est le garant, d'autant plus que le choix de la décentralisation au niveau communal a conduit à une excessive parcellisation des pouvoirs peu compatible avec une gestion cohérente du littoral.

Pour reprendre le propos de E. le Corner "le problème du littoral n'est pas d'ordre législatif. La loi littoral ne pose que peu de questions véritables (les juges sont là pour débrouiller l'écheveau et reconnaissons qu'il le font de façon globalement satisfaisante). Le problème est d'ordre politique. A partir de là, le droit du littoral n'est plus qu'un alibi".

II. Un acteur foncier public: le Conservatoire du Littoral

Les dispositifs législatifs et réglementaires de protection du littoral ne constituent pas un rempart à toute épreuve. La loi peut changer, son application locale laisse des souplesses, le contrôle du juge ne s'exerce qu'avec parcimonie, les décisions du juge, pas toujours appliquées, interviennent souvent trop tard. Cette vulnérabilité de la règle a conduit à envisager, au milieu des années 70, l'intervention foncière directe par un opérateur public qui en devenant propriétaire, garantirait la protection pérenne d'espaces naturels convoités pour d'autres usages.

Le Conservatoire de l'Espace Littoral et des Rivages Lacustres est un établissement public, financé principalement par le budget de l'Etat (Ministère de l'Environnement). Il a été créé en 1975 pour assurer l'ambitieuse mission de "mener une politique foncière de sauvegarde de l'espace littoral, du respect des sites naturels et de l'équilibre écologique". Son domaine d'intervention est précisément délimité par le décret de création, essentiellement les communes riveraines des mers, océans et lacs de plus de 1 000 ha. Son travail essentiel consiste à intervenir sur les sites menacés pour les acquérir en pleine propriété ou les soumettre à une servitude qui assure leur protection ou leur bonne gestion. Pour ce faire, il dispose de toute la gamme des prérogatives de puissance publique pour ses acquisitions foncières: expropriation pour cause d'utilité publique (très rarement utilisée), droit de préemption (par substitution à celui du département), acquisitions amiables, donations ou legs, et depuis un an la dation en paiement des droits de succession.

Classés dans son "domaine propre", les terrains du conservatoire sont inaliénables. Ils ne pourraient faire l'objet d'un déclassement - et par suite être vendus - que par décret du Conseil d'Etat pris sur proposition du Conseil d'Administration pris à la majorité des 3/4. Cette procédure très contraignante n'a jamais été utilisée à ce jour.

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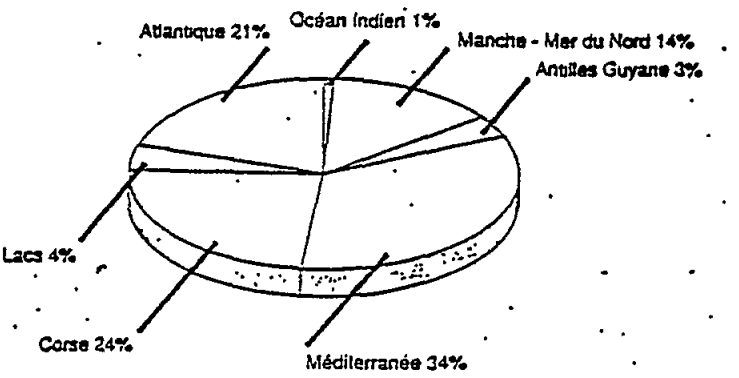
[3] Conseil d'Etat -Urbanisme, pour un droit plus efficace, Paris, 1992.

SUPERFICIES ACQUISES

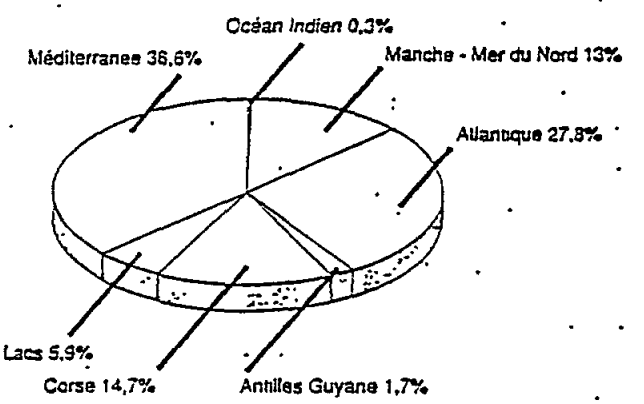
La répartition des acquisitions du Conservatoire entre les façades littorales est très différente selon que l'on considère les surfaces acquises, *oyens financiers engagés ou le nombre d'actes passés.* L'urgence des problèmes posés et la structure foncière font par exemple que le littoral de la Méditerranée, rse comprise, qui représente 31,5 % du littoral français, a bénéficié de 58 % des acquisitions en surface, pour moins de 14 % des actes passés, à l'inverse du littoral atlantique beaucoup plus morcelé 3 % des transactions pour la seule région de Bretagne).



COÛT DES ACQUISITIONS

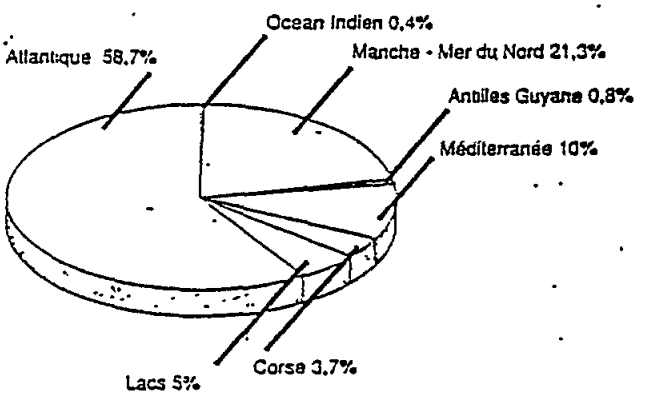
(francs courants)

Le coût global des acquisitions, réalisées entre 1976 et 1994, s'est élevé à 1144 MF (en francs courants) et 1540 MF (en francs constants, base 1992).



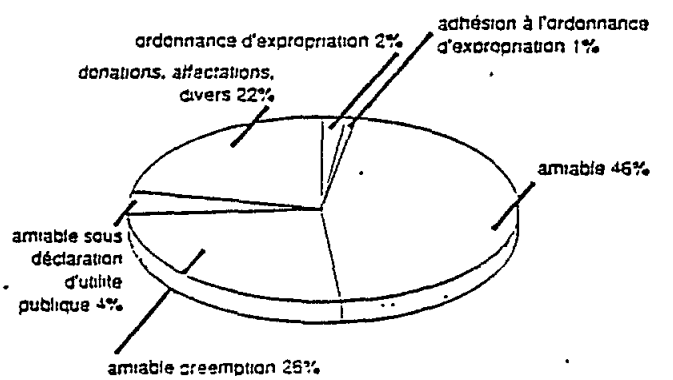
NOMBRE D'ACTES NOTARIÉS

Pour constituer les 339 domaines de son patrimoine, le Conservatoire a été amené à signer, en moyenne, un acte tous les deux jours.



ROCÉDURES D'ACQUISITION de 1990 à 1994

Les acquisitions amiables sont la pratique de loin la plus courante utilisee par le Conservatoire. Le nombre de preemptions augmente régulièrement : *exceptionnelles dans les premières années* les acquisitions amiables dans les perimetres de preemption ont represente plus de 55 % des actes signes en 1994.

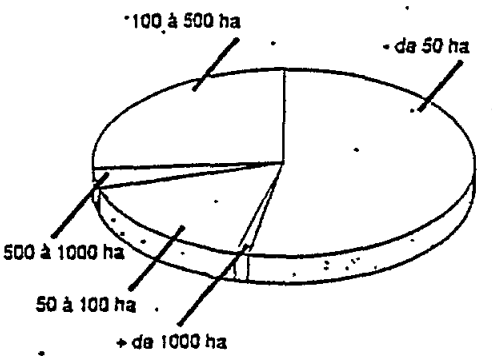


SURFACE DES SITES ACQUIS 1976-1994

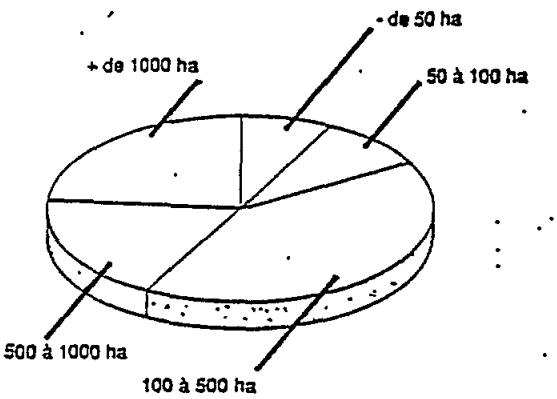
Les 103 sites de plus de 100 ha représentent 83 % du patrimoine du Conservatoire dont ils constituent l'armature. Toutefois, 70 % des sites acquis ont moins de 100 ha : soit parce qu'il s'agit d'acquisitions partielles sur des sites potentiellement plus vastes, soit parce qu'il est aussi dans la mission de l'établissement d'aider à la solution de problèmes ponctuels, particulièrement importants pour l'écologie et le paysage.

