

Sustainability in Coastal Zones

The Human element in social, economic and environmental aspects

Focus on the Mediterranean Basin

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Thymio Papayannis
in collaboration with
Nejib Benessaiah and Maruschka Triandari



EUROPEAN FOUNDATION
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Preface

scope of the EFILWC programme

The European Foundation is a unique organisation, in which the social partners and government officials in the Union come together with European Commission officials, researchers and other experts, in a common quest : improving working and living conditions. In this work, the social and economic aspects are of primary interest. Environmental concern, however, also plays a key role. This explains the interest of the Foundation in environmental matters, both in the urban and rural context¹.

The present paper has been prepared within the scope of a new programme of the European Foundation on "Sustainability in Rural and Coastal Areas". The main aims of the programme, (which is a preparatory one leading to a second definitive phase in 1998), is to contribute to the development of "comprehensive policies for integrating environmental, social and economic considerations and respecting regional and local characteristics" in these particularly sensitive areas, which are at present subject to radical changes and pressures.

The programme working group² met for the first time in Brussels on 25.10.1996, with subsequent meetings on 18.02.1997, 07.04.1997 and 21.05.1997, with a final meeting scheduled for 08.10.1997. During its first meeting, the working group decided that its future work regarding both coastal and rural areas should be centred on social and quality of life issues associated with environmental and economic aspects and the move towards sustainable development. It was also decided that the participation dimension, i.e. the involvement of local communities, should be given high priority.

Four of the members of the group were asked to produce exploratory studies on specific themes, to contribute to the development of the programme work. The preparation of a synthesis of the four studies has also been considered, while discussions have started on a follow-up programme for the next year.

All of these activities are closely co-ordinated with the European Commission's Demonstration Programme on Management of Coastal Zones, to which it is expected to contribute novel concepts and perspectives.

the present study

The author of this study was requested to work on the implications of sustainability in the coastal areas, with particular emphasis on the Mediterranean Basin, including non-European Union countries. This was considered interesting, in view of both the historical unity of the Mediterranean, and its great diversity of cultures, social and religious charac-

¹ One should mention here the very interesting studies prepared in 1992 under the EFILWC programme on "Environmental perspectives and the quality of life : 1995-2010"

² Headed by Jørn Pedersen (EFILWC), and consisting of Enrique Calderón (Spain), Roger Calmès (France), Ann Gibbons (IFA, Ireland.), Bernard Le Marchand (FEMCE, Belgium), Philip Lowe (U.K.), Michel Miller (ETUC, Belgium) and Thymio Papayannis (Greece), with the participation of representatives of EC/DG XI and DG XVI (Michel Cornaert and Frédérique Lorenzi).

teristics and economic conditions. To this effect a contract between the European Foundation and TP+A was signed on 20.01.1997.

This study has been researched and written by Thymio Papayannis, with the assistance of Nejib Benessaiah (responsible for the case study on Morocco and Tunisia) and Maruschka Triandari (responsible for the other five case studies). It has been based on bibliographic data concerning the Mediterranean Basin, the coastal zones in general and sustainable development, extracted mostly from UNEP, EFILWC, EC, and OECD reports, as well as other publications and research papers. Key concepts on sustainability and resource management were based on related work done by the Greek Planners Association during the period 1994³-1997. For some of the case studies mentioned, credit should be given to the experience gained up-to-now under the MedWet initiative⁴ for the conservation and wise use of Mediterranean wetlands.

The first part of the study discusses the concept and implementation of sustainability, and the need of resource management (Ch. 1 - Introduction). It also looks more particularly at the resources of the coastal zones, both natural and anthropic (Ch. 2). The second part analyses the social, economic and environmental aspects of coastal sustainability, with an emphasis on the human element (Ch.3-5). In the final section a synthesis is made, concerning the role that the people can play in the implementation of sustainability (Ch. 6).

³ When they prepared the position paper on sustainability of the Greek Presidency of the EU.

⁴ An initiative under the aegis of the Convention of Wetlands (Ramsar, 1971). A first project (1993-1996) concerned France, Greece, Italy, Portugal, Spain, while a second (1996-1998) Albania, Algeria, Croatia, Morocco, Tunisia, both with the support of the European Commission. Thymio Papayannis is since 1991 the co-ordinator of the MedWet initiative.

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Executive summary

The present paper has been prepared as a preliminary stage study, within the framework of a new programme on "Sustainability in rural and coastal areas", launched by the European Foundation for Improving Living and Working Conditions (EFILWC). The study was planned as a contribution to the development of "comprehensive policies for integrating environmental, social and economic considerations and respecting regional and local characteristics" in these particularly sensitive areas, at present often subject to radical changes and pressures. The programme is centred on social and quality of life issues, associated with environmental and economic aspects, and the move towards sustainable development, giving high priority to the dimensions of local administration and public participation.

The paper is one of four thematic exploratory studies, the final synthesis of which will contribute to the development of the future programme work of EFILWC in this field. It examines the implications of sustainability in the coastal areas, giving particular emphasis on the Mediterranean Basin (including non-EU countries), in view both of its historical unity and its great cultural, social, religious and economic diversity. The study has been based on bibliographic data concerning the Mediterranean Basin, the coastal zones in general and sustainable development, extracted mostly from UNEP, EFILWC, EC, and OECD reports, as well as other studies and research papers.

1. Sustainability and resources

The first systematic attempts to combine environmental preoccupations with reasonable development perspectives appeared in the '80s, when expert groups initiated development programmes, which took into consideration not only the requirements of nature conservation, but also socio-economic aspects and improvements in administrative and legal frameworks. These programmes focused on the integrated management of sensitive ecosystems in order to obtain both protection and wise use of their resources, based on the idea of sustainable development. The concept of sustainability, namely the use of resources for the benefit of the present and future generations without their degradation or destruction, as defined by the Bruntland Commission in the late '80s and later (1992) adopted by the Rio Conference, presented a number of significant advantages, which helped it to be well accepted, assuring its incorporation in a number of Community policies and programmes.

However, sustainability still suffers from major weaknesses, preventing its wider implementation. The lack of precision in the definition of the term, as well as the difficulty of its translation in the Latin languages, have created a certain confusion as to its exact meaning and content. In addition, an accurate definition of a concept needs also its precise translation into operational terms, which in the case of sustainability is not yet satisfactory. Still, the major obstacle for the implementation of sustainability remains the ignorance of the concept by the wider public, a fact that could lead to its untimely abandonment and maybe also to the distortion of the term itself for political or other expediencies.

To avoid this danger, it becomes necessary to clarify that sustainability is not primarily an environmental, but an economic concept and resources are its main concern. Resources can be classified in two major categories: natural ones, which can be material, energy or

functional, and anthropic, which can be material, immaterial, or the combination of both. On the other hand, resources can also be classified as renewable and non-renewable (abundant or scarce) and consumable and non-consumable (non-degradable, reversibly or irreversibly degradable).

Since it is obvious that a number of resources need to be consumed for each human activity in many different ways, it becomes necessary, within the framework of sustainability, to develop a new approach to resource management. By establishing an analysis of the resources needed for all major projects, followed by a resource assessment based on their complexities and interactions, the reasonable use of resources could become an intellectual process of interest and concern of both the public and the private sector, ensuring - now and in the future - a certain degree of equitable access to them, while satisfying legitimate human needs. It should not be seen as a top-down approach, concerning only policy-makers and technocrats, but as a major issue with strong ethical and political implications, involving all levels and structures of society and depending especially on the active intervention of the wider public.

2. Resources in the coastal zones

As already seen, an operational precision is necessary to give sense to the concept of sustainability. However, to translate sustainability in operational terms, it is necessary to analyse its implementation in specific areas and sectors, without, of course, ignoring the basic continuity of the territory and the interdependence of activities. Such areas are the coastal zones, considered as an immediate extension of the mainland, although examined under their proper identity. The present study focuses on the coasts of the Mediterranean Basin, with their own natural, cultural and socio-economic specificities.

For the purpose of the study, coastal zones are defined as the land areas influenced - directly or indirectly - by the presence of the sea, as well as the marine areas related to land-based activities. They constitute the interface between land and sea and have linear characteristics with variable width, depending on a number of factors, such as the land morphology of the site, the existence of rivers and wetlands, the location of gulfs and estuaries, or of the islands with their special microclimatic conditions, and finally the intended or unintended results of human actions.

The study focuses on the coastal resources which have a particular socio-economic significance for the Mediterranean Basin, being susceptible of giving valuable inputs for the improvement of the sensitive coastal areas management. These resources should be assessed on a number of criteria, including uniqueness, availability, degree of demand or pressures exerted on them.

natural resources

Territory : Territorial space is a finite major resource, in the past often subject to armed conflicts and wars. Today it is often quality-dependent, facing high demand and constituting an element of land-use conflicts. Its integrated management can be achieved through comprehensive land-use planning.

Cultivable soil : Fertile areas are limited around the Mediterranean and have traditionally been exploited by agriculture. Today they are in danger of degradation, because of the

intensification of agricultural activities and of unchecked urbanisation; they need to be identified and protected as a valuable resource.

Freshwater : High water consumption for agriculture and tourism activities has created a discrepancy between increasing demand and dwindling supply, especially in the South and East of the Mediterranean, causing serious water shortages. Its sustainable management will require technical, regulatory and financial measures to normalise both supply and demand.

Sea access : Another resource - that requires careful allocation with social criteria - is access to the sea, which today, with more secure conditions, is in increasing demand.

Beaches : Good-quality beaches are at present in high demand, but in limited supply. Pollution, destabilisation, but mainly tourist facilities threaten them with degradation, destroying very rare beach-related ecosystems and undermining human activities. The need to protect them is imperative.

Biodiversity : In the Mediterranean it is unique in richness and variety, as much for the number of habitats, as for the species they contain. The uncontrolled industrial, urban, tourist and infrastructure development have already caused irreversible impacts on biodiversity, as evidenced by the disappearance or dramatic decrease of flora and fauna species. Serious efforts are needed to stop the decrease of biodiversity in the region, and to restore it where feasible.

anthropic resources

Cultural heritage : A very great cultural wealth can be found throughout the Mediterranean, which has been the birthplace of major civilisations. Wars and uncontrolled development have destroyed a large part of the material ones, while local traditions and customs are actually menaced by cultural globalisation and homogeneity.

Infrastructure : Policy in this field, especially in the EU countries, does not encourage the maintenance and improvement of existing networks, instead, it is based on new construction, especially of road networks, without taking seriously into account the particular characteristics of the coastal zones; with resulting environmental degradation.

Settlements : Until the middle of the 20th century, the numerous historical settlements of the Mediterranean Basin provided reasonable living conditions to their inhabitants and constituted major elements of cultural heritage. The dramatic population growth and the adoption of new life patterns have resulted in an uncontrolled expansion of these settlements, causing nothing but dysfunction and unsustainable operation, and destroying the cultural heritage.

Human potential : The people around the Mediterranean are gifted with particular traits, related to the sea and the ease of contact it creates, including mobility, ingenuity and a cultural tolerance. These typical characteristics of the Mediterranean populations are actually in danger of disappearance.

Resolving land use conflicts: The Camargue (France)

In the Camargue and its wider area, industry and tourism have developed in often conflicting ways, at the expense of one of the great wetlands of the world. Still, positive efforts are being made to defuse the conflicts and to find a more sustainable balance in the productive activities and the conservation of the areas natural resources. The systematic selling of the traditional environment is the actual official and private sector development policy adopted for the Camargue; it consists in the introduction of new activities (not always very pleasant), assisted and supported by most of the local population, which often result in the development of a medium-size business network, which may

be economically viable, but is deprived of the advantages and the efficiency of an integrated approach to the development of the area.

3. Social aspects

Social conditions and trends depend on the interplay of a variety of factors. The specific geomorphology and climate of the Mediterranean Basin, as well as its widespread natural and cultural wealth, have always unified the surrounding areas, giving them a particular identity. Cultural and economic diversity have always been determining factors, regulating the balance of the region. First, Western colonialism upset this balanced pattern, creating the root causes for the current social and political problems. The actual large economic discrepancies around the Basin have created a socially unstable situation, requiring difficult corrective measures, which can be facilitated by an approach based on sustainability.