SURFACES	SITES CONCERNÉS nb	SITES CONCERNÉS %	SUPERFICES PAR CLASSE ha	SUPERFICES PAR CLASSE %
+ 1000 ha	4	1,2 %	10402	23,4 %
500 à 1000 ha	11	3,2 %	8352	18,8 %
100 à 500 ha	88	26,0 %	18286	41,1 %
50 à 100 ha	57	16,8 %	4035	9,1 %
- de 50 ha	179	52,8 %	3443	7,73 %
TOTAL	339	100 %	44518	100 %

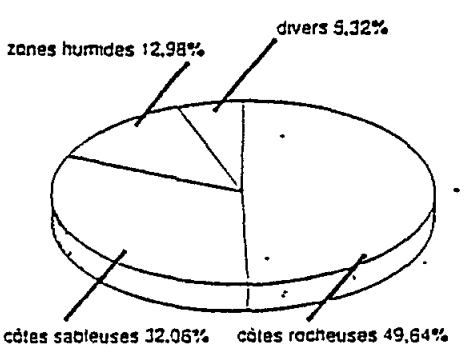
NOMBRE DE SITES par classe de surface



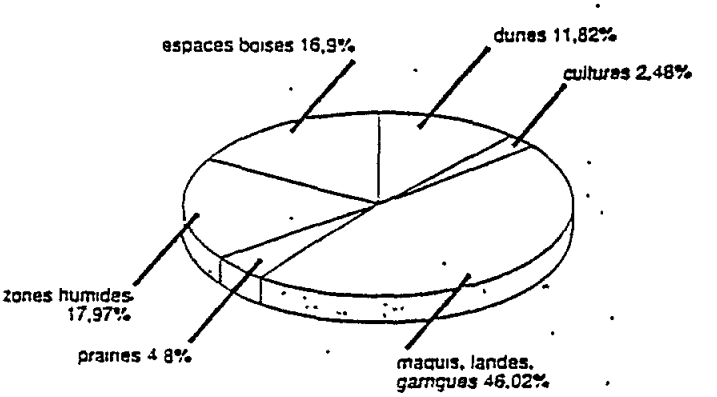
SUPERFICIES ACQUISES par classe de surface



RÉPARTITION DU LINÉAIRE COTIER PROTÉGÉ



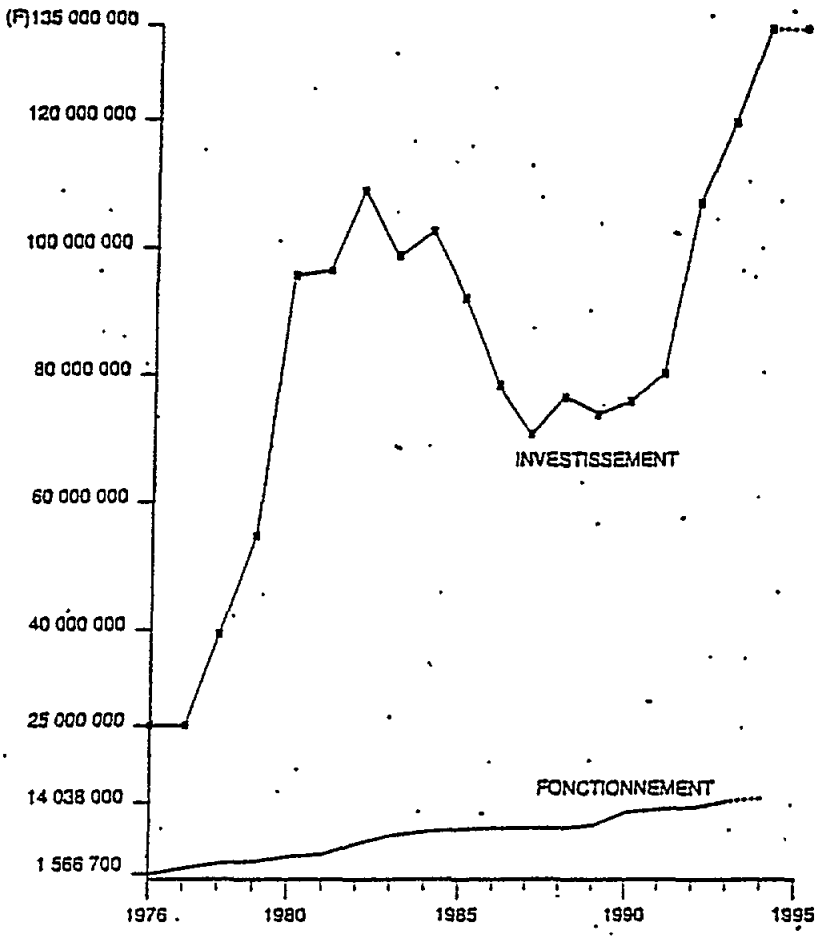
NATURE DES MILIEUX PROTÉGÉS

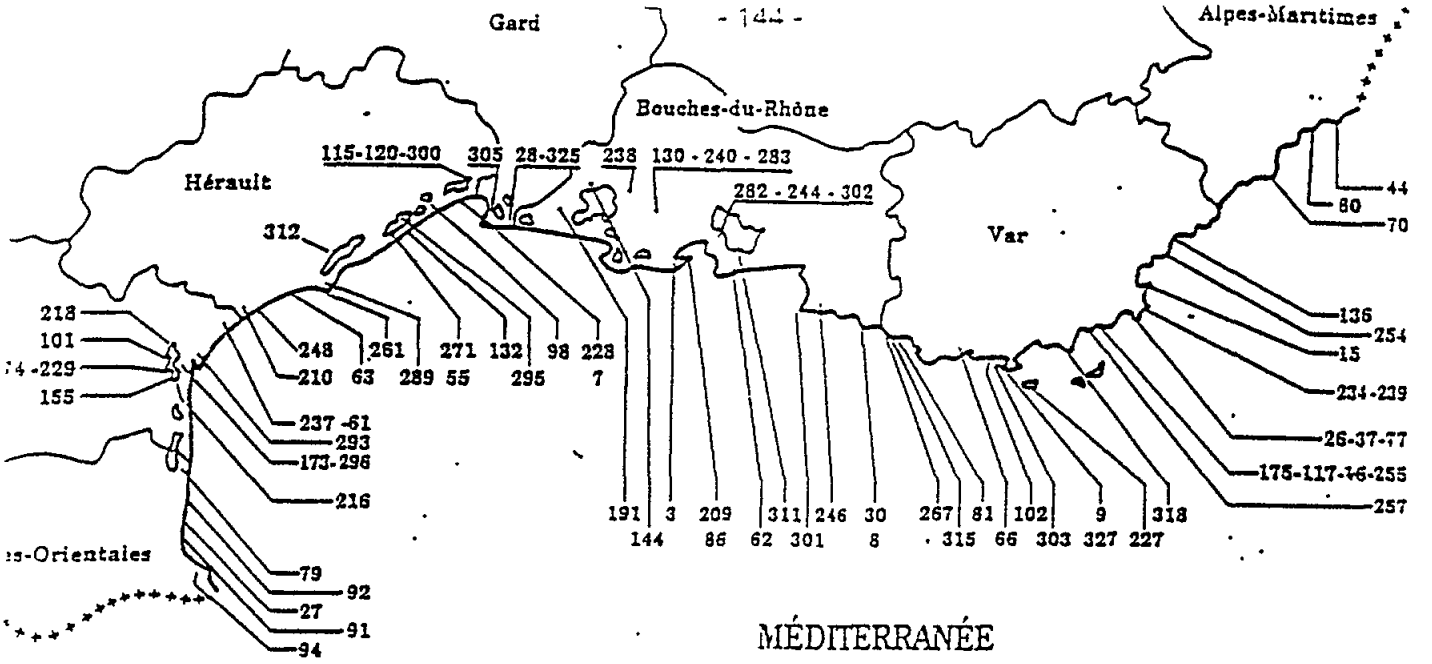


BILAN CUMULÉ 1976-1995

Évolution des moyens financiers de 1976 à 1994 (francs courants)

Les montants des dotations figurant sur ces graphiques correspondent aux dotations constatées en fin d'année (budget voté réduit des annulations éventuelles). Pour 1995, les dotations correspondent au budget voté.





MÉDITERRANÉE

ANGUEDOC-ROUSSILLON

rénées-Orientales - 66

de les Forques Collioure	*11 ha*
s Larrieu Argelès	*53 ha*
Lido Canet-Saint-Nazaire	*894 ha*
Ribère Torreilles	*49 ha*
s de l'Isle Le Barcarès	*47 ha*

ıde - 11

maine de Frescati Port-la-Nouvelle	*79 ha*
Sainte Lucie Port-la-Nouvelle	*227 ha*
de l'Aute Sigean	*40 ha*
de Planasse Peyriac-de-Mer	*19 ha*
Doul, La Suline Peyriac-de-Mer	*171 ha*
ırnebelle Narbonne	*30 ha*
Grand Castélou Narbonne	*157 ha*
se des Galères Narbonne	*5 ha*
Auzils Gruissan	*708 ha*
Pustalet Fleury-d'Aude	*464 ha*
nt Louis la Mer Fleury-d'Aude	*134 ha*

erault - 34

ng de Vendres Vendres, Lespignan	*56 ha*
ge de Vendres Vendres	*35 ha*
Orpellières Sérignan, Valras-Plage	*130 ha*
Grande Cosse Vias	*1 ha*
Bagnas Agde, Marseillan	*36 ha*
de Baugé Marseillan	*28 ha*
ns de Frontignan Frontignan	*214 ha*
Aresquiers Frontignan, Vic-la-Gardiole	*138 ha*
ng de Vic Villeneuve-les-Maguelone, Vic-la-Gardiole	*1346 ha*
nes de Villeneuve Villeneuve-les-Maguelone	*199 ha*
ng de Méjean Lattes, Palavas	*178 ha*
Petit Travers Mauguio	*157 ha*
Grand Travers La Grande-Motte	*206 ha*
ng de l'Or Candillargues	*79 ha*
uguières Lansargues	*225 ha*
Petit Cogul Marsillargues	*71 ha*

rd - 30

e Neuve Le Grau-du-Roi	*108 ha*
s du Boucanet Le Grau-du-Roi	*84 ha*
maine de Capelude Le Grau-du-Roi	*186 ha*

PROVENCE - ALPES - COTE D'AZUR

Bouches du Rhône - 13

191	Mas de la Cure Les Saintes-Maries-de-la-Mer	*287 ha*
144	Terre de Méjanes Les Saintes-Maries-de-la-Mer	*64 ha*
238	Bois de Tourtoulen Arles	*44 ha*
130	Ligagneau Arles (1)	*449 ha*
240	L'Etourneau Arles (1)	*453 ha*
283	Négreiron Arles	*277 ha*
3	La Palissade Arles	*702 ha*
86	Le Mazet Port-Saint-Louis-du-Rhône	*95 ha*
209	They du Levant Port-Saint-Louis-du-Rhône	*49 ha*
282	Cadéraou Saint-Mitre-les-Remparts	*147 ha*
244	La Clapière Saint-Mitre-les-Remparts	*115 ha*
302	Figuerolles Saint-Mitre-les-Remparts	*121 ha*
311	Etang de Bolmon Châteauneuf-les-Martigues	*411 ha*
62	La Côte Bleue Ensuès-la-Redonne - Le Rove	*3145 ha*
301	Archipel de Riou Marseille	*158 ha*
246	Domaine de Vaufrèges Marseille	*254 ha*
8	La Fontasse Marseille, Cassis	*243 ha*
30	Presqu'île de Port Miou - Plaine du Ris Cassis	*132 ha*

Var - 83

267	Pointe Grenier Saint Cyr sur-Mer	*15 ha*
315	Le Deffend Saint Cyr-sur-Mer	*25 ha*
81	La Galère Saint-Cyr sur-Mer	*30 ha*
66	Bois de Courbebaisse Le Pradet	*6 ha*
102	Font Brun Carqueiranne	*20 ha*
9	Escampo - Bariou Hyères	*44 ha*
327	Presqu'île de Giens Hyères	*45 ha*
303	Etang de l'Estagnet Hyères	*10 ha*
227	Oustaou De Diou Hyeres	*12 ha*
318	Cap Blanc - Cap Bénat Borme-les-Mimosas	*7 ha*
257	Domaine du Rayol Rayol-Canadel-sur-Mer	*19 ha*
175	Vallon du Fenouillet Cavalaire (2)	*35 ha*
117	Pointe du Dattier Cavalaire (2)	*6 ha*
16	Castéou dou Souléou Cavalaire (2)	*16 ha*
255	Domaine de Bonporteau Cavalaire (2)	*26 ha*
37	Cap Mimosa La Croix-Valmer	*114 ha*
26	Cap Lardier La Croix-Valmer	*151 ha*
77	Briande La Croix-Valmer	*11 ha*
239	Cap Taillat La Croix-Valmer	*33 ha*
234	L'Escalet Ramatuelle	*46 ha*
15	Cap Camarat Ramatuelle	*49 ha*
254	La Gaillarde Roquebrune-sur-Argens	*266 ha*
136	Etangs de Villepey Frejus	*202 ha*

Alpes-Maritimes - 06

70	Bois de la Garoupe Antibes	*9 ha*
80	Le Mont Vinaigrier Nice	*25 ha*
44	Le Cabanon - Le Corbusier Roquebrune-Cap-Martin	*1 ha*

(1) Marais de Vigueirat
(2) Corniche des Maures

A la mi-1995, le Conservatoire du Littoral était propriétaire de 44 616 ha d'espaces naturels répartis sur 339 sites.

Les tableaux suivants retracent l'activité du Conservatoire depuis ses origines, en particulier les acquisitions sur la Côte Méditerranéenne.

Ce bilan quantitativement important est le résultat d'une action longue et continue, menée par un organisme dont les dimensions restent réduites (33 personnes au total), dans le cadre d'une gestion où les acquisitions foncières représentent l'essentiel du budget.

Alors qu'il est actuellement envisagé de créer soit un "Conservatoire méditerranéen", soit des organismes analogues au Conservatoire français, par exemple en Tunisie, il vaut la peine de commenter l'action du Conservatoire français du littoral.

Le premier point, le plus délicat, concerne la stratégie d'acquisition, dont la définition des priorités n'est pas facile à mettre en oeuvre, quand bien même celles-ci entrent dans des programmes pluriannuels.

Une première remarque concerne la pertinence de l'acquisition d'espaces qui sont déjà soumis à une protection réglementaire forte, par exemple l'acquisition de sites classés au titre de la loi de 1930 ou de réserves naturelles.

Sur ce point, on peut remarquer que ces réglementations, même le classement selon la loi 1930, n'ont pas toujours empêché le développement de constructions et la dégradation des sites. La question difficile est plutôt d'assurer la cohérence dans le temps entre les politiques locales et les programmes d'acquisition du Conservatoire. La gestion décentralisée du Conservatoire au niveau de "Conseils de Rivage" est ici un atout important pour cette harmonisation, mais il est clair qu'elle ne résout pas tout.

Quels terrains acheter? On peut rêver d'un programme à long terme parfaitement cohérent, reposant sur une batterie de critères combinant l'urgence et la plus ou moins grande réversibilité de la menace, la richesse biologique, la dégradation rampante. Concrètement, pendant sa montée en régime de croisière, le Conservatoire a dû combiner ces critères avec la saisie d'opportunités lorsqu'elles se présentaient, ainsi que le niveau des prix.

La mise en oeuvre de la loi littoral, et notamment le décret d'application relatif aux "espaces remarquables" permet maintenant d'aller plus avant dans la définition d'une véritable stratégie de dissuasion. Mais elle passe aussi, c'est une évidence, par une permanente concertation avec les communes - qui auront très généralement une responsabilité dans la gestion ultérieure du site - et avec le département, qui exerce la responsabilité première dans la gestion des espaces naturels sensibles et du droit de préemption auquel ceux-ci sont soumis.

L'intervention du Conservatoire, établissement public, pose la question plus générale de la propriété foncière publique. Est-ce une bonne solution? Est-ce la meilleure? Jusqu'à présent, l'expérience française du Conservatoire permet de répondre positivement sur le premier point, mais sans répondre entièrement à l'objection sur la question de la gestion des terrains acquis, pas toujours assurée de façon satisfaisante, de plus en plus coûteuse, pouvant poser des problèmes à l'organisme gestionnaire dans ses rapports avec les acteurs concernés.

Sur le deuxième point, l'acquisition en toute propriété, si elle parait la garantie la plus sûre, n'est pas la seule formule imaginable. La protection (ou plus largement le mode d'utilisation d'un site) peut être garantie par la voie de servitudes conventionnelles. Appliquée dans un certain nombre de cas en France par le Conservatoire du Littoral, cette technique juridique exige en France que les parties au contrat soient toutes deux propriétaires de biens connexes, le fonds dominant et le fonds servant ce qui en limite considérablement la portée.