In the first half of the 20th century, the northern shore of the Mediterranean had the highest population. However, since 1950 two new determining trends have appeared : a dramatic increase in the permanent population of the East and South of the Basin, and a projected equally large increase of the transient population in the Mediterranean through tourism. Both of these trends, concern mainly the poorer countries of the region and may cause irreversible environmental degradation and social unrest.

In spite of the rich diversity and the profound differences among the various countries bordering the Mediterranean, which have influenced their evolution, there are still certain key social changes, common (although at different rates) in all these populations, which are very significant in terms of sustainability.

The weakening of the family values, the loss of influence or the distortion of the role of religion, as well as the cultural homogenisation are menacing the social cohesion of the Mediterranean communities. On the other hand, the lowering of the average age of the populations in the southern and eastern zones, together with certain impacts of economy globalisation, cause an increase of unemployment rates, creating thus conditions of probable social and political unrest and environmental destruction.

Over-exploitation of resources and the lack of an integrated coastal management often lead to social conflicts. These are also intensified by the excessive concentration of people and the uncontrollable growth of activities in the narrow coastal zones . These types of social conflicts have always been related to the use of territorial resources, initially between traditional and “modern” activities. Today they appear among the “modern” activities themselves, or the “modern” versions of traditional ones. Conflicts are also created between those forces that represent the common good and the particulars interested in exploiting it. Finally, under-privileged minorities are also at the root of social conflicts with well-established groups, which often reach the level of criminality.

Traditional societies, especially in the coastal zones, associated life quality with primary values, such as availability of shelter and food subsistence and the security and protection from enemy invasions. In our times, this concept has become related to the increase of the personal or family income, and the resulting ownership and consumption of material goods. It is understood now that this attitude has been at the root of over-exploitation of resources, leading to social injustice and a gradual environmental degradation, without

assuring personal happiness. Through sustainability new models of living need to be developed and the concept of quality of life redefined.

Culture can help in this process. In traditional societies, life was based on practices that tended to be sustainable, and that were intimately associated with local culture. The maintenance and rebirth of such practices, allowing links to be kept with the past in time and space, can, therefore, play a significant role in the understanding and acceptance of the requirements of modern sustainability.

Quality of life: Paradoxes in Cyprus

Traditional life in Cyprus has been pleasant, in spite of the tumultuous history of the island. In the last three decades, the quality of life in Cyprus has changed radically and in contrasting ways, due to rapid development efforts, the explosive political events of the '70s and the Turkish occupation, and the recent economic affluence of the Greek Cypriot part of the island. Economic growth may be well desired and attained, but it does not necessarily guarantee an improvement of the quality of life, when this last one is regarded from a non-quantitative aspect; on the contrary, the environmental degradation it may cause - if left uncontrolled - can result in a dramatic lowering of this quality, which will require long-term efforts to redress.

Local culture and tourism: Social trends in Morocco and Tunisia

Tourism is having a marked impact on the Moslem societies of Morocco and Tunisia. Is it all negative or does it provide incentives for the retention of the rich culture and environment of these two countries, while providing an open window to the world and an opportunity for social and cultural exchange? It is not easy to give a positive answer to this question. The reason is the double misconception and misunderstanding that still exist; most of the images and ideas of foreign visitors concerning Tunisia and Morocco are the products of pre-packaged, simplistic and stereotyped publicity of international tour operators; in parallel, the main images the local communities have of their visiting tourists and their Western culture are the equally stereotyped and false messages and pictures projected by the satellite channels. Until both sides have a clear view of reality, social contact will be limited or even negative.

4. Economic considerations

Sustainability aims to reconcile the prerequisites and impacts of economic growth with environmental requirements, channelling growth through an equitable distribution of resource use among the people of the world, and the guarantee of continued access to resources to the future generations. Although such constraints, with ethical character but with profound economic implications, are easily accepted on an ideological level, they have not reached yet any operational efficacy, due mainly to unwillingness to face the grave social and economic consequences their implementation would entail and the radical changes it would require.

Wise resource management in relation to productive activities is especially necessary in the coastal zones, in view of their fragility and of their global importance. This would require a thorough analysis of all coastal activities and their interrelations, based on the specific characteristics of these areas. Coastal economic activities can be divided in those which exploit their specific resources, and in others which are found almost anywhere in each country. On a first level of evaluation, general suggestions can be proposed, en-

couraging sustainable activities that depend on coastal resources or serve directly the local populations, and resolving the conflicts among activities in an equitable way, taking into account the social benefits involved.

In the same framework, activities simply occupying coastal land, while offering little employment or degrading it with pollution, should be discouraged. On the contrary, traditional productive activities should be promoted, as they require high levels of skilled employment and help in maintaining both the local cultural heritage and biological diversity. Besides, a wide range of service activities (traditional and contemporary) can be carried out with moderate environmental impacts. Finally, integrated management of coastal resources, within the framework of sustainability, can also provide permanent employment opportunities for a large number of people, having at the same time a positive effect in the popular comprehension and acceptance of sustainability.

Since the economic development of the coastal zones, and especially those of the Mediterranean, within the framework of global competition, has to be based on their comparative advantages, it is sustainability - through the wise use of resources - that allows the best capitalisation of these advantages, thus leading to sustainable economic development.

Population flux and employment: The Mediterranean coast of Turkey

Tourism and industry development on the Aegean and Mediterranean coast of Turkey has caused mass migration from the interior regions, due to the employment opportunities provided, but with many negative side effects; social and political problems have appeared, requiring drastic and inventive solutions, and environmental degradation has been caused, making necessary long-term efforts and serious investments to overcome.

Development and nature: Conflicts in the Sado estuary (Portugal)

The process for arriving at sensible compromises concerning harbour and industrial facilities expansion in a sensitive natural area, like the estuary of the river Sado in Portugal, has been long and arduous. Nevertheless, the wide acceptance of a management plan for the area, which includes two nature reserves, indicates that there will be a consensual positive ending, both for the maintenance of the natural and cultural heritage of the area and for the benefit of the local people.

5. Environmental aspects

Thanks to extensive and systematic research, carried out up-to-now by national and international institutes and organisations, there is already a solid base of scientific knowledge and considerable practical experience on the environment in the coastal areas. What is still missing, though, is a profound and systematic examination of human relations to environment.

Human impacts on the coastal environment are the result of human activities and events on coastal systems and can be of different types. The most important is the actual occupation of valuable natural areas by other uses than the traditional ones, causing pollution, and forest and biodiversity loss. Over-exploitation of coastal resources can also cause serious environmental degradation, although to some extent it can be considered as a

reversible phenomenon. Finally, pollution of air, land and water, due to industrial development, intensive agriculture and the adoption of new patterns of life, degrades constantly the almost non-renewable quality of the Mediterranean.

In addition, global climate change will inevitably have serious impacts on the environmental balance; the low coastal regions of the Mediterranean will be especially affected and the results will be negative and with grave implications for natural resources and human activities depending on them.

Various causes have been identified at the root of environmental problems in the Mediterranean. All seem to be related to two factors : the unchecked actions of private interests, on the one hand, and ignorance of environmental values and of the consequences of each action. Both of these root causes can be addressed through education, information and the gradual development of sustainable social and moral values.

Political pressures on the environment: The Neretva delta (Croatia)

The Neretva delta is one of the rare sites of the Mediterranean Basin to retain still today a strongly wetland-related range of social and economic activities. Menaced by explosive development tendencies, resulting mainly from political realities in the wider area, especially in Bosnia Herzegovina, it can only survive through concerted management efforts and a strong local participation, resulting from a thorough sensitisation to the issues and options of sustainability.

6. Synthesis : People for sustainable development

The current efforts for promoting integrated coastal zone management (ICZM) within a framework of sustainable use of resources, both in the European Union, and in the wider Mediterranean through the action of the Mediterranean Action Plan, have started recently. As they entail radical changes in a number of key sectors, they cannot be successful unless there is a social movement to support them.

Such a movement must be based on human objectives for a truly integrated approach to coastal zones, combining :

- sustainable development and creation of employment,
- resolution of conflicts and wise use of territorial resources, and especially coastal land,
- improvement of living conditions for coastal populations,
- equitable access to resources,
- conservation and enhancement of the natural and cultural heritage, and use of its values for the benefit of people.

A first step must be to explain sustainability to people, especially in the coastal zones, and to convince them of the need and the advantages to them of sustainable use of resources and of integrated management. This will require concerted actions in :

- refining the message and promoting new behavioural patterns,
- delivering the message,
- demonstration actions,
- approaching children and young people,
- evaluating the efforts and feedback.

In implementing sustainability legal and political tools will play an important role. It becomes, therefore, necessary to take action in ::

- informing and training decision-makers,
- using people-power to convince decision-makers, and to promote the need for integrated coastal management and for an improved legal and administrative framework,
- encouraging public participation in the planning and management process.

Finally, after sustainability has become known and accepted, its effective implementation can be achieved, through a systematic effort based on people, which would consist of :

- identifying partners and making a more effective use of existing organisations, structures and networks,
- developing a mid- and long-term strategy for human mobilisation in the coastal zones,
- initiating people participation pilot projects in a number of countries,
- organising concerted information and sensitisation campaigns.

To co-ordinate this work a body should be established, which should include not only Mediterranean governments, but also social and non-governmental organisations and the private sector. The Mediterranean Commission on Sustainable Development under the Barcelona Convention, which was established in 1996, can be such a body; but it will require a more equitable and representative membership, and a lighter and flexible structure, relieved from the heavy procedural and administrative processes of the United Nations.

Sustainability in coastal zones

The human element in social, economic and environmental aspects

Focus on the Mediterranean Basin

1. Introduction

the concept of sustainability

The need for careful management of resources was felt as early as the '70s¹. Later in the '80s, the Commission of the European Community (and more specifically Directorate General XI) initiated a number of programmes which attempted to combine the conservation of nature with mild development.

In 1984, for example, it launched² a major project of environmental protection and development of natural resources for a large coastal area in Western Greece, the Amvrakikos Gulf, which constitutes one of the great wetlands of the Mediterranean³. Unfortunately all the good efforts made under the project⁴ were abandoned, when - a few years later - another Commission Directorate started funding indiscriminately intensive aquaculture units in the area.

In 1987-1989, DG XI established the expert group on the integrated management of Mediterranean-type wetlands, which did significant work, attempting to take into consideration not only the requirements of nature conservation, but also socio-economic aspects, such as productive activities, land uses, water resources and pollution, administrative and legal frameworks⁵. Finally, the emphasis was placed on the need of integrated management of these sensitive ecosystems in order to obtain both protection and wise use of their resources. The significant results of this exercise led to the preparation of the EC Communication on wetlands⁶.

These two activities were typical of the efforts of DG XI in the '80s to combine environmental preoccupations with reasonable development perspectives. And it must be pointed

¹ Bibl. : The Ecologist 1972.

² In collaboration with the Ministry of Physical Planning, Housing and the Environment of Greece.

³ Amvrakikos is both a "wetland of international importance" under the Ramsar Convention, and a "special protection area" (SPA) according to Directive EEC/89/409.

⁴ See Papayannis T. et al, 1986, *Amvrakikos Gulf, development of natural resources and protection of the environment*, Athens, Ministry of Physical Planning, Housing and the Environment.

⁵ Bibl. : Salath© 1992.

⁶ Bibl. European Commission 1995 b.

out that they were not well received at that time by some of the other services of the Commission, which were oriented towards "hard" development and regarded with great suspicion this incursion of the environmental services in their own turf (even accusing of "Trojan horse" tactics).

At that stage, the concept of *sustainability* or of *sustainable development* appeared, and was defined by the Bruntland Commission as the use of resources for the benefit of the present and future generations, but without their degradation or destruction. Sustainability was adopted by the Rio Conference in 1992, and was incorporated later in the policy of the European Union, starting with the Maastricht Treaty.

The new concept, which had strong historical roots, appeared to present a number of significant advantages :

- It had a definition that was general, could be easily understood by everybody and was not at all controversial. Who could disagree with the statement of using resources wisely, for the benefit of the present and the future generations?
- It created an optimism in arresting the conflict between "developers" and "conservationists", by having them both work towards a common goal.
- It included the notion of *development*, which reassured this particular international lobby, adding to it the adjective *sustainable*, which could easily be misunderstood to reassure that development activities could be sustained (or even increased) in the future.
- It enticed the environmental sector by the subtle promise that they would not have to shout at the passing trains, but help in running them.