On pourrait - sans révolution juridique - en étendre la portée en limitant ou supprimant l'exigence du fonds dominant et du fonds servant, se rapprochant ainsi de la technique nord-américaine des "easements", servitude de droit privé s'appliquant sans limitation de durée, liée à l'immeuble et non à la personne du propriétaire.

Outre sa plus grande flexibilité, et le fait que cela règle le problème des coûts de gestion, cette méthode est évidemment beaucoup moins coûteuse que l'acquisition en pleine propriété. Elle est également largement utilisée par le National Trust britannique, en particulier pour son patrimoine bâti.

Annexe: les espaces naturels sensibles

Dès la fin des années 50, le fort développement de l'urbanisation sur la Côte d'Azur avait conduit à la mise en place d'un dispositif original combinant un aspect réglementaire, un aspect fiscal et un outil d'intervention foncière. Les "périmètres sensibles", initialement limités à la Côte d'Azur, ont été aujourd'hui étendus sous le nom d'espaces naturels sensibles" à l'ensemble des départements littoraux.

Le choix appartient au département (il en est ainsi aujourd'hui de tous les départements littoraux). Dès lors que le département a fait ce choix, toute construction nouvelle donne lieu à perception d'une "taxe d'espace naturel sensible", assise sur la valeur de l'ensemble immobilier à construire, à un taux qui ne peut pas être supérieur à 2% (il est par exemple de 1,25 dans les Bouches du Rhône, de 1 dans le Var et de 2 dans les Alpes Maritimes).

Le montant de la taxe est une recette affectée. Son objet, initialement limité à l'acquisition d'espaces naturels, a progressivement été élargi aux dépenses d'aménagement et d'entretien, et une récente enquête a montré une certaine diversité - confirmant parfois au laxisme - dans l'utilisation effective du produit de la taxe. L'outil réglementaire consiste pour le département à limiter des périmètres d'espaces naturels, dans lesquels pourra s'exercer le droit de préemption, c'est-à-dire que le bénéficiaire de ce droit pourra se substituer à l'acquéreur pour acheter le terrain mis en vente.

C'était initialement le département qui était l'unique bénéficiaire du droit de préemption. Le bénéfice en a d'abord été étendu, par substitution, au Conservatoire du Littoral, puis aux communes, mais en conservant les mêmes principes d'affectation.

Les zones de préemption sont la cible privilégiée pour l'acquisition d'espaces naturels effectuée avec le produit de la taxe départementale d'espaces naturels sensibles.

Au delà des quelques dérives qui ont pu être observées dans le maniement combiné de ces trois outils, en particulier dans l'utilisation du produit de la taxe, et des réserves que les fiscalistes patentés ne manquent jamais d'adresser au principe même de la fiscalité affectée, le mécanisme présente un intéressant rapprochement entre développement et protection, qui n'est pas sans rappeler aux USA le jeu des "purchase of development rights", et peut s'apparenter à une sorte de mécanisme "pollueur payeur".

Mais il n'est pas non plus dépourvu d'ambiguïté: c'est précisément dans les départements où la construction est dynamique que l'on peut avoir une politique ambitieuse d'acquisition d'espaces naturels, sans que le lien entre les deux soit évident. Il y a donc là une certaine confusion de fait entre l'objectif de sauvegarde des espaces naturels de qualité et ce qui relève des objectifs normaux de l'urbanisme à travers notamment la planification urbaine.

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NATURAL ECOSYSTEMS MANAGEMENT

by

Dr Tobias Salathé

NATURAL ECOSYSTEM MANAGEMENT

PROBLEM STATEMENT

While the need to conserve the coastal area as an element of the natural and cultural heritage and as an essential base for economic and social development has long been recognized (e.g. Blue Plan, European Commission, OECD), the quality of the environment and of natural resources is continuing to deteriorate in most Mediterranean coastal regions. This situation is largely due to the absence of mechanisms allowing the complex relationships between human activities and the natural environment appropriately to be taken into account in the decision-making process.

This paper on natural ecosystem management will not deal with the following key thematic issues for sustainable development policies in coastal areas, as they are addressed by other contributions:

- agriculture and rural area management;
- fisheries, aquaculture and marine resource management;
- industry, pollution and energy resource management;
- tourism;
- small island management;
- economic instruments;
- urbanisation and land development control.

However, it is crucial to take all these issues into account to devise an integrated strategy for sustainable policies in the coastal area.

Coastal natural ecosystems: functions and values

In particular, Mediterranean coastal natural ecosystems include a large diversity of natural habitats, such as dunes, cliffs and rocky shores, coastal maquis and garigues, freshwater wetlands, saltmarshes, lagoons, river estuaries and deltas, sand and shingle beaches, mudflats, seagrass and seaweed beds, and (coral) reefs. These ecosystems support a great variety of plant and animal species, some of them economically important for fishing and aquaculture, hunting, livestock grazing, cutting of reeds, etc.

The natural ecosystems can function as important buffers for shoreline anchoring and reduction of erosion, flood storage, sediment and toxicant trapping, nutrient retention and recycling, recreation and heritage value. They are the only places where such ecological functions can take place. Destroy the natural ecosystems and these precious services are lost. Not all natural ecosystems possess all of the functions, and not all perform them with equal efficiency. However, a given natural ecosystem will usually have a range of different functions.

Problems of coastal natural ecosystems

Environmental problems in coastal zones can be divided into three general groups, those which are generated within the coastal area itself as a consequence of human use of coastal space or resources, those which originate from actions outside the coastal area, but which have consequences or impacts on the processes and ecosystems found within, and those that reflect the capacity of a country or society to address and correct the environmental problems through the implementation of sound management practices.

Inside the Mediterranean coastal area, the population growth patterns lead to an increasing competition for space and natural resources, both on land and at sea. Conflicts and interferences between alternate uses are reinforced by the seasonal variation in human pressure, with the highest number of people generally present in summer, when the local populations are multiplied by millions of external (often international) tourists, and when water availability is at its lowest.

The increased use of restricted space and natural resources provokes environmental problems which extend beyond the coastal area by affecting the freshwater balance of entire catchment areas, creating sediment, nutrient, and toxicant fluxes in coastal waters, and affecting the quality of the air through airborne pollutants. The magnitude and scale of these problems differ in space and time. The most important environmental problems in the Mediterranean coastal area concern public health issues (quality of drinking water and air, sewage and waste management), integrated coastal resources management, industrial pollution, water eutrophication through nutrient and sewage inflow, depletion of living resources (overfishing, overgrazing), and to a lesser degree consequences of climate change (desertification, flooding, erosion through subsidence and sea-level rise).

Human interference with the flux of freshwater and sediments to the coastal zone can create national or even international problems. The widespread construction of large dams in many Mediterranean countries, for hydro-electric power generation and for irrigation and water supply for growing tourist and urban areas, has altered the discharge of freshwater to coastal areas, hence changing their salinity. Sediments are trapped inland and the ecological characteristics of coastal wetlands are altered. In contrast, mining, mineral extraction and smelting operations, mobilising huge quantities of silts. Inadequate management of mine tailings and other mineral residues can lead to a wide range of downstream problems in estuaries and coastal areas through changes to natural habitats, sediment and water chemistry. Such impacts may only be apparent at considerable distance from the source and in almost all cases regulation and control of the discharge of such wastes falls outside the purview of the agency responsible for the management of the downstream receiving environment. Siltation in coastal areas provoked by land use changes, such as deforestation, overgrazing and agricultural developments is a problem in many regions.

Groundwater extraction in coastal areas (often for increased tourist demand) poses several major long-term problems, particularly under conditions of rising sea level. Sediment compaction following water or hydrocarbon extraction results in greatly enhancing relative sea level rise, resulting in problems of saline intrusion in estuarine areas and salinisation of groundwater.

River borne sediments, often high in nutrients, would normally be deposited on flood plains or in deltaic systems contributing to the high productivity of natural ecosystems and human food production in these areas. Loss of the sardine fishery of the Nile delta appears to have been a consequence of dam and barrage construction reducing nutrient flow to the coastal waters. Most Mediterranean deltas (Nile, Rhone, Po, Ebro, Evros, to name but the largest) suffer from the consequences of sediment starvation and are frequently sinking (loss of agricultural land).

Frequently, natural ecosystems have been transformed into urban or industrial areas, at the expense of potentially fertile agricultural land, highly productive coastal wetlands and shallow marine ecosystems. This reduces biodiversity. The local and regional disappearance of specific types of natural habitats often entails the extinction of particular species (or sub-species). For those which are endemic (i.e. restricted) to the Mediterranean basin, this equals their global extinction, i.e. the definite loss of their genetic diversity.

Historically, human centres along the coast tend to be located on or near estuaries and other natural harbour areas. The development of port facilities frequently occupies much of the land immediately adjacent to the coast in these areas. The estuaries themselves become recipients of pollution with both industrial and domestic effluents being discharged into them. This represents a major loss of biological resources since estuarine environments are generally among the most highly productive nearshore areas. Natural habitats are often degraded and their species are particularly affected through water misuse (over-extraction, drainage or flooding during the wrong season). Marine habitats are affected by water pollution through oil slicks and industrial run-offs (organic materials, heavy metals, toxicants), by algal blooms and reef decays provoked by uncontrolled sewage and solid waste disposal. The immense tourist pressure in the Mediterranean resulted in large stretches of previously pristine coast being developed for recreational purposes, characterised by the ribbon development of supporting infrastructure along a narrow strip of land along the coast. This goes hand in hand with the impoverishment of landscape values (heritage, recreation and aesthetic values, ecosystem functions).

Finally, natural ecosystems are also affected by inter-sectoral management problems at regional, national, and international level, such as a lack of environmental information, lack of knowledge of ecological processes in the coastal area, lack of indigenous expertise in coastal area management, lack of public awareness, inappropriate organisation of administration departments, inappropriate allocation of responsibilities, and shortages of resources, including finances and trained manpower.

POLICY FRAMEWORK

The guidelines and principles for coastal area development prepared by IUCN (The World Conservation Union) summarise in a concise and most appropriate way similar approaches adopted by FAO, OECD, UNCED and others. The methodology for (CICAP), as proposed by IUCN, has been applied in specific regions of the Mediterranean, most recently for the Albania coastal area management plan, supported by UNEP/MAP. It is therefore briefly summarised here to provide a general development planning framework within which specific management planning for natural ecosystems should take place.

Conflicts and compatibilities: integrated management

Any form of development will result in changes to natural ecosystems. Irreversible changes will automatically restrict the development opportunities and choices available to future generations. Recognising that different sectors of the user community are competing for coastal natural environments and resources, it is imperative that each sector understand the nature of planned developments in every other sector if a compromise and/or consensus is to be achieved.

All strategies for the protection, enhancement and sustainable use of the coastal environment and resources should be based on comprehensive observations and a sound, scientifically based understanding of marine ecology, ocean processes and their interactions with the terrestrial and atmospheric systems. Such an approach requires a greatly increased level of international cooperation and investment in science, education and training.

Developing strategies for coastal and nearshore natural environments requires a matrix analysis of potential and actual uses in terms of their compatibilities and differences. In attempting to integrate differing and often conflicting uses of the coastal area, it is important to recognise that the boundaries for one activity or use may not correspond to the boundaries for a second activity or use.

The seven steps of the CICAP process

A discrete set of actions should be undertaken to provide a planning and management framework that takes account of the uniqueness and complexity of each coastal location and planning situation. The process is not linear, in that there is no end point after which the process can be considered as having been completed. The process is a continuous, iterative one with intrinsic feedback routes that allow for future changes, continuous reassessment and redefinition of the sets of actions needed (cf. **Figure 1**, taken from Pernetta & Elder 1993).

1) **Problem definition:** — The development objectives and the scale within which these objectives are to be met must be defined. Furthermore, the scope of the coastal area planning activity must be decided. It has to identify the relevant sectoral elements (e.g. fisheries, tourism, agriculture), the spatial limits of the coastal area considered, and the extent of the institutional and financial resources available for addressing the planning objectives.

2) **Assessment and analysis:** — After agreement on the objectives and scope of the planning exercise, it is necessary to establish whether these initial objectives can be realised within the defined scope. The assessment should cover three elements: *a)* the coastal resources to be developed and the environmental conditions upon which they depend, *b)* the socio-economic conditions and their relevance to developing the resources, and *c)* the legal, institutional and administrative context within which the development is going to take place.

3) **Issues and options:** — After these analyses, it is possible to determine where development of different coastal resources may be compatible, and to identify areas of potential conflict. In a similar way, both direct and indirect effects of existing uses of the coastal environment can be analysed to determine conflicts and compatibilities. In addition to the identification of the issues that need be resolved, the initial steps in the process also lead to the identification of alternative options or strategies for developing coastal resources.

4) **Formulation:** — Using the outputs and results of the previous steps, during this step data are synthesised in order to agree on the general, as well as the specific, content of the coastal area plans and management programmes.

5) **Adoption:** — Once policies, programmes or plans have been formulated, it is usually necessary to pass them through a formal adoption procedure in order for them to be implemented. In the case of area-specific plans, a screening process may call for endorsement and approval by the communities concerned.

6) **Implementation:** — It is important to anticipate how policies, programmes or plans can be implemented within the context of the existing situation. Similarly such anticipation is important in the case of new legislation which may supercede or radically change existing laws, environmental standards and/or guidelines.

7) **Monitoring and evaluation:** — New policies, programmes or plans, however well thought out and negotiated rarely prove to be totally appropriate or exactly what was anticipated. Thus, a procedure for continuous evaluation of the successes and failures of policies and activities should be initiated and implemented.

Elements of natural ecosystem management

Within this planning, management and development cycle, concrete activities for sustainable ecosystem management should include the following elements:

At the beginning of the process is the need to draw up an **inventory** of the natural habitats and existing species, at national, regional and local scale. One needs to know which natural habitats remain, their extent and location, and which particular species they contain. As natural ecosystems are dynamic, regular **monitoring** procedures are necessary to detect ecological changes and to update the inventories at regular intervals. These regular activities are a premise for the natural ecosystem management cycle including the following steps:

1) **Identification of threats:** — The development pressures and likely ecological changes need to be identified as specific threats vis-à-vis the correct functioning of natural ecosystems and the long-term survival of the species they contain. Such threats may be identified within the coastal areas and outside in their water catchments or the nearshore marine areas. Threats need to be classified in view of the definition of long-term conservation objectives. This step should therefore form part of steps 1 and 2 (problem definition, assessment and analysis) of the CICAP process.

2) **Definition of conservation priorities:** — Given the heavy development pressures upon the coastal environment and the strong competition for space and natural resources, the coastal area planning process will identify user conflicts and compatibilities (step 3 of CICAP). It is therefore crucial to declare conservation priorities, i.e. identify the maintenance of those ecosystem functions and the conservation of those sites, habitats and species that have priority over other development options.

3) **Declaration of protected areas:** — The definition of conservation priorities will logically be followed by the declaration of corresponding protected areas. Such priorities are likely to include the protection of coastal nurseries of marine species, the protection of seabird breeding sites, of migratory bird stop-over and refuelling sites, and of habitats with endemic species or a

particularly valuable vegetation. The protection statuses allocated to such areas include national designations, such as nature reserves and protected areas, and international designations, such as wetlands of international importance (Ramsar Sites), Special Protection Areas and Special Areas for Conservation (under the Habitats Directive of the European Union member states), Specially Protected Areas of Mediterranean Importance (a Protocol of the Barcelona Convention) and others. When completed, the network of these sites will have to form an appropriate core zone for the long-term survival of those species identified as Mediterranean conservation priorities.

4) **Link conservation activities with sectoral policies:** — It is now widely recognised that nature conservation only within strictly protected areas is not sufficient to assure the survival of the species and the maintenance of biological diversity (cf. the Council of Europe's "European Nature Conservation Year 1995"). Conservation is about the whole landscape, natural and transformed habitats, including agricultural, industrial and urban areas, pristine coastal areas and those heavily altered by human developments. The requirements for sustainable management of natural ecosystems need to be integrated in all sectoral policies, notably those on water and waste management, the development of transport infrastructures (roads, harbours, airports, railways), tourism, agriculture, forestry, energy and other industries.

5) **Devise management procedures and structures:** — As the human presence and influence in the Mediterranean coastal area is so important, even the most pristine natural protected area needs some form of management in order to sustain its diversity and conservation objectives over the long-term. It is therefore crucial to devise methods for management planning, to develop such plans, and to provide the administrative structures and means (technical, human, financial) to implement the plans.

Steps 4 and 5 need to pay particular attention to **address the problems at all appropriate levels**. Most of the coordination and integrated management work needs to be planned and implemented at local scale. But the administrative and legal context needs to be taken into account as well at regional, national, and international level.

Furthermore, in order to become sustainable in the long-term, the coastal zone development needs to **create long-term benefits** (as opposed to short-term opportunities) for local economies and people. Development based only on restrictions will not work in the long run. Coastal resources need to be used in a way that they yield the greatest continuous benefit to present generations while maintaining their potential to meet the needs and aspirations of future generations.