It is easy to understand why the concept of sustainability was well accepted, but also why it created rapidly a number of disappointments.

implementing sustainability

Thus, in the five years since the Rio Conference, sustainability has become a popular issue in policy circles. Especially in the European Union, it has been incorporated in a number of Community policies and programmes⁷. More important, it is being discussed as a key issue in the process for the revision of the Maastricht Treaty, and it is very probable that a strong commitment to sustainability will be included in the final text of the revised Treaty⁸.

During this successful transition process from scepticism to discussion to acceptance, certain major weaknesses have appeared in dealing with sustainability; and these require further careful consideration.

Confusion as to the concept : In spite of the earlier definition by the Bruntland Commission, which was too general and all inclusive, sustainability has never been defined rigorously. As a result it gave rise to endless misconceptions, and it allowed politicians to use it as a catch word, often to make acceptable very unsustainable actions or programmes.

⁷ Such as the 5th Action Plan for Environment and Sustainable Development.

⁸ By strengthening the present Title XVI, Articles 130R - 130T.

Also, powerful lobbies have isolated aspects of sustainability to justify clearly unsustainable practices (such as forestry monocultures), if judged in a more comprehensive ways.

This confusion is intensified by linguistics. Sustainability is an Anglo-Saxon word, which cannot be well translated into the Latin languages⁹. In other languages composite words are used to describe the concept, leading to further uncertainties and misconceptions¹⁰. Perhaps the use of the term “aeiphoria”¹¹ (from the Greek *αεί φέρω*, which means bearing fruit forever) could be used to replace sustainability in all languages; (it is a term related to “euphoria”).

Lack of operational precision : The conceptual confusion has been perhaps at the root of lack of an operational precision. Although programmes and projects are promoted under the banner of sustainability, it still remains unclear how the theoretical concept is translated into operational terms, which actions can be characterised as truly sustainable, what are the interfaces of sustainability with other approaches (such as endogenous development, trade liberalisation, the implementation of subsidiarity).

Ignorance by the wider public : Perhaps the greatest weakness is the total ignorance of the term by the public. Except for certain specialised circles, and in spite of the interest created by the Rio Conference and its results, sustainability remains completely unknown¹². In Europe, no systematic effort has been made to inform the public about sustainability, in spite of the fact that it has become a key element of European Union policy. A major campaign on this issue is absolutely necessary; and it would not have a difficult task, as sustainable practices (like crop rotation) were very well known and understood by traditional communities, and their memory is not fully forgotten; it would be easy, therefore, to build on them and to extrapolate from them sustainable guidelines for contemporary activities.

As a result of these major weaknesses, sustainability may be abandoned before it is practised and its results evaluated. Thus, instead of becoming a valuable tool for reconciling increased income generation with improving living conditions, it may just be added to the series of much abused words, like democracy, equality, cohesion, brotherhood and others.

resources and the need of management

⁹ For example the terms *soutenabilité* or *durabilité* and *développement durable*, which seem unsatisfactory to the French.

¹⁰ In Greek, often the terms “continuous” or “feasible development” (“συνεχής” or “βιώσιμη ανάπτυξη”) are used, especially by those who wish to undermine the concept.

¹¹ Which is an established term in forestry, describing a practice of forest management which does not degrade the quality of the forest ecosystems..

¹² The Commission could initiate a rapid survey on the knowledge and understanding of sustainability throughout the European Union to confirm, or to refute, this argument.

To avoid this ignominious fate, certain aspects of sustainability have to be clarified. Perhaps the first is that it is not primarily an environmental, but an economic concept¹³, and it concerns the reasonable use of resources.

Resources are the main concern of sustainability. There are two main categories of resources : natural and anthropic.

Natural resources can be material (minerals, soil, water), energy (solar radiation, geothermal and kinetic energy) or functional (climate). They can be classified as renewable (water cycle, solar energy), non-consumable (territory, soils, atmosphere) and non-renewable (mineral energy sources); and this last category could be divided in abundant and scarce resources.

It is not attempts at classification, however, which are significant. It is the effort to study and understand the complexities of natural resources and their interactions.

Renewable resources, for example, can be dramatically modified by human actions and lose their ability to regenerate. Water cycles can be disturbed by deforestation, hydraulic projects, and pollution. Ecosystems lose their ability for species reproduction, and some of their main functions and values through mismanagement or overexploitation. Climate is influenced on a global scale by phenomena such as the "glasshouse" effect, warming and sea level rise, ozone depletion, resulting locally in rise of extreme conditions.

On the other hand, permanent, non-consumable resources can be degraded and can lose their values. Thus soils can erode, become saline or saturated with agrochemicals. Territory can be "consumed" by anarchic urbanisation. Air can become a problem due to atmospheric pollution.

One should also distinguish reversible from irreversible resource degradation. For example, discharging sewage into a stream will cause serious harm to its ecosystems and dependent species; but once the discharge is stopped or sewage treated, the ecosystems may recover in a reasonable time. On the other hand, the deforestation of a slope may cause severe soil loss through erosion, which is not reversible in human terms. Thus one could speak of elastic resources, which recover easily once anthropic pressures are removed, and inelastic ones, where recovery is either impossible or extremely long.

Equally complicated are anthropic resources. These can be material (building shells, infrastructure works, such as harbours, airports, road networks, sewage and water and power and telecommunication systems) and immaterial (skills, education, culture, capital).

Some anthropic resources are a combination of both. For example, cultural heritage includes both material and immaterial elements. Social services, such as public health or education facilities combine resources of different types, and constitute an integrated resource for society.

¹³ Still in the European Commission most aspects of sustainability are handled by DG XI, the environment General Directorate. Thus, the European Consultative Forum for Environment and Sustainable Development operates under DG XI.

table 1 : principal resources

<i>type of resource</i>	<i>material [M] non-material [NM]</i>	<i>renewable [R] non-renewable [NR]</i>	<i>consumable [C] non-consumable [NC]</i>	<i>elastic [E] inelastic [IE]</i>
<u>Natural</u>				
Biodiversity	M	R	C	E+IE
Territory	M	NR	NC, but degradable	IE
Soil	M	R	NC, but degradable	IE
Freshwater - surface water - aquifers	M	R	C	E
Atmosphere	M	R	NC, but degradable	E
Minerals	M	NR	C	IE
Energy - solar - geothermal - kinetic ¹⁴	M+NM	R	C	E
Climate	M+NM	R	NC, but degradable	E
<u>Anthropic</u>				
Cult. heritage	M+NM	NR	NC, but degradable	E
Infrastructure	M	R	NC, but degradable	E
Settlements	M	R	NC, but degradable	E
Landscapes	M	NR	NC, but degradable.	E+IE
Human potential	NM	R	NC	E
Capital	NM	R	C	E

It is obvious that each human activity “uses” a number of resources in many different ways. It becomes necessary, therefore, within the framework of sustainability, to develop a new approach to resource management.

A first step is to establish resource analysis for all major policies, programmes and projects. This would entail an identification of all the resources needed for their implementation, a quantified estimate of their use, and a study of their relationships.

The second step would be a resource assessment. Under questions would have to be answered as to the exploitation of scarce resource, as to the possible degradation of other related resources, as to the feasibility of using alternate resources, as to the “economy” - in the wider sense - of resource use. This should not become another bureaucratic procedure¹⁵, but instead an intellectual process of interest and concern of both the public and the private sector.

Finally, as the population of the earth is increasing, and income levels are rising, it becomes obvious that resources should be managed in reasonable ways, in order to satisfy legitimate human needs - now and in the future - and to ensure a certain degree of equi-

¹⁴ Energy from wind and waves.

¹⁵ As it has happened with the Environmental Impact Assessment in some European countries, where it is regarded as one more bureaucratic formality in issuing permits.

table access to them. This is a major issue, with strong ethical and political implications, which will be perhaps the focal element of human concern in the 21st century.

Reasonable resource management should not be seen as a top-down approach, involving only policy makers and technocrats. It has to become a concern of all the levels and structures of society, and it should reach the level of each citizen, in order to influence his/her own personal choices, consumption patterns and everyday actions. In turn, these citizens, through the democratic process and the free-market practices, will carry their message and their will to higher administrative and political levels.

Thus sustainability cannot exist without the active interventions of the wider public; that is why the public needs to be informed and sensitised on sustainable living patterns, based on a wise and equitable use of resources.

2. Resources in the coastal zones

The comments on sustainability and resources presented in the introduction are of general applicability. In the process, however, of translating sustainability in operational terms - without which this concept will fade out - it becomes necessary to analyse its implementation in specific areas and sectors; without ignoring, of course, the basic continuity of the territory and the interdependence of activities. The coastal zones are such a type of area, with its own intrinsic characteristics, that should be seriously taken into account in implementing sustainability.

A key point to be noted here is that often coastal zones are considered (and treated) as a mere extension of the mainland to the sea, with activities and people based in interior regions cross them to gain access to sea frontage. Without neglecting the strong links between each coast and its hinterland, however, it is useful to consider it under its own identity, with its own problems and potential.

In addition, the present study focuses on coasts of the Mediterranean Basin, with their own natural, cultural and socio-economic specificities, which become apparent through the case studies included.

definition of the coastal zone

For the purpose of this study, the coastal zone is defined as the land area which is influenced directly or indirectly by the presence of the sea (from the physical, social, cultural and economic point of view), as well as the marine areas which are related to land-based activities. This definition may sound somewhat unclear and subjective. Still it can be applied with reasonable ease, especially if all of the criteria are used, and it provides important operational advantages.

Thus the coastal zone is in essence the interface between the land and the sea, with linear characteristics and a variable width. This width depends on a number of factors :

Land morphology : Flat coastal plains with gentle slopes create a continuity with the marine front, as seen in some of the Atlantic countryside of Morocco, between Kénitra and Larache. On the other hand, coastal mountain ranges can completely isolate narrow strips along the sea from the interior, as it happens in southern Croatia, north from Dubrovnik.

Rivers and wetlands : With large rivers, especially if they are navigable, the presence of the sea is transferred deeply into the countryside. Thus Arles in the South of France, is a traditional coastal city¹⁶, although distant by about 30 km from the sea, to which it is tied by the umbilical cord of the Rhône river. In a similar way, coastal wetlands bring marine water of varying salinity well into the land, and with it the presence of marine elements, with a strong impact on the natural environment and on human activities¹⁷.

¹⁶ As demonstrated by the emblem of the city, whose main element is an anchor.

¹⁷ Such as the Merja Zerga in Morocco.

It should be noted here that some rivers, depending on conditions in their hydrological basins, have greatly contributed to the extension of coastal zones seaward, through the sediments they transport. Nowhere is this most striking than in central eastern Greece, on the road from Thessaly to Locris, where the narrow pass of Thermopylae, between the steep mountains and the sea, where Leonidas and his 300 Spartans and other allies fought bravely against the Persian army in 480 bC, is today a wide coastal plain of 6-8 km, built in 2500 years by sediments carried by the flow of Sperchios river.

This river action has been greatly diminished during the last decades, due to the construction of dams, which retain a large part of the sediments, which in turn decreases their operational life expectancy. A secondary result has been the structural weakening of many coastal wetlands¹⁸.

Gulfs and estuaries : Large gulfs and estuaries (such as the Amvrakikos Gulf in western Greece, and the Sado river estuary in southern Portugal, or the Po delta in north-eastern Italy) bring large bodies of sea water into the land. They develop their own coastal zones, which are further extended inward by wetlands and smaller rivers. Complicated systems are thus created, where the marine and land elements are interrelated in zones of considerable width.

Islands : In all but the largest islands, the ratio of coastal zone length to total area is extremely high. Coupled with the sloping morphology of most islands (due to their remote history as submerged mountains), which allows an almost unobstructed view of the sea, the sense of the sea is always present. This is reinforced by the special microclimatic conditions, and especially wind patterns and their marine characteristics (such as the *meltemi* summer winds in the Aegean Sea). Thus islands, with few exceptions, can be considered as belonging integrally to the coastal zones.

Human actions : Anthropic interventions have also influenced the interface between land and water; in some cases extending the marine element inward, by the opening of canals and artificial lagoons, and elsewhere appropriating (by drainage, landfills and other means) marine areas and constructing on them harbours, dikes, causeways, even whole settlements, such as the city of Venice.

Of particular interest are the indirect and unintended results of human actions. Thus the straightening of river beds and their lining to reduce flood danger, has increased markedly the speed of water flow, which in turn modified current dynamics where they enter the sea. In some cases, the result has been a dramatic decrease or disappearance of sandy beaches, as documented by aerial photography at certain Greek sites¹⁹ (in Katerini in south-eastern Macedonia and in northern Kriti island).

coastal resources

¹⁸ In Western Greece, the sandy strips separating the North Amvrakikos lagoons from the gulf had to be artificially reinforced after the damming of the Arachthos and Louros rivers.

¹⁹ See Antonopoulos Ch.G., "Natural and man-induced processes along the coast of the Pieria region", in Salman *et al* 1995, pp. 29-38.

Coastal zones, especially if one considers the rich mosaic of the Mediterranean Basin, contain a very large variety of resources. Still a number of them are intrinsic to these zones, and have a particular socio-economic significance. It is useful, therefore, to focus on them, as the conclusions may provide valuable inputs for improving the management of the sensitive coastal zones. These resources should be assessed on a number of criteria, which include : uniqueness, availability, degree of demand, pressures exerted on them.

natural

Of the natural resources, one should concentrate on the following :

Territory : Through the centuries, the use of territorial space has often led to armed conflict and war. Today, with national frontiers established and respected in most cases, this has become rather an exception, frowned upon by the international community; still there is dispute in the use of non-national space resources, such as the poles and international sea areas. Within many countries, internal conflicts have arisen on the use of the land, as various interests compete and antagonise each other. The state intervenes to defuse such conflicts through planning and land use regulations, often with limited success. Lately, marine areas have experienced conflicting use claims, among fisheries, intensive aquaculture activities, marine tourism activities, industrial facilities and sea lanes.

In the Mediterranean, the coastal territory is usually narrow and limited. As population increases in the coastal zones, and activities intensify, the demand for space becomes stronger and more aggressive. The problem becomes further complicated, because certain activities require space in particular conditions. For example, tourism and housing require space that is in a good environmental state, which may be indifferent to industrial or harbour facilities. In the same way, aquaculture facilities, fisheries and marine tourism cannot be developed in polluted waters, which is not a key issue for marine transport.

Thus territorial space, land or marine, is a finite resource, in high demand, which is often quality dependent. It is necessary, therefore, to allocate it with prudence to the various uses which claim it, and to manage it on a continuous basis.

Cultivable soil : Part of the territory is covered by cultivable soil, which has been the traditional resource exploited by agriculture, since thousands of years. Fertile soils, enriched by nutrients from rivers and wetlands, with abundant water supply, have been the backbone of great civilisations, giving sustenance to local populations, and encouraging widely spread commerce. In our times, two causes have started seriously undermining this resource, and menacing gradually the important activity it once supported :

- On the one hand, the intensification of agriculture²⁰ in the developed countries has led to the degradation of soils, through saturation with agrochemicals and salinisation, while aquifers are being depleted, removing ground humidity²¹.

²⁰ Caused to a large extent in the EU-member states by the Common Agricultural Policy, and the system of subsidies it supported.

²¹ In the last 50 years, ground water level drops from 10-12 to 120-150 m. are not uncommon in the plain of Thessaly.

- On the other, unchecked urbanisation, and the commercialisation of land, has been devouring fertile agricultural land, especially around the larger cities, but also on the sea front.

Around the Mediterranean, fertile soils are limited. Demand for them has been high, and is maintained at intense levels in the East and South of the Basin, as populations increase dramatically, and the need for food (as well as cash crops) is high. In the more developed north, changing social patterns, decreasing subsidies, global competition, and the existence of more advantageous alternate activities, are reducing the number of people involved in agriculture, and have led to a gradual stabilisation of demand. In all cases, fertile areas should be identified and should be maintained only for cultivation, avoiding uses which do not exploit this specific resource.

Freshwater : Freshwater of an acceptable quality is an essential resource for the sustenance of life, for most of the productive activities and for the maintenance of biodiversity. At present, the estimated global water demand and consumption is as follows²² :

- Agriculture :	65 %
- Industry :	22 %
- Domestic use :	7 %
- Reservoir losses :	<u>6 %</u>
total	100 %

The consumption for agriculture is much higher, if one excludes the highly industrialised countries; it averages more than 70% in the Mediterranean region and exceeds 80% in Greece. Countries like Egypt, Israel, Libya and Tunisia face serious water shortage, as the water demand is more than 80% of the available resources. Others, like Albania, Greece, Lebanon, Morocco, Turkey, have enough resources, but not properly distributed in proportion to the population, thus causing local shortages²³. No estimate is made of the water used, if any to maintain freshwater-dependent ecosystems. Tourism demand has been included under domestic uses; it has, however, its own distinct and negative characteristics, mainly :

- high water consumption per person,
- concentration in particular places, such as islands, with meagre water resources,
- peaking during the summer months.

Supply to the coastal zones has been decreasing and becoming problematic, both due to retention upstream, through the system of reservoirs which have multiplied, and to water pollution from industrial, domestic and agricultural activities.

As long as water cycles continue to be disturbed by anthropic factors, this discrepancy between increasing demand and dwindling supply will soon create an explosive situation in the Mediterranean Basin, unless drastic water management measures are taken. These measures should be technical, regulatory and financial, and should concern all aspects of both water supply and demand.

²² Bibl. : Postel 1997, p. 57.

²³ This has been the rationale for the infamous Acheloos river diversion scheme, to bring a large part of its flow from western Greece, through 18 km of the Pindos mountains to the plain of Thessaly.

Sea access : The sea itself has always had a particular attraction to humans, besides its importance as a transportation medium, and the exploitation of its ecosystems through fisheries. Therefore, the possibility of access to it constitutes a specific resource of the coastal zones. In the past, for historical and practical reasons, this access was centralised in points, where harbour facilities and settlements were established, and marine-oriented activities were concentrated; thus large parts of the interface between land and sea remained free. Today, with more secure conditions and ease of access, occupation of this interface has been growing rapidly, spearheaded initially by industrial facilities²⁴, which sought sea frontage for ease of marine transport, followed by the spread of tourist facilities and resort housing.

It is evident that with population growth and rise of income, the demand of sea access will rise. As the length of the coast is finite (the Mediterranean coastline is 26000 km), it is obvious that measures need to be taken to allocate this resource with reasonable criteria to the various uses, taking into account the legitimate claim of the population for unimpeded access to the sea.

Beaches : For tourism, beaches are a particular resource in high demand, and limited supply. They are under heavy pressure during the second part of the 20th century, and not mainly due to pollution and destabilisation. It is often the facilities created to satisfy the demand for beach access (tourist installations, resort houses and villages, access roads, infrastructure, etc.), which are destroying them, and are thus undermining the human activity as well. At the same they are degrading or totally obliterating very rare ecosystems related to beaches, such as sand dunes, and nesting areas for the *Caretta caretta*²⁵.

It is imperative, therefore, to manage this precious resource effectively through land use measures, that would not allow any construction in the immediate vicinity of beaches.

Biodiversity : The biodiversity of the coastal areas is usually very high. Especially in the Mediterranean it is unique, on a global scale²⁶, as a result of its location among three continents, its geomorphology, its varied climate and the richness of habitat types.

This variety of habitats ranges from rocky coasts to sandy dunes, from lush riparian forests to dry sebkhs, from hypersaline lagoons to freshwater lakes, from *Quercus spp.* forests to shrublands, and many more. A characteristic case is the Mt. Athos peninsula in Halkidiki, where in a horizontal projection of a few hundreds of meters, there is a succession of habitats from alpine to Mediterranean.

This variety results in a richness of species. Its flora of about 25,000 plants, of which more than 50% are endemic, is second only to Brazil, Columbia and China. Some interesting comparisons are given below²⁷:

²⁴ Such as the industrial complex of Fos-sur-Mer, between Marseilles and the Camargue, in the South of France.

²⁵ A typical case is the Laganas bay in southern Zakynthos island, where the construction of sub-standard tourist facilities right on the beaches has both degraded the nesting areas of Marine turtles, but also has resulted in a lowering of tourism level and income.

²⁶ Bibl. : Quezel and Médail 1995.

²⁷ Bibl. : Conservatoire du littoral 1997.

	<u>Area (km²)</u>	<u>No of plants</u>	<u>Percent endemic</u>
Mediterranean	2,300,000	25,000	50%
Australia	7,682,000	22,000	34%
India	3,166,000	15,000	30%
Zaire	2,345,000	11,000	30%

Equally important is the fauna of the Mediterranean. 184 mammal species have been noted in the region, of which 46 are endemic (25%), while 52 species are threatened (28%). Of the 62 species of amphibians in the region, 35 are endemic (56%), same as 111 (62%) of the 179 reptile species.

The region has a particular importance for ornithofauna. 20 globally threatened bird species live in the area, and of them 7 nest in its wetlands, which include habitats for more than 70 locally threatened bird species. Being on some of the major flyways, it is being used by an estimated 2 billion birds of 150 species as a stopping and feeding place during their yearly migrations. The trends, however, are negative as the number of waterfowl in the Mediterranean has decreased by 46% in the last 20 years²⁸, due probably to massive wetland loss in the area. On the other hand, populations of key species, such as *Pelecanus crispus* and *Phoenicopus ruber* are recovering.

Biodiversity in the region is menaced greatly from uncontrolled development, which results in the anthropisation of natural areas and their pollution. In the past, this was done mainly to expand cultivation, which did not destroy completely biodiversity, and was to some extent reversible. Recently, it is due to tourism, expansion of urban settlements, industrial facilities and large infrastructure projects, which have dramatic and irreversible impacts. That is why serious measures to control land use and to identify and conserve the important areas for biodiversity are necessary²⁹.

anthropic

Equally important are a number of man-made resources in the coastal zones :

Elements of cultural heritage : The Mediterranean has been the birthplace of many civilisations, which grew and died on its shores. Strong fluxes of population, commerce, piracy and military invasion, established close links among the people in the region³⁰. Great empires appeared and were lost : the Greek, Roman, Byzantine, Arab, Ottoman empires left their traces all over the Mediterranean, and contributed to the establishment of a Mediterranean culture. The contact of the Arab and Moslem world with Christianity in Spain and Asia Minor gave rise to art and architecture of a unique richness.

Thus the Mediterranean region is full of remains of cultural heritage, with a really great density. Part of it is in physical form, such as archaeological sites, old settlements, monuments, and art objects. A lot has been destroyed due to wars and uncontrolled de-

²⁸ From 2.8 to 1.5 million, between early 1970s and 1989 (Conservatoire du littoral 1997).

²⁹ A step in this direction is the implementation of the EC Habitats Directive, and the MedWet initiative for wetlands.

³⁰ It is interesting to contrast the Greek settlement of Emporion (which means trading post) in Catalunya, with the Catalan influences in some of the Aegean islands.

velopment, but what remains is still of great importance³¹. Some of it is not material, such as traditions and customs, dances and festivals, cooking and family patterns. These are menaced from cultural globalisation and homogeneity. All of this cultural heritage constitutes a valuable resource, part of the richness of the Mediterranean, which should be well maintained for the future generations.

Infrastructure : The existing infrastructure in the coastal zones, which often results from investments of previous generations, constitutes a resource, to be carefully improved and completed, taking into account the specificities of these zones. However, today more efforts are directed at the construction of new infrastructure projects, which the same approach as for the inland areas, without considering sufficiently the particular characteristics of the coasts.

Transport, for example, continues to be based on the automobile and as a consequence a network of highways is being constructed, especially in the European Union countries. No systematic effort is being made to promote the use of marine transport, by developing marine networks, new shore facilities, new types of faster and more comfortable ships. In the particular case of the Mediterranean, with cities distributed along its shores, such networks would make sense, and they would continue historical practices. Unfortunately, whatever progress is being made along these lines is sporadic and a result of private and isolated initiatives. In addition, there is no plan to create interchanges among the different transportation media; such as relating airports to harbours, so that passengers could be encouraged to shift from one mode of transport to the other.

Sewage collection and treatment is a key infrastructure for a coastal zone, if marine pollution is to be controlled. Yet most of the large and medium settlements in the Mediterranean have no such facilities³². The handling of solid wastes is also a problem, due to the narrowness of coastal zones. In many countries of the South and East of the Mediterranean lack of funds has not allowed any significant infrastructure improvements. This, however, can be remedied by technology and fund transfers from the more economically developed areas³³.