6) **Evaluation and assessment:** — As shown above, the management process is not linear, but needs to be an iterative one with intrinsic feedback routes that allow for future changes, continuous reassessment and redefinition of the sets of actions needed. Threats may change over time, new human pressures may arise. Natural ecosystems are dynamic, they may evolve or be altered and degraded by human activities. Thus, it is necessary to also redefine at regular intervals the conservation priorities and the priority actions to be taken.

POLICY RESPONSES

The previous chapter provides an outline of the conceptual framework within which the management of natural ecosystems in the Mediterranean coastal area should take place. It provides a reference for the following comparison of programmes and projects that are under way or already implemented.

It is relatively difficult to find coastal area planning programmes that reserve a prominent place for aspects of natural ecosystem management. Or, those which do so, are very recent and have not yet reached the implementation phase (i.e. the Albania CAMP of UNEP/MAP). While there exist many nature conservation projects in the Mediterranean coastal area, only some conservation programmes integrate wider coastal planning aspects. However, among the few advanced projects, which have gone through all the difficulties of implementing their objectives on the ground, a few examples shall briefly be illustrated here.

Most of the actions are executed, and most of the actual work is done at local level. The analysis of local experiences is therefore likely to reveal the most important lessons with regard on how to implement the objectives defined at the outset. While sometimes, local (or even sectoral activities) develop into a truly integrated programme, often the planning development progresses in the other direction: local activities are a consequence of regional, national, and sometimes even international initiatives and programmes. Thus, the presentation shall start with programmes at the supra-national level before providing details of the most interesting local initiatives.

International programmes

The large inter-governmental institutions (e.g. UNEP/MAP, METAP/World Bank, European Commission) all recognized the heavy pressure on natural ecosystems and resources in the coastal area of the Mediterranean, notably on wetlands. Their response was to elaborate comprehensive planning programmes, taking major development aspects into account, in view of financing specific investment projects.

• *Case study: Development aid programmes such as METAP (GEF projects), etc.*
In the late Eighties, the World Bank together with the European Investment Bank developed a comprehensive environmental investment programme for the Mediterranean (METAP). Experiences during the early stages of specific projects developed by this and other development aid programmes (e.g. of the European Community), sometimes funded through the newly created Global Environment Facility (e.g. El Kala wetland complex management in Algeria, or the management of the Ichkeul area in Tunisia) revealed the following lessons: Such international programmes are normally devised by experts in northern countries (EU, USA) for implementation by governments in eastern and southern Mediterranean countries. Often experts from the latter countries are not sufficiently involved during the preparation of the conceptual framework of such programmes. As a consequence, significant conceptual differences about the ultimate aims of such programmes remain when implementing regional programmes and site-specific projects. In the future, a better geographical equity of the make-up of working groups devising integrated programmes should be achieved.

Modern coastal area development planning documents prepared by such programmes are very clear about the need to use natural resources in a long-term sustainable way and to manage natural ecosystems in a way to preserve their actual and optional values, including non-use (heritage) values for future generations. However, those national and regional agencies responsible for the implementation of different aspects of coastal zone development programmes often prefer to implement development actions that provide short-term benefits. To reach a consensual approach, international programmes should therefore be developed with increased input by national and regional agencies and experts of the region concerned.

• *Case study: environmental projects within the European Union*
The above comments are made in the context of North-South or West-East cooperation. Interestingly, they do not apply to procedures within the European Union. In this case, the European Commission is proposing planning guidelines (e.g. its communication on the integrated management of coastal zones, COM [95] 511 final/2) or imposing directives (e.g. the Council Directive on the conservation of natural habitats and of wild fauna and flora, 92/43/EEC) which are implemented essentially by national and regional authorities, in regular coordination with the Commission through specific committees. Here, the balance is reversed: the essential and detailed planning work is done at regional level, not by a central (or external) agency. In the future, international aid agencies, including the relevant DGs (Foreign Relations, Development Aid) of the European Commission should strive for procedures similar to the "subsidiarity principle".

• *Case study: MedWet - coordinated actions for Mediterranean wetlands*
This initiative was created by conservation NGOs after a scientific conference in Grado (Italy) 1991. The innovative approach was that the programme wanted to overcome administrative inertia and single-minded NGO activism by creating a coordinating body composed of governmental *and* non-governmental representatives. During the first phase (1992-1996) the European Commission provided major funding (under the environment budget). The actual partners include all five Mediterranean EU states (the Ministries of the Environment and their conservation services), the Ramsar Convention Bureau and three NGOs (Foundation Sansouïre, WWF, and Wetlands International). Between them, they prepared methodologies and tools in the fields of inventories and monitoring, management, application of research results, public awareness and training.

The method of this new non-bureaucratic form of cooperation at international level can easily be extended to other natural ecosystems, as wetlands are probably the most complex coastal ecosystems in the Mediterranean anyway. A lesson to retain is that the partners realised that they had to test their newly developed methodologies and tools already at an early stage of project execution at several test sites and with local partners (also outside European countries). Currently, a second project is starting, transferring the new methodologies to five non-EU Mediterranean states: Albania, Algeria, Croatia, Morocco and Tunisia. The lesson was that an additional theme, the economic evaluation of wetland values and functions, had to be added before the start . In parallel, project development facilities are in preparation to apply the tools at selected areas in countries eligible for GEF support (Albania, Egypt, Morocco, Tunisia), executed jointly by MedWet and the *Conservatoire du Littoral* (cf. below). In June 1996, an international conference on Mediterranean wetlands, hosted by the Italian authorities in Venice, will review the achievements so far and agree on a Mediterranean wetland strategy. Already at this stage it is clear that with a relatively modest sum, international cooperation in the field of wetland conservation was greatly enhanced.

• *Case study: HELCOM PITF MLW working group in the Baltic*
A current activity under the Helsinki Convention for the Protection of the Baltic Sea's programme implementation task force (HELCOM PITF) addresses integrated management issues for coastal lagoons and wetlands of the Baltic. Working groups are currently preparing integrated management plans for each of the five priority sites, focusing on the conservation of natural ecosystems, reduction of water pollution, water and waste management, nature tourism, and local development. The novelty of the approach is that it addresses cross-sectoral issues, and that it concentrates on sites shared between two bordering states (Germany/Poland, Poland/Russia, Russia/Lithuania, etc.). In a similar way to MedWet, fruitful collaboration between NGOs and national, regional and local authorities was established. With environment financing by the European Commission and from the Swedish Environment Agency, WWF International's Baltic office is assuring the coordination of the programme.

National and regional programmes

While most Mediterranean states probably have a specific authority in charge of coastal zone planning (at least as part of general land-use planning procedures), it is difficult to find many examples where such work has given a prominent place to nature conservation issues, including during the phase of implementation.

• *Case study: the* Conservatoire du Littoral *in France*
A very visible coastal natural ecosystem management strategy is the creation at national level of a specific authority for the conservation of natural coastal (and lake shoreline) ecosystems (under the Environment Ministry). The *Conservatoire* is not an agency trying to coordinate and integrate different sectoral interests, but a sectoral nature conservation institution with a pro-active approach: its objective is to buy as much natural land as possible for conservation. To this end, it disposes of a budget and a right of preemption when land in the coastal area is up for sale. While the *Conservatoire* assures that the uses made of its land are compatible with the goals of sustainable management of the natural habitats and their biodiversity, it concedes the actual management to local authorities. Given the competition between different land users, such a strategy can only work, if a conservation institution acts from a relative position of strength, with the necessary governmental legal and financial backing.

• *Case study: Southwestern coast of Portugal*
In southwestern Portugal, along the Atlantic coast, serious efforts have been undertaken to integrate natural ecosystem management into coastal area development. Among the lessons to be retained, it is interesting to note that it was necessary to provide the environmentally sensitive coastal area first with a conservation status, i.e. to declare it as a landscape protection area "Area de Paisagem Protegida do Sudoeste Alentejano e Costa Vicentina". This was done by the Ministry of the Environment, with its service for national parks, protected areas and nature conservation in charge of implementation, together with the local authorities.

Planning and development work had to deal with the development of traditional coastal fisheries (supported financially by the conservation agency), with limiting tourist pressure on small pocket beaches while developing alternate forms of rural tourism, and with the protection of the natural rivers that still contain a viable Otter population. Sectoral planning approaches provoked the degradation and destruction of a coastal marsh through the construction of aquaculture basins (supported by Regional Funds of the EC) while environmental funds of the

Community paid for the conservation of the natural habitats supporting Otters, Storks and cliff-nesting seabirds. The lesson to retain here is, that it was necessary to install a specific management authority (based in the coastal town of Odemira), and to staff it with competent personnel, in order to address development problems in a coordinated way. Once the local will for an integrated planning approach was established, it was relatively easy to obtain complementary funds from the central ministries and the European Community.