It is clear, therefore, that what is needed is capitalising on existing infrastructure, and increasing new investment in a selective way, which takes into account the particular needs and the opportunities of the coastal zones.

Settlements : The Mediterranean coast is dotted with settlements, large and small, most with historical origins, which provided reasonable life conditions for their inhabitants, up to the middle of the 20th century. Not only are many of them part of the cultural heritage of the region (such as Aleppo, Arles, Dubrovnik, Fes, Sevilla, Venice and many others), but they represent a human investment and a current resource.

³¹ As documented in the paper "Conservation and management of Cultural patrimony in the Mediterranean Region", World Bank, Environment Division, Washington DC, USA, 1989. UNESCO has also declared a considerable number of World Heritage Sites in the Mediterranean.

³² Istanbul, with a population of 12-14 million, discharges its raw sewage in the Bosphorus, which results in massive pollution and the disappearance of most fish species (13 are left, of more than 110 species fifty years ago).

³³ Such as the Euro-Mediterranean partnership and the MEDA programme promoted by the European Union, which covers such actions.

Lately, however, they are being subjected to strong pressures, due to dramatic population increases, as in the cases of medieval Cairo and Istanbul, but also to new patterns of life and to the automobile, which result in uncontrolled expansion. As a result, natural and rural areas are being urbanised at alarming rates, and the settlements themselves lose their functional coherence, which leads to various dysfunctions. One of the most serious is the totally unsustainable operation of most cities, which draw resources from vast areas around them³⁴, depleting them, and export back large quantities of sewage and waste. In addition, the cultural heritage of historical cities and sites, such as Paphos (Cyprus), Carthage (Tunisia) and the Giza plateau (Egypt) is being lost due to uncontrolled urbanisation.

Policies to resolve these problems exist in some of the countries of the north Mediterranean, where population movements are stabilising. But they are urgently needed in the rest of the region, where developments seem at present uncontrolled.

Human potential : Because of their relation to the sea and to the ease of contact it creates, the populations of the coastal zones have developed through historical and social evolution particular traits. They are more cosmopolitan than their compatriots in the interior, more hospitable and accepting of people of different cultures, more open to change. These traits constitute a resource, on which sustainable economic development could be based. But at present it is undermined by a number of factors, as analysed in the next chapter.

³⁴ The water supply of the city of Athens (population around 4 million) is assured mainly by transfers from the Evinos and Mornos rivers, 150 km to the west.

table 2 : key coastal resources

<i>resource</i>	<i>uniqueness</i>	<i>availability</i>	<i>demand</i>	<i>pressures</i>	<i>action</i>
Natural					
Territory	unique	limited	very high and increasing	very high from urbanisation	land use management
Soil	common	limited	high, stabilising	high from over-exploitation	protection of fertile soils
Freshwater	essential	limited	very high and increasing	depletion and pollution	urgent need of management
Sea access	important	limited	growing rapidly	conflicting uses	reasonable allocation
Beaches	important		very high and increasing	urbanisation, pollution	no construction in their vicinity
Biodiversity	very high	decreasing	limited	urbanisation, overexploitation	land use control conservation
Anthropic					
Cultural heritage	unique	very abundant	growing	urbanisation, neglect	maintenance
Infrastructure	mediocre	insufficient	high	lack of funds wrong choices	selective investment
Settlements	problematic	insufficient	high	overpopulation, speculation, automobiles	planning for sustainable settlements
Human potential	very high	growing	selective	fanaticism, homogenisation, unemployment	stabilisation of population education

Resolving land use conflicts : The Camargue (France).

The Camargue is a vast bio-geographical unit, corresponding to the delta of the river Rhône, in the Mediterranean South of France. Situated between the two branches of the river, it extends from the gulf of Aigues-Mortes in the West, to that of Fos-sur-Mer in the East, and from the Rhône canal and the Crau plain in the North, to the Mediterranean in the South (Golfe du Lion). The slight inclination of the ground in the area, combined with its flandrian sediment origin, makes possible the distinction of three sectors: (a) the *Haute Camargue* in the North, nearer to the river, consisting in bogs of non-salted water, (b) the *Moyenne Camargue*, fluvio-lagunary and with low but clearly noted salinity, and (c) the *Basse Camargue*, of laguno-marine origin, consisting in very highly saline marshes.

The climate of the area is typically Mediterranean, characterised by smooth winters, hot and dry summers, and irregular rainfalls; the region is exposed to strong winds, a fact which, in association to the high temperatures, results in an intense water evaporation and an increase of the salinity level of the soil, especially during the summer.

Limited initially by the natural conditions (non-fertile soil with high salinity and submersion tendencies and lack of construction materials), difficult to any permanent cultivations, the development of the Camargue was initiated in the 12th century, with the first sanitation and forest cutting works, undertaken by the Church. Until the 20th century, the development of the area depended mostly on agriculture, located in the highest territories of the *Moyenne Camargue*. The low density of the local population, and the high cost of the hydraulic installations, favoured the establishment of large estates, mostly Church and later State properties. The main traditional activities were limited to the extensive sheep-raising and to wheat cultivation, but also to fishing in the marshes and hunting in the forests, and to cattle raising, mainly for meat production, as well as horse raising.

The new ideas of the 19th century about the use and industrialisation of the territory, as well as the purchase of vast areas by large industrial concerns, coming from outside the area and introducing important capital, resulted in the intensification of agriculture. In turn, the exploitation of the *Basse Camargue* laguno-marine area starts with the pioneering soil-drying procedures and the construction of the salt production and transformation industry and the new labour town of Salin-de-Giraud by the Péchiney company. In the second half of the century, the combination of the local bull breeds with the ones from Spain, developed a new bovine race, as well as the French bull-fighting tradition, adapted to the context of social culture.

During this period, the *Basse Camargue* becomes a conflict area between salt producers and farmers, since the latter lose their low territories, used in the past as grazing areas, and worry about the increase of salt intrusion and the eventual salinisation of their lands. The creation, in 1927, of the Botanical and Zoological Reserve of the Camargue, promoted by conservationists in order to preserve the original richness of the local ecosystems, put an end to this conflict, introducing nature protection as a third and determining use of the area.

From 1942 to 1975, the Camargue is characterised by an economic agricultural prosperity, based on vine regression and a spectacular development of rice-culture (especially favoured by the Marshall Plan). Bull-raising, for fighting purposes, is also very much developed, as well as industrial activity, extending now outside the existing industrial areas (with the creation of a harbour and hydrocarbon treatment and storage complex in Fos-sur-Mer), at the expense of the natural spaces, that decreased by 60%. Moreover, a fourth factor, appears in the economic development of the region; it is middle-class mass tourism, attracted by the sea shore of the Camargue and the natural beauty of the area.

In front of this danger, threatening the biological wealth of the area, administrative and private measures were applied, in order to protect the nature of the site, aiming mainly at the control of urbanisation, and of unplanned activities. The inscription of the Camargue in the list of monuments and preserved sites (from 1943 to 1963) and the creation of the Natural Regional Park of the Camargue (in 1970), were two of the most effective measures for restricting industrial expansion and the uncontrolled expansion of agricultural land. The regression of rice cultivation (with the entry of France into the EEC, in 1980), gave place again to traditional wheat, fruit and vegetable cultivations, as well as to alternative activities, like hunting, tourism and aquaculture (in a smaller scale).

Today the rural population of the area is quite small and dispersed in small settlements, the principal ones counting no more than 2,500 inhabitants. The agricultural and industrial sectors are in decline, while the tertiary one gains an increasing importance. Agricultural exploitations are still characterised by their large surfaces, the mechanisation level remaining important and the cost of operating and maintaining the indispensable drainage and irrigation networks very high. The cereal production is still the dominating activity³⁵, but rice cultivation is increasing again³⁶. The merino sheep raising is in decline, because of the constant decrease of grazing areas, social reasons, and foreign competition. The same reasons, combined with the disproportionate numbers of animals raised and the saturation of the bull-fighting tradition, have also caused serious problems to bull-raisers. Fishing, having traditionally suffered from a conflict of interests³⁷, concerns today only some forty families and is carried out essentially in the sea and the marshes outside the Reserve, having a very low economic return. The same happens also with aquaculture activities, which have actually lost 50% of their previous areas and production rates³⁸, because of high production costs and product marketing problems, due to the closure of the German market.

On the other hand, the industrial surfaces, covering 20% of the whole territory, as well as the activities carried out, have remained stable for the last ten years, constituting no particular danger for the ecological balance of the area, with the exception of a cellulose treatment industry, situated in Tarascon, which should be taken into consideration. On the contrary, the stability of hunting activities, covering 75% of the territory, combined with its very large importance for the local economy, constitutes an obvious threat for the biodiversity of the area. The pressure exerted on the natural environment is difficult to evaluate; however, a general estimation about the existence of 5,000 water-bird hunters and 150,000 duck-hunters, as well as the resulting lead contamination of many habitats, have already led to a limitation of the hunting periods.

The most important economic activity, though, for the area at present is mass summer tourism, estimated at 1,000,000 annual visitors, invading the sea shore until recently in mostly uncontrolled ways³⁹. The only Mediterranean coastal zone in France, having resisted up to now to urbanisation, is actually being seriously threatened by tourist installation facilities. Increasing pollution and the systematic degradation of sites are the main consequences of tourism development. In addition, security and sanitation problems have also appeared, a fact which has finally alarmed the municipal

³⁵ In 1980, cereal culture occupied 52% of the agricultural surface and 75% of the cultivated territories.

³⁶ In five years, from 1982 to 1987, because of EC subsidies, the rice-cultivation surfaces doubled, attaining 11,500 ha, and represent today the two thirds of the cultivated territory.

³⁷ Fishermen have always wanted the communication between sea and marshes, while farmers systematically opposed it for fear of salinisation of the surrounding areas.

³⁸ In 1981, the local production represented one quarter of the whole French production (500 tons) and covered 1000 ha.

³⁹ In 1975, the number of visitors practising "wild" camping adepts in the area was estimated between 20,000 and 30,000, on 60 km of sea-shore.

authorities and has led them to impose strict measures for the protection and the controlled urbanisation of the area⁴⁰.

In addition, the deterioration of traditional tourism activities, in association with the recent development of other types of leisure activities, allowing a more close contact with nature and the rural traditions of the area, resulted in the modification of the visitors' motives. A new programme of sustainable development has been promoted by the Gard Department in the Languedoc-Roussillon Region, foreseeing ecotourism, wetland conservation, the raising of public awareness and education at a newly created study centre, wetland restoration, water management and pollution reduction. Discovery itineraries of the local wildlife have been established by the PNRC, the RNC and the Conservatoire du Littoral, while theme excursions are being proposed by the private sector. The creation of a water-bird reception zone and of a small eco-museum, in 1988, constituted parts of the same project.

Nevertheless, the association of tourism activities to the agricultural ones, with the transformation of the traditional farms into small hotels and *pensions*, and the organisation of horse riding excursions and the famous "*journées camarguaises*", has started trends of a mild commercialisation of the area, systematically promoted by both public and individual initiatives. In any case, the transfer through the centuries of the traditional centre of gravity of the local economic development, is a very common phenomenon in all Mediterranean coastal zones; what is remarkable though, is that in the Camargue this very phenomenon has been transformed into a conscious policy, both of the public and of the private sector, aiming at the minimisation of social and environmental impacts, without, however, being fully successful.

It is evident then, that the Camargue constitutes a rich biological patrimony of considerable international importance, threatened by the increase of tourism and by pollution from agricultural, industrial and urban effluents. As in most Mediterranean countries, its ecosystems are fragile semi-natural endangered environments, integrated in an agro-industrial and tourist frame. Occupied and modified, since a long time ago, by human activities and interventions, these ecosystems have largely contributed to the economic development of the region, often as a result of costly and important technical and financial efforts. Paradoxically, until the early 20th century, human activities organised resulted in wetland ecosystems, which were highly artificialised, but also diversified, and of great biodiversity value. In the last fifty years though, the traditional activities associated with the wetlands have greatly changed, because of the decline of the rural population, the changes of the market conditions and the development of a more intensive agriculture⁴¹.

Thus, these wetland zones are very sensitive and threatened by multiple interests. Their actual state is the consequence of the constant evolution of all their natural ecosystems, as well as of the multiple human activities, which have transformed since always the Mediterranean Basin landscapes, not only through large interventions aggressively modifying (or sometimes even completely destroying) certain natural habitats, but also by apparently less aggressive activities, which, nevertheless, have insidious but profound impacts in the medium and long-term.

Faced with the growing pressures of economic necessities at all levels, choices, measures and compromises have become imperative; it is now more urgent than ever before, that both the decision-makers and the public become seriously aware of the costs and benefits of different possible

⁴⁰ Camping on the Saintes-Maries and the National Reserve of the Camargue sea-shores is prohibited, as well as automobile circulation. All urbanisation projects near the sea-front have to be abandoned and any tourist installation is allowed only in the inland zones, in the cities.

⁴¹ New operational schemes have been developed, based on the change of the hydraulic regime in the benefit of cultivation and grazing activities, as well as hunting, fishing and sea-shell cultures ones.

options, and thus take into real consideration both the requirements of development and of conservation of the biological and cultural capital of these special *milieux*.

Conclusion: In the Camargue and its wider area, industry and tourism have developed in often conflicting ways, at the expense of one of the great wetlands of the World. Still, positive efforts are being made to defuse the conflicts and to find a more sustainable balance in the productive activities and the conservation of the area's natural resources. The systematic selling of the traditional environment is the actual official and private sector development policy adopted for the Camargue; it consists in the introduction of new activities (not always very pleasant), assisted and supported by most of the local population, which often result in the development of a medium-size business network, which may be economically viable, but is deprived of the advantages and the efficiency of an integrated approach to the development of the area.

Boulot, S., 1991, *Essai sur la Camargue: Environnement, État des Lieux et Prospective*, eds. Actes Sud, Avignon, France.

Salathé, T., 1996, "Natural Ecosystems Management", in *Workshop on Policies for Sustainable Development of Mediterranean Coastal Areas*, Santorini Island, 26-27 April, eds. UNEP, 1996, Athens.

3. Social aspects

Social conditions and trends depend on the interplay of a variety of factors - historical, cultural, religious, financial. As a result, social aspects of sustainability are much more specific to each geopolitical region, and have to be examined within their own context, so that meaningful conclusions can be reached.

determining factors

From the social point of view, the Mediterranean has always been a very particular sea, surrounded by a particular coastal zone, as brilliantly analysed by Fernand Braudel⁴². The reason is that it is practically a closed water mass, with moderate climate, and carries behind it on three sides (north, south and east) large land masses, with considerable wealth, which it brought into contact through the ages. That is why the Mediterranean has been navigated since the Neolithic age, and has always been seen as a unifying, and not a dividing, element. This role has created the particular character of the coastal zone of the Basin, which is very different from that of most other coasts of the world⁴³.

The study of history indicates that cultural and economic diversity was always quite a determining factor in the Mediterranean. But power shifted from side to side of the Basin, from Athens to Alexandria, from Carthage to Rome to Constantinople (later Istanbul), from Venice and Genoa to Seville, with empires rising from them. Of course there was richness and poverty; but often the differences within the same settlement were greater than from city to city. Western colonialism, with the resulting overexploitation of local resources, has upset this balanced pattern, and has created the prerequisites for the current social and political problems in the region.

At the end of the 20th century, the economic discrepancies in the Mediterranean are so large that they create an unstable situation. The disparity between the EU and the Maghreb and Mashreq countries, which is today 10 to 1, will probably increase to 20 to 1. According to European Commission⁴⁴ and World Bank⁴⁵ estimates the following trends in GDP per capita are expected :

		<u>1990</u>	<u>2010</u>	<u>increase</u> [in USD]
Europe	16,000	24,000	8,000	
- Israel		10,600	16,860	6,260
- Maghreb		1,410	1,750	340
- Mashreq		810	940	130

This abysmal situation has been formally recognised by the European Union, and has formed the rationale for initiating corrective measures³²; but they are too late and still too weak to address the problems effectively. Besides, the need of action has also been accepted by the totality of Mediterranean countries, which have established for this purpose

⁴² Bibl. : Braudel 1966, 1985,1986.

⁴³ With the exception perhaps of certain parts of south-east Asia.

⁴⁴ Bibl. : European Commission 1995 (a).

⁴⁵ Bibl. : Diwan and Squire 1992.

a Commission on Sustainable Development (MCSA), within the framework of the UNEP Mediterranean Action Plan⁴⁶. It does not seem a response adequate to the problem.

The root causes of the social problems in the region are :

- explosive population increase in some parts of the Mediterranean coast,
- the increasing income gap analysed previously,
- the rise of violent minorities (which may be a result of the previous two).

All three merit honest and objective assessment, effective planning and courageous action, which is not so evident at present. Sustainable development may prove a useful approach in this process; it is clear, however, that it cannot be achieved independently of these root causes.

population trends

In the first half of the 20th century, the northern shore of the Mediterranean had the largest population; in 1950, 2/3 of the population of the entire Basin lived there, according to the Blue Plan⁴⁷. In the second half of the century, two trends have become visible and will perhaps determine the future of the basin :

- The first is an increase in the permanent population of the southern and eastern shores. At the present rates, the population of this part of the Mediterranean will have increased by 500%, until it reaches 2/3 of the total population of the Basin. In the coastal strip, 125 million people live already (33% of the population). As a result of the population growth predicted, the 14,000 km² which were urbanised in 1985 will increase to 30,000 km² by the year 2025. The result will be intensified pressures upon the natural environment of the Mediterranean coast, especially in those parts which are accretionary (representing 46% of the total Mediterranean coastal area) and not rocky (which corresponds to the remaining 54%).
- The second trend is a predicted increase in the transient population of the Mediterranean through tourism. Visitors, mainly to beach resorts, are estimated to increase from 116 million in 1985 (which is already a very large number) to 500 million by the year 2025. The impact of this enormous increase, especially on land, access to sea and water resources, will be extremely high.

It should be noted that to a large extent both these population increases - permanent and transient - will occur in the same parts of the Basin, usually poorer countries, that will not have adequate means and structures to face the environmental and social problems created. Thus a combination of dramatic environmental degradation and of social unrest may be predicted, unless there are drastic measures taken, which will require international mobilisation⁴⁸.

⁴⁶ Bibl. : UNEP - MAP 1996.

⁴⁷ Within the framework of UNEP's Mediterranean Action Plan (MAP), the Blue Plan was launched in 1979. Guided by the Regional Activity centre in Sophia Antipolis (France), its aim has been to protect the coastal environment by careful long-term planning of their socio-economic development.

⁴⁸ This has been the rationale of the MEDA initiative of the European Union, which unfortunately is developing far too slowly.

social changes

The diverse nature of the people living around the Mediterranean Basin, in spite of their long history of exchanges, interdependence and population movements, defies a systematic social analysis, which in any case would be beyond the scope of the present study. This rich diversity is intensified by differences in culture, religion, social and economic systems, political realities, outside influences, and many other factors.

A possible grouping of the countries bordering the Mediterranean Basin would include :

- the economically developed countries of the region (the five EU-member states, as well as Cyprus, Israel and Malta);
- the countries in transition (Slovenia, Croatia, Bosnia and Herzegovina, Yugoslavia, the FYROM, Albania);
- the Maghreb and Mashreq countries, including Turkey, with strong links through their Islamic faith.

But still within these groupings there are profound social differences. For example, there is little common ground between Christian Catholic Slovenia and Croatia, oriented towards Western Central Europe, and Moslem-dominated Bosnia Herzegovina and Albania.

Still, there are certain key social changes common in almost all Mediterranean countries (with different rates and intensity) that can be identified, which are significant from the view point of sustainability.

Family values : The extended family, with strong links among its members, has been a unifying element of Mediterranean culture since early Antiquity. It has been a strong factor in maintaining social cohesion, and in assuring a long-term management of resources. Now it is being weakened by increased population mobility, and by the acceptance of new life models, introduced by the media and especially by tourism. The social impact of tourism on the host countries has not been studied sufficiently, but it is certainly dramatic. Especially, when it is concentrated upon small island societies, where it is undermining the very existence of the family system, and may result in a population decrease⁴⁹.

Population age : The ageing of the population in some of the countries of the northern Mediterranean can be easily adjusted by the influx of immigrants. On the southern and eastern shores, the increase of the population results in a continuous lowering of the average age. This creates a much higher demand for employment, which cannot be easily satisfied, and the creation of a volatile proletariat of unemployed young, which flock to the cities, are indifferent to authority, and are susceptible to political and social unrest. In this context, sustainability cannot really be attained.

Social cohesion : Unemployment, poverty and the weakening of the family are root causes for the loss of social cohesion in a considerable number of Mediterranean countries. There is also a certain lack of trust in the political systems under which the countries operate, resulting from political developments (such as the system of patronage, inefficiency and corruption in some democratic countries, the existence of various forms of dictatorship, the downfall of the communist system). Under these conditions of distrust

⁴⁹ A situation developing in many of the islands in the Aegean Sea.

and social fragmentation, promoting the acceptance of a wide social concept, such as sustainability, is a difficult task.

Religion : In the past, religion has played a key role in maintaining social cohesion. The wise use of resources, a certain degree of asceticism, and the divine mandate for a careful wardening of the material world by mankind, is within the teachings of most religions established in the Mediterranean⁵⁰. Unfortunately, in the northern Mediterranean countries the impact of religion, and, therefore, its ability to influence people, has been gradually eroding. As for the South and East, religion has become intricately involved in politics, which undermine its constructive social role.

Cultural homogenisation : Culture has also been a factor of social cohesion. The gradual introduction in the Mediterranean of international cultural models has had a negative impact upon local culture, although the region retains to a large extent its own traditions.

Tourism has played an ambivalent role in this respect. On the one hand, it has been instrumental in introducing - even imposing - foreign cultural patterns (in architecture, music, food, social activities etc.). On the other, there has been a latent but growing demand for authenticity, local customs and habits, the experience of other cultures.

The issue of culture is important for sustainability, as it was associated usually with traditional and wise use of resources⁵¹. Its loss, therefore, would make the implementation of sustainability even more difficult.

Changes in employment : Political changes and the globalisation of the economy have had a profound impact on the employment patterns around the Basin. Traditionally, people in the rural areas were involved with primary sector activities. Those in the cities developed skills as artisans and merchants. Along the shores of the Mediterranean great urban centres, with wide political power and wealth, grew and declined. All of them were trading and marine centres, but were also highly productive in the secondary sector.

The major change that has occurred through the globalisation of economic processes is the decline in agricultural activities and fishing, due to international competition and the decrease of resources, as well as in manufacturing, which has shifted to other parts of the globe⁵². A corresponding gradual rise in service sector activities has required a radical re-orientation of the work force from traditional to contemporary activities, which will take considerable time and consistent effort. In the meanwhile, it is important to understand the growth of this body of unemployed around the Mediterranean, which are both a valuable human potential and a probable social and environmental menace.

social conflicts and problems

⁵⁰ In this context, see the very valuable work done in the '90s by WWF International, in bringing together the major faiths on environmental issues. See also IUCN, 1994, *Environmental protection in Islam*, Gland, Switzerland and Cambridge, U.K.

⁵¹ As an example, traditional architecture in the Mediterranean is well adapted to climatic conditions, and very economical in energy demands. Contemporary tourist facilities, on the other hand, as well as public and commercial buildings, tend to follow international fashions, and require heavy energy consumption for heating, cooling and lighting.

⁵² Characteristic is the dramatic decline of Mediterranean shipyards.

We have analysed briefly the root causes of social problems in the coastal zones, and more specifically in the Mediterranean. Such conflicts, however, are intensified by local reasons, and are due to the excessive concentration of people and activities in the usually narrow coastal zones, beyond often their bearing capacity.

Resulting from the over-exploitation of land and resources, which is compounded by the lack of an integrated approach to coastal zone management, activities have grown in often uncontrolled ways, undermining each other in the way. They result in social conflicts centring on the use of territorial resources. These are inscribed within the political framework of each country, and its particular system of power sharing. Thus in countries with a longer and more structured tradition of public administration (such as France and Spain), conflicting territorial claims appear on a larger scale and in a more organised form, and are handled through existing processes of planning and mediation. In other countries, with weaker public structures (such as Greece, parts of Italy, and Turkey), the claims for coastal space are fragmented and widely spread to large parts of the population; they express themselves in anarchic ways, and are not easily controlled or resolved by public bodies, which seem unable - or unwilling - to intervene.