• *Case study: Environmental development in the* Camargue Gardoise
The *Gard Department* in the Languedoc-Roussillon Region of France has initiated a programme of sustainable development around its part of the large Rhone delta natural ecosystem. The programme addresses ecotourism, wetland conservation, the raising of public awareness and education at a newly created study centre, wetland restoration, water management and pollution reduction.

The lesson to retain is that the *Gard Department* government created a programme steering committee (*syndicat mixte*) with representatives of the eight municipalities involved, the Environment Ministry, and different NGOs. This decision-making body is supported by a scientific committee providing advice and expertise where needed. The implementation of the project's objectives is enhanced by synergies created with several parallel activities to restore the natural habitats in the area, financed by local sources, but also through programmes of the European Union.

Local examples

Under the European Commission initiative ENVIREG supporting environmental projects in economically less favoured European regions, a working group has dedicated time to elaborate a guide to good practice for **Error! Reference source not found.** (published 1994). The guide addresses issues such as integrated management, planning for tourism, environmental impact assessments, protected area designations, use of market instruments, land purchase schemes, and networking. It illustrates these approaches with a number of local case studies.

• *Case study: the Laona project for alternative tourism*
This project on the Akamas peninsula of Cyprus attempts to develop rural tourism in a number of villages in an ecologically important region in western Cyprus. It provides financial assistance in the form of grants and low-interest loans for the restoration of tradition houses, which are then lent to tourists through overseas tour operators. The project operates as a non-profit making foundation with initial funding from the EC's environmental budget and a charitable trust.

The project was set up next to an area with excessive development of mass tourism, in order to show a sustainable alternative. Strong opposition from powerful local land-owners who prefer conventional mass tourist development prevented the establishment of the project in all (coastal) villages. The continuity of the activities and of planning has been hampered by the lack of a guaranteed source of long-term funding, as the project is not yet self-supporting. The lessons of the project show that opportunities exist for culturally and environmentally sensitive development in villages backing the coastal zone that can restore the self-respect of these communities. Local, grass-roots initiatives can be made to work, but it requires dedication and

perseverance by the responsible management team. Small scale does not necessarily mean that the process will be easy. While funding requirements are not necessarily large, they should be assured with a long-term commitment. Local and central government support and encouragement was essential for the acceptance by local communities.

• *Case study: the S'Albufera natural park on Mallorca*
In 1988, the remaining marshes at S'Albufera in the northeastern plain of Mallorca were declared a Natural Park by the regional government. This was a result of initial pressure from birdwatchers and conservation NGOs. With the acquisition of land by the regional and central Spanish governments, however, the management objectives of the park were extended to include a programme of ecological restoration, increasing biodiversity, sustainable use of natural resources (fish, reed), and reception of visitors and birdwatchers from nearby tourist resorts. Special provisions for blind visitors and the production of excellent guidebooks and other educational materials are indicative of the imaginative approach to visitor management. Thus the park also functions as a regional educational and research resource. It is currently one of the best monitored natural coastal ecosystems in the Mediterranean, having been one of the first test sites of a long-term programme of the conservation department of University College London.

The lessons of S'Albufera show that it is possible to successfully run a coastal park in close proximity to a large tourist development. The attraction of the area was enormously enhanced by the presence of this protected area and its accessibility for recreation and nature tourism. It was possible to zone and manage the park in a way, that it could sustain a large number of visitors. This requires regular monitoring of the natural habitats, in order to take immediate remedial action should the natural ecosystems suffer. The specific interests of nature tourism lie outside the peak season of conventional mass tourism (before and after the summer peak). This broadened the season, thus reducing the park's dependency on the peak summer season.

The same conclusions are valid for a similar wetland area on the Catalonian mainland coast, the Aiguamolls de l'Empordà natural park next to the Roses/Empuriabrava tourist resort.

• *Case study: integrated management for the Odiel and Tinto estuaries*
The natural ecosystem of the Odiel marshes at the estuaries of the rivers Odiel and Tinto on the Andalusian Atlantic coast near the town of Huelva sustains human activities such as fisheries, salt production and agriculture. Forty years ago the area was transformed by the development of a modern offshore fisheries harbour and industrial infrastructure. In addition tourism started to affect increasing parts of the tidal estuary, reducing the extent of natural areas and causing pollution and disturbance.

Despite the legal protection of the marshes in 1984, negative impacts from the surroundings continued to affect the site. As human pressure on the natural areas was likely to increase, integrated management measures had to be planned. The European Commission (DG XI) committed a group of experts to clarify the management issues at stake. They met with local professionals and members of the regional park's steering committee (*patronato*) to provide guidance for the local environment administration and the managers of the nature park to coordinate a detailed study on the history of the environmental problems and pollution, and the development options for Odiel. The studies also addressed functional aspects, and threats to the Odiel marshes and the administrative organisation and procedures for decision - making necessary for integrated management. Since then, the proposed administrative structures and management actions have been implemented by the regional park on the ground.

The lessons to retain are that a way was found to develop economic activities alongside nature conservation areas. Degraded natural ecosystems are restored and showed themselves to be remarkably resilient. Given sufficient time and know-how, it is possible to restore the habitats lost to timber plantations, salt pan, tourism and other developments. Some beach areas were specifically designated for public recreational and tourist uses, while sensitive natural areas nearby are closed to the public, or only accessible on marked paths (and observation hides). Property rights were allocated through public auctions, e.g. the right to show visitors the park. The potential employment benefits are shown by the licensing of bait-digging rights on the mudflats of the estuary. The distribution of a limited number of licences has created 15-20 full-time jobs where there were none before and harvesting was done in a haphazard, uncontrolled way.

• *Case study: coastal area management in the municipality of Lysekil*
A comparison with a northern approach on coastal area planning by the coastal town of Lysekil at the west coast of Sweden reveals that this municipality of about 15,000 inhabitants places environmental issues high among its planning priorities, including industry, marine transport and tourism. Regarding natural ecosystems, the main issues addressed are fresh water supply, phytoplankton and fisheries resources production in nearshore areas, eutrophication and water quality. The planning is facilitated by dividing the archipelago coast in different functional sub-units (fjords) to be analysed as separate functional ecosystem units. The prevalence of national nature conservation laws and areas of national interest is stressed. To these conservation areas, local priority areas, also holding cultural heritage (archeological and historical sites) need to be added. The municipal plan was produced in English by the national environmental agency to provide demonstration material for use in Swedish bilateral cooperation with third party countries around the Baltic Sea.

LESSONS TO BE LEARNT AND WAYS TO TRANSFER SUCH EXPERIENCES

The case studies presented above represent but a small sample of many ongoing activities. They were selected among the most integrated (i.e. cross-sectoral) and most advanced (i.e. implemented) projects and programmes. In addition to the lessons outlined for each case, it is possible to draw the following general conclusions concerning technical and administrative procedures:

- Sound integrated management of natural ecosystems depends on a clear understanding of the physical, chemical and biological processes which control their functions.

- Management proposals need to incorporate the entire water catchment areas of particular coastal zones, including the marine area forming part of the local pattern of marine currents.

- Particular emphasis should be given to the management of the water table and hydrological budget in the catchment, particularly in the light of increasing pressure on aquifers for alternative water uses for irrigation, tourism, etc.

- The sedimentation rates, inputs from upstream soil erosion and coastal erosion or accumulation rates need to be assessed in conjunction with the likely consequences of foreseeable land use changes on the stability and function of this geomorphological system.

- Management means the control of space and activities. It can be divided into four main activities: shielding against negative influences, control of external influences, utilisation of natural resources, and the design and planning for desired evolutions.

- Integration means to synchronise opposing interests in a given coastal natural area and its resources towards a common goal of conservation and sustainable utilisation. In order that this be properly done, all interested parties that have decisive or influential power are to take part in the mutual process of finding a consensus or compromise. This is unlikely to be an easy and quick process, but a difficult and time-consuming exercise for which sufficient time needs to be foreseen.

- To give adequate recognition to such an integrated planning procedure, and to demonstrate its importance to sectoral administrations and interests, specific authorities (committees) for the integrated management of specific coastal regions should be created at the appropriate levels (local, regional, national).

NEW DEVELOPMENTS AND SUGGESTED ACTIONS

In view of future progress in the field of natural ecosystem management and its integration into coastal area planning, the following recommendations can be made:

- Within the framework of sustainable coastal zone planning, ecosystem management and biodiversity conservation issues need to occupy a prominent place. In the Mediterranean, where the tourist value of the coastal zone is of outstanding socio-economic importance, it is crucial to manage the natural coastal resources in a long-term sustainable way. This includes the conservation of the essential functions of natural ecosystems, the maintenance of natural habitats, and the survival of their typical species for non-consumptive (tourism, recreation) and, where appropriate, consumptive uses (hunting, fishing).