Initially, the conflicts were mainly between traditional activities (such as extensive agriculture, shore fisheries, animal husbandry, salines) and “modern” ones (such as manufacturing, mass tourism, shipyards, large-scale infrastructure). The power of capital, and contemporary economic realities have ensured the victory of the latter, with large shifts in employment patterns, although skirmishes still exist in many areas.

At the end of the millennium, new social conflicts now appear among the “modern” activities themselves. In the Mediterranean, this is common mainly between tourism and resort housing, which require a good quality of environment, and other productive activities, such as manufacturing, energy production and distribution installations and land, air and marine transport, which produce heavy environmental impacts. Most of the Mediterranean airports, for example, which serve tourism to a larger extent, are located in the coastal zones, often degrading local natural assets. More subtle conflicts occur with the modern versions of traditional activities, such as intensive agriculture and animal husbandry and aquaculture facilities, which are heavy polluters, while requiring a reasonably clean environment for their operation. Unfortunately, some timid efforts to promote measures which would internalise the additional costs for maintaining an adequate environmental quality⁵³ have not been successful.

Local populations are a major participant in these land use conflicts, but, in spite of certain cases that they have won⁵⁴, their impact is limited. Their power in democratic societies should be considerable in principle; however, they cannot be effective, as they usually lack resources, knowledge, co-ordination, expert guidance and cohesion, and they cannot sustain long-term efforts, especially when they involve costly legal battles.

⁵³ At the international level (through World Bank and OECD) and the European Union level.

⁵⁴ For example the abandonment of the construction of a petrochemical plant and of ship dismantling yard in the Ramsar wetlands of Messolonghi and Nestos respectively, in western and north-eastern Greece, in the early '80s, after strong and often violent popular campaigns.

On an other level, social conflicts are created between those that represent the common good (usually central and local government, and environmental organisations) and individuals that attempt, often successfully, to exploit it. Illegal construction of resort houses and tourist facilities⁵⁵, in the coastal strips - especially on sandy beaches -, leading to their urbanisation and gradual degradation, is a common phenomenon in countries with weak administrative systems, such as Greece and Turkey. This phenomenon appears even within highly protected natural areas, causing the destruction of wetlands and sand dune ecosystems of international importance⁵⁶. It is not unknown, however, in countries with a long administrative tradition⁵⁷. In this type of conflict, the victory goes usually to the illegal local interests, as the public side is susceptible to local pressure, under the fear of "political cost".

Finally, the existence of under-privileged segments of the population (the urban poor, recent immigrants, refugees, unemployed youth, vagrants and others), which often live on levels beyond poverty and in conditions of utter squalor, are also at the base of social conflicts with other, well-established and secure groups⁵⁸. Poverty, exclusion and crime are interrelated phenomena, which create a vicious social circle, difficult to break.

In the chapters to come, an attempt is made to demonstrate that in all these conflicts, sustainability provides a promising approach framework, which can integrate positive social forces and efforts, and lead to the long-term resolution of problems. In no way is this an easy process; but it does offer the expectation of a radical but gradual improvement.

the quality of life

A key social concept in relation to sustainability is that of the quality of life. In traditional societies, and especially in the coastal zones, security from invasions (which were very common in the Mediterranean) was a primary constituent, along with gaining food subsistence and a shelter for the (usually extended) family. To these were added other aspects, such as protection from illness, access to social services, ensuring social contact and exchange, as well as a degree of aesthetic enjoyment⁵⁹.

In developed societies, starting with the 19th century, this concept changed dramatically : life quality became a quantitative issue, related to the family income and the ownership and consumption of material goods. Affluence, previously limited to the few, became the new social goal, although the need for security remained a strong element, especially af-

⁵⁵ Either building without a legal permit on property individually owned, or building on public land.

⁵⁶ For example, the Louros, Dioni and Clissova illegal settlements in the Ramsar wetlands of Messolonghi, in western Greece, and the large scale illegal resort housing along the Ramsar sites from Nestos delta to Mitricou lake, in north-eastern Greece..

⁵⁷ With some characteristic exceptions, as in the case of the illegal Beauduc *cabanon* and fish restaurant settlement on the protected Camargue sandy coast, close to the Salins de Giraud, whose intended demolition by the prefecture has created a strong local reaction, on the basis of rather flimsy cultural arguments.

⁵⁸ Typical is the reaction immigrants in Spain (Moroccans), in France (Algerians), in Italy and Greece (Albanians).

⁵⁹ The beauty of traditional settlements all around the Mediterranean coast and the islands is a proof.

ter the tragic events of most of the 20th century. It is of interest to note that affluence has been considered as the principal means for achieving security, as demonstrated by the interesting case of contemporary Cyprus (p. 28).

This attitude to life quality has been at the root of overexploitation of resources (often including indigenous populations), and a general level of environmental degradation. It has been, therefore, profoundly unsustainable and unjust, as minorities have attempted to amass and to consume riches and resources, while large segments of the population have remained unable to reach even acceptable life conditions, as far as shelter, food, health, education, security.

It is encouraging, however, that it is more and more realised that the present situation is not viable. The depletion of resources and the environmental degradation on the one hand, and the rising insecurity and criminality in many areas on the other, are menacing the life quality of the privileged, bringing the message of the radical change needed. This is strengthened by a growing realisation that the present model of quantitative life quality does not bring automatically happiness. On the contrary, it may be one of the causes of dramatic social dysfunctions, such as the growing use of drugs and the crime associated with it.

In this context, sustainability is of capital importance, as it depends on a gradual change of life patterns, starting with the moderation of consumption and a wiser and more equitable use of resources. The future, therefore, will consist of developing a new concept of the quality of life for the 21st century, based upon the principles of sustainability. This will require bringing together the isolated efforts of marginal groups and individuals in the developed countries of the Mediterranean, with the still existing wisdom of some of the traditional societies in the South and East of the region.

Such an integration, although difficult and time-consuming, may offer a good perspective for a social balance, and may lead the developing people of the region to avoid going through the destructive cycle of the countries in the North, by passing directly from poverty to sustainability.

the role of culture

Moving from isolated cases of sustainable life patterns of some marginal groups to the establishment of a wide social movement may sound like a utopian objective. Still it is necessary if sustainability is to be implemented. In this, social culture can play a positive and very significant role.

Traditional social culture is based on practices which usually tended to be sustainable⁶⁰. Many popular customs and festivities, religious and secular, celebrate the seasons, the use of the land, the blessing of traditional activities (from the yearly movement of sheep flocks in Spain to the departure of sponge divers in the Dodecanese islands). In spite of the population movements to the large cities, and the homogenisation of modern culture,

⁶⁰ Not always : the destruction of forests due to overexploitation in many parts of the Mediterranean has led to the decrease of wooden ship construction, and to the decline of powerful marine centres.

such events and other cultural remnants⁶¹ retain the interest and participation of people. They allow local people to keep links to their past in time and space, which is a key element in shaping a sense of social and regional identity; while they allow visitors to come into contact with a rich mosaic of experience, which is indigenous to specific places.

A systematic effort to identify all such elements of the cultural heritage, and to relate them to specific aspects of sustainability, therefore, might be a good method to make this abstract concept more easily understood and accepted. Especially, if it is related to the new trend for regionalisation and the weakening of the central governments, which has started appearing in the European Union, in parallel to the efforts for integration and cohesion, leading to a rebirth and a crystallisation of local cultures.

⁶¹ An interesting example is the description of nature in the popular “demotic” songs of Greece.

Quality of life : Paradoxes in Cyprus

The German press has described as an “economic miracle” the explosive progress and the miraculous recovery of the Cyprus economy after the tremendous setback, caused by the Turkish invasion of the island in 1974, and the appropriation by the Turks of 37% of its total surface⁶². Before this outstanding development, which introduced Cyprus into another economic reality, the region had already its own social organisation and its particular system of local economy.

Until 1960, Cyprus economy and society were overwhelmingly rural. Agriculture and minerals⁶³ were the principal economic resources of the island. On the eve of independence, agriculture represented 70% of the GDP, with an augmentation tendency⁶⁴. The annual per capital income until the '50s was very low and unequally distributed, with the rural areas representing the lowest income levels, very close to poverty. The British Colonial Government made no direct effort to develop the country, and the local resistance towards this policy was weak. Besides, the dependence of the Cyprus economy exclusively on the British market kept the industrial development on the island very limited. The only factors, therefore, that sustained the economy of the island through the years until 1960, was the variety of exports (agricultural products, minerals, products of small industry and manufacture, etc.) and the reduced import needs⁶⁵.

The size and the natural geography of Cyprus (with the two large mountain ranges of Troodos and Pentadactylos at the centre and to the North of the island respectively, and the two fertile plains in between), has encouraged the concentration of the populations and of the economic life in the interior of the island. This has been reinforced at times by the danger of invasions, arriving at the sensitive coastal areas, (It is interesting to note that Cyprus had never had very limited maritime activities before Independence and its first merchant fleet was acquired only after 1960). Besides, the British colonial regime, with its attitude of discouraging any state development projects for the island, favoured small-scale private initiative in all sectors.

Thus, the population developed a high degree of personal independence and financial autonomy, which has almost become a national characteristic. In spite of the fact that - over the centuries - Cyprus has been often colonised⁶⁶, surprisingly, its people always managed to maintain their own autonomous organisations. As a result, people learned to practice prudence, thrift and maximum self-sufficiency within the family, the basic unit of the economic management : commercial enterprises and small industries were family-owned and family-run; education and economic security for its members were also a family preoccupation, often resolved by expensive private studies (when allowed by the financial situation of the family), good careers and/or good marriages (considered also to be a form of social success). Even the construction of one's home was personal business, and it was provided by the father of the bride, as a dowry, to the newly married couple.

In fact, this small society - focused on one's own family and immediate communal life - seemed to have found its own interior balance and rhythm, facing successfully all the problems of a social

⁶² The entire surface of the island measures 9251 km²; the occupied area is on its north-eastern part.

⁶³ Agriculture accounted for 50% of the economic activities of the island, while minerals 30%.

⁶⁴ Statistical data show that agriculture accounted for 40% and 50% of the GDP, respectively, for the economic years 1930 and 1946.

⁶⁵ Except for sugar, flour and edible oils, nothing else needed to be imported.

⁶⁶ Assyrians, Egyptians, Persians, the Ptolemies, Romans, Arabs, Lusignans, Venitians and the Ottoman Turks have all left their traces on the island, contributing to its rich cultural heritage. In 1878 the Ottomans ceded Cyprus to Britain, and in 1914 it became a British Colony and remained so until 1960.

structure on a small scale; but it also encouraged inevitably the creation of an introverted, self-sufficient and somewhat provincial mentality⁶⁷, which is still nowadays quite characteristic of the local population, and the reason of many a difficulty for the present Cyprus profile.

From 1960 to 1973, Cyprus managed, by planned development alone, to change its social and economic identity, passing from a mainly agricultural economy status to a high standard of living, and reaching an economic growth rate higher than 7%. The development planning was divided in three phases. The first (during the period 1961-1976), foresaw agricultural modernisation, creation of conditions for private development of industry (infrastructure, training, credits, etc.), promotion of tourism and the modernisation of infrastructure. The second (1967-1971) concentrated on improving the co-operation between the public and private sectors. While the third (planned for the 1972-1976 period) focused on increasing the profitability of investments, encouraging the influx of foreign capital and the launching of new technologies. This last phase was abruptly interrupted (if not cancelled) by the explosive political developments of 1974, and all their consequences.

Thus, within thirteen years (1960-1973), the whole economic basis changed completely: productivity increased by 5,6%, full employment was achieved, earnings rose faster than productivity, the national income per capita increased by 2.1%. Consequently, there were also significant changes in the economic structure of the country : agricultural population decreased from 45% to 37%, manufacturing increased from 14% to 15%, the construction industry increased from 8.5% to 11.3%, and the national services income (including tourism) increased from 13.5% to 16.5 %.