- This will require advanced forms of economic appraisals of the different functions natural coastal habitats fulfill, and the assessment of their value in the given socio-economic context.

- Traditionally, natural ecosystem management was mainly driven by regulations and user constraints. The efficient economic tools of incentives (subsidies, tax reductions) and environmental taxes should be further developed in the context of biodiversity conservation and the maintenance of ecosystem functions given to local communities.

- Finally, an area that needs increased attention is the recognition and evaluation of the development potential of work to be done for natural ecosystem management and biodiversity conservation, with a view to creating new jobs and employment opportunities.

- In parallel, in many Mediterranean range states, legal texts and administrative structures need improvement. And where regulations exist, they represent only too often good intentions on paper, and deserve better implementation in the field.

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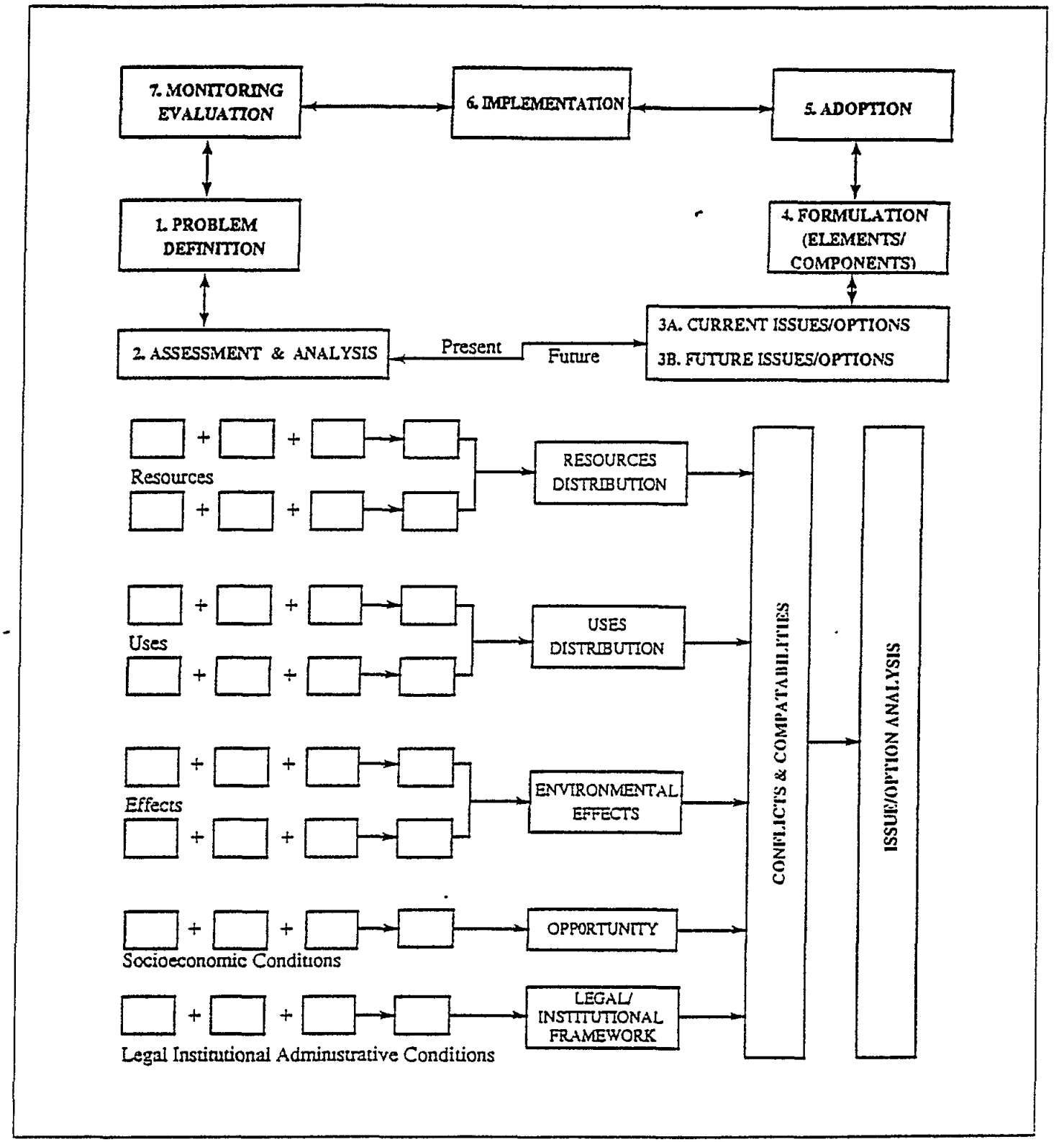

FIGURE 1:
Components of the assessment and analysis, issues and options of the coastal area planning process.

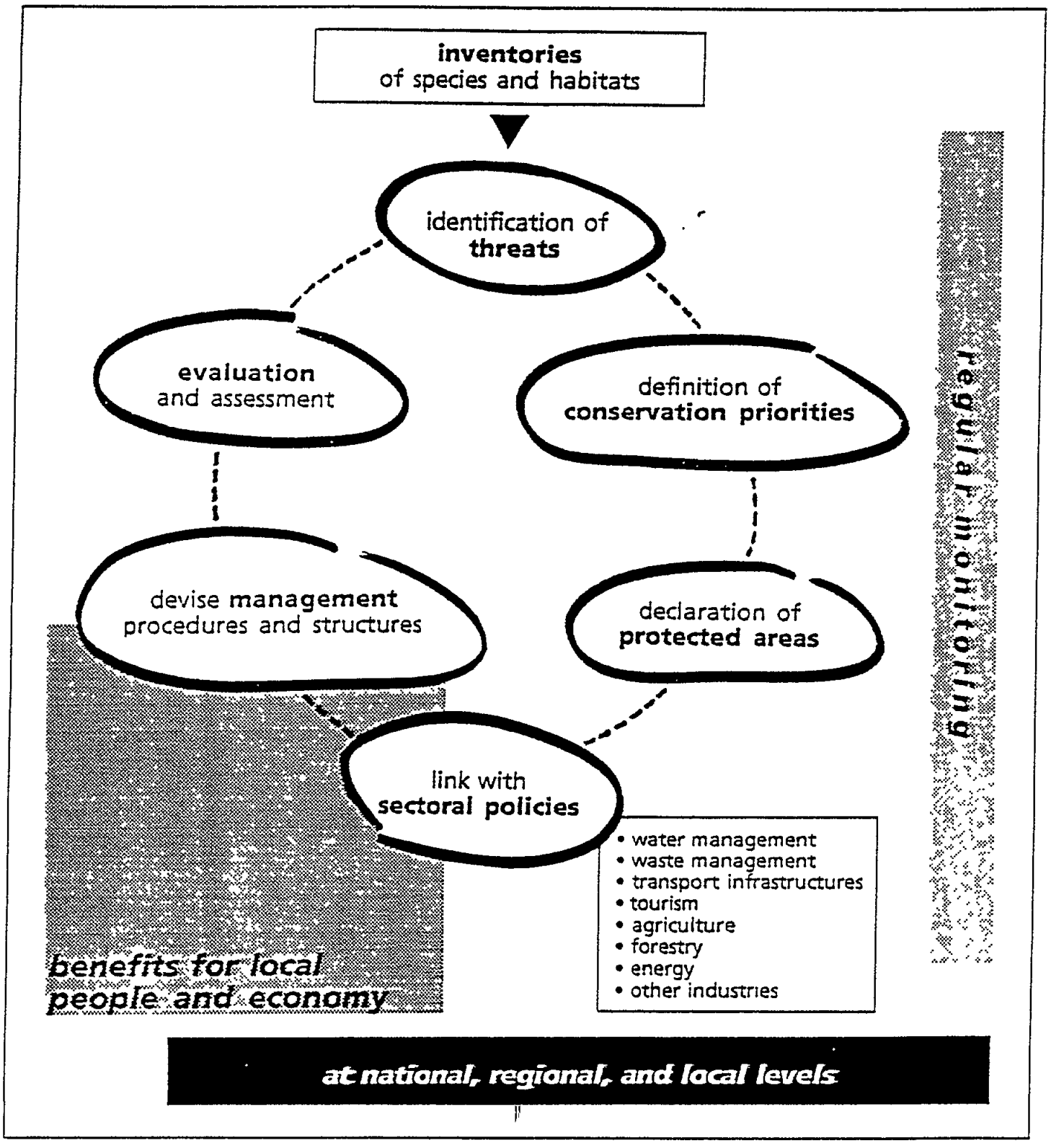

FIGURE 2:
Elements of natural ecosystem management in coastal areas of the Mediterranean.

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