With the Turkish occupation of the north-eastern part of the island, 70% of the productive resources became inaccessible, the economic activity decreased by 33%, 40% of the Greek Cypriot population was consequently transferred to the southern part of the island, all Turkish Cypriots being moved to the North, most of the capital investment was lost, as well as much of the infrastructure (including the main modern harbour of Famagusta and the airport of Nicosia). The new situation contained great social and economic dangers : there were 200,000 refugees which needed urgently to be sheltered, nourished and employed. As a result, an enormous construction industry development was encouraged. The increase, however, of employable population did not correspond any more to the existing demand, causing thus a considerable unemployment crisis. In 1981, a new co-ordinated collective action was established, in order to help Cyprus overcome the destabilising effects of the political events of 1974 and attain again its previous high levels of economic performance. The new action was based on the systematic promotion of tourism (which was to become the main economic activity, accounting today for more than 50% of the GDP), and other services (transport, etc.), as well as commerce and industry. The local market opened first towards the Arab countries and then towards Europe. Soon rapid financial development and prosperity were on their way back, since the economic growth rate had reached U.S. levels (albeit with a more uneven distribution).

But such a fast development could not be achieved without counter-effects; although the Cypriot internal organisation and cohesion, and the strength of survival (often demonstrated by the inhabitants of Cyprus in the past) had actually produced an economic "miracle", the negative consequences on the environment and on the quality of life were significant.

The new economic prominence introduced the country into the open market and the commercial competition, obliging it thus to follow the path of the developed countries⁶⁸. But, although economic

⁶⁷ In Christodoulou 1992, there is a mention of the impression that the local press gives of Cyprus, as "the centre of, if not actually, the universe itself", (p.283).

prosperity and modern life patterns have contributed to the relative relaxation of the traditional family-centred social tissue, old traits of the local mentality, products of an itinerary through history under very specific life conditions, cannot be modified from one day to the other. The self-sufficiency and individualism of the traditional Cypriot life, although influenced to some extent by the British public organisational practices⁶⁹, have resulted in a general reservation towards the new internationally-oriented system. Thus, Cypriot businessmen have often remained attached to small-size enterprises and have avoided involvement with long-term projects. At the same time, Cyprus appears with an advanced industry, but without sufficient management training. The Cypriot economy has thus thrived, but has not succeeded in acquiring the appropriate human potential infrastructure.

Tourism has effectively become the main income source for the island, as the number of tourists increases more and more every year. But the lack of experience in managing tourism, and the wish for more foreign exchange, have resulted in a lack of differentiation between quantity and quality; so the numbers of visitors have effectively increased, but their income level is dropping. On the other hand, mass tourism development has produced a disproportionate growth of offer against demand, leading to an over-consumption of the territory to the benefit of construction and the excessive use of essential natural resources, especially of water. In addition, the lack of territory planning has resulted in a spontaneous urban development, which, combined with insufficient public transport means and the ubiquitous use of the private car, has led to a further degradation of the environment. Thus tourism seems to have appropriated the major littoral part of the island, resulting in significant income increase, but also causing social and environmental problems.

The sector of agriculture has also suffered from the fast development policy. A lot of fertile land has been lost because of the intensive construction activities, due as much to the need of urgent housing of the refugees in the '70s, as to the vast tourist installations in the '80s, which are continuing today. This has caused a remarkable decrease of agricultural productivity, which has influenced the balance of the national economy. In order to correct this trend, agriculture needs to specialise, become more professional and regain productivity from the improvement of its technology, which is still too low for the international standards. Of course, methods for sustainable agricultural practices would be very appropriate.

As already indicated, education possibilities are also very limited in Cyprus : until very recently there was still no university on the island (the University of Cyprus was founded only in 1994), and most of the high-level educated people are graduates of famous educational Institutes from abroad. Moreover, as the country does not give them any special possibilities to develop (there are few suitable research centres, or other similar facilities) they have inevitably the tendency to leave the island. The most important cause for this educational scarcity has been up to now the traditional family-economy pattern : younger people often preferred to continue the already existing family business, instead of seeking higher education and other forms of employment.

It is to be expected, that the rapid development rate of the Cypriot economy has not left the environment untouched. One of the greatest problems today is water scarcity. The enormous increase of water consumption in the last years, due to the changes of the economic centre of gravity, constitutes the main reason. The particular Mediterranean climate of the island, with the scarcity and the irregularity of rainfalls, combined with the lack of substantial rivers on the island, have intensified the problem. Fortunately, the danger situation was detected in time and taken into serious official

⁶⁸ Cyprus even today has a certain ambivalence as to its affinity with the developing countries of the Third World, and its economic and political links with the developed countries, and especially with the European Union.

⁶⁹ Cyprus still follows the British administration and legal system, using widely the English language in these sectors.

consideration. Large water development projects have started in recent years (desalination projects were undertaken in 1996), with the aim of providing water for domestic supply and irrigation. The present consumption needs seemed to be covered, but for the future the use of new resources (evaporation water, etc.) will be needed. Unfortunately, the drought that has befallen on Cyprus during the last few years has upset these plans, and has made necessary the wholesale rationing of water.

Forests cover today 19% of the total island surface⁷⁰, and are exploited mainly for wood production, while their recreation and air purification values are not ignored⁷¹. The two great dangers for forests today are fires and pollution. A deterioration of forest land would strongly influence not only the traditional timber production industry and livestock grazing, but also the growing use of forests as assets for the tourism and recreation industry. The importance of their protection was taken into serious account by the EC, which has proposed to fund a serious project for fire protection, pollution control and forest management.

A good effort has been also made to introduce sustainable alternatives of tourism, on the Akamas peninsula in western Cyprus. The project has attempted to develop rural tourism in a number of villages in this ecologically important region, financing (in the form of grants and low-interest loans) the restoration of traditional houses, to be rented to visitors mainly through overseas tour operators. But, up to now, there has been strong opposition to the project from powerful local land-owners (who prefer conventional mass tourism development), as well as lack of guaranteed source of long-term funding, since the project is not yet self-supporting.

It is evident from the above that the successful development of the Cyprus economy has resulted in increased incomes, but not necessarily in the upgrading of the quality of life. Many factors still need to be given attention, especially promoting more sustainable forms of development and providing much more opportunities for higher education, so that a new internal balance can be re-established. The contemporary Cyprus experience has always shown positive results and there is no reason to believe that it will not finally find the right approach in the near future, especially if the problems between the Greek and Turkish communities are resolved..

Conclusion: Traditional life in Cyprus has been pleasant, with few problems. In the last three decades, the quality of life on the island has changed radically and in contrasting ways, due to rapid development efforts, the explosive political developments since 1974, and the recent economic affluence of the Greek Cypriot part of the island. Economic growth may well be desired and attained, but it does not necessarily guarantee an improvement of the quality of life; on the contrary, the environmental degradation it may cause - if left uncontrolled - can result in a dramatic lowering of this quality, which will require long-term efforts to redress.

Anonymous, 1992, "*Water development in Cyprus*", Water Development Department of the Ministry of Agriculture, Natural Resources and Environment of Cyprus, Nicosia.

Christodoulou D., 1992, "*Inside the Cyprus Miracle : the Labours of an Embattled Mini-Economy*", University of Minnesota Minneapolis, Mediterranean and European Monographs (II), Minneapolis, USA.

Marcopoulos A., 1997, "Cyprus to host major environment conference", in *The Cyprus Weekly*, 14-20 February, Strasbourg, France.

⁷⁰ 47% of the island is arable land and 34% is occupied by uncultivated areas.

⁷¹ The Cyprus Forest Service is reputed as an efficient and well-organised public administration body.

Salathé T., 1996, "Natural Ecosystems Management" in "*Workshop on Policies for Sustainable Development of Mediterranean Coastal Areas*", Santorini Island 26-27 April, UNEP, 1996, Athens.

Local culture and tourism : Social trends in Morocco and Tunisia

In the developing Maghreb, the marked impact of the tourist industry, both in the mind of the decision-makers, and in the feeling of the large majority of people, has an economic preponderance over all social and cultural aspects. This economic importance is confirmed by the following figures : In Tunisia, the tourism industry income is taking the second place in the national GDP, just below the textile industry. The net benefit of the sector is around \$900 million / year⁷². In Morocco the income generated by the tourism industry is less important than in Tunisia, but still significant in the national economy, as it reaches \$25 million / year. And in terms of employment, activities associated to tourism generate more than 500,000 jobs⁷³.

The national economies in these two Maghreb countries are diversified enough to be able to respond to almost all the tourism sector requirements : national capital mobilisation, implementation of the touristic structures and equipment and international transport. After three decades of efforts, the tourism industry is now mainly integrated to the national economy. Tourism has stimulated almost all the economic branches : finance, construction works, housing, transportation, agriculture, fishing, transformation industries, trading and services. In return, the economic dynamics created were possible only because of the capacity of all these related sectors to address (without too much tension) the additive requirements of the tourism industry.

As a result of this economic preponderance, the lack of social and anthropologic studies on the impact of tourism is easy to understand. Examining the three last decades, the '60s saw the creation of a new economic sector, full of promises and with all efforts oriented to it⁷⁴. The decision-makers during this period put the emphasis on the economic aspects, related to the growth of foreign currency income, on the increase of job creation opportunities, the establishment of the structures and management of the tourism units, which depended mainly on the public sector. The social, cultural and environmental aspects were not perceived as pertinent, and were not at all considered.

During the '70s, social and cultural factors started playing an important role within the context of global crisis, affecting all economic sectors. Several studies were carried out concerning social and cultural aspects related to the tourism industry, which identified the short- and long-term influences of tourism on the social values, traditions and the perception of social changes. But the nature of the development model prevailing during this period had given priority to economic growth over all other considerations, with most of the social research oriented to the establishment of the new free states, after the end of colonisation.

development and new trends in the tourism sector

The global crisis which affected the tourism sector in the beginning of the '80s and the new trends in this sector (especially the realisation that it was no more sufficient to give the tourist only sea and sun) made the decision-makers request international regulatory actions to prevent such crises⁷⁵ and to encourage internal and the Maghreb tourism as an alternative market and as a response to the increasing influence of multinational firms in this critical sector.

Environmental concerns had appeared quite early with the first water treatment plants that was projected in conjunction with large mass tourism facilities. They were significantly increased, by the

⁷² Ministère de l'Environnement et de l'Aménagement du Territoire, 1996, Tunis.

⁷³ Ministère du Tourisme, 1995, Étude de la stratégie d'aménagement touristique, Rabat.

⁷⁴ In Tunisia for instance, tourist capacity grew from 4,000 beds in 1961 to 24,139 beds in 1968.

⁷⁵ During the Gulf War, tourist activities in the two countries decreased by about 80% from the usual annual level.

growing realisation by both visitors and the local population of water pollution problems, due also to demographic pressures.

As a result of intense tourism development, the situation in certain coastal areas became dramatic, in the absence of appropriate planning and technical, social or land use regulations. The relation between international tourism areas (usually managed by the National Tourism Offices and some other semi-private organisations) and those under the public control of the Ministries of Equipment and Land Planning or the local control of the municipalities has been the source of considerable urban conflicts. The spread of existing and new settlements has been too close to the tourist installation development. Housing for the tourist sector personnel was completely neglected, and as a result sub-standard illegal settlements appeared at the periphery of tourist facilities. The national and local demand for resort housing (owned or rented) grew explosively, resulting in the serious degradation of landscapes.

Tourism development remains an important challenge, because today it is land that has become the main factor. Spaces devoted to tourism activities are closely linked to the coastline. To satisfy the massive demands of this sector, there is a growing need of large sea-front areas⁷⁶, as well as increased freshwater capacity.

Mass tourism has become a subject of controversy both in Tunisia and Morocco with three typical responses : indifference, consideration as a threat, or as a “necessary illness”⁷⁷ Typical reactions are as follows :

- “A danger for young people in contact with populations without our ethics”.
- “Tourism is the human and environmental price we are paying for our economic development”.
- “Unbalanced encounter between the North and the South of the Mediterranean”.
- “The invasion of tourists is like colonisation”.

The indifferent spatial zoning of the tourist areas has caused additional aggravation and has magnified the cultural gap between visitors and the local populations; it is difficult to distinguish where is the ghetto, in the closed holiday clubs or in the traditional urban neighbourhoods.

The prevalent conception of “captive” tourism, a kind of hotel-ghetto, responds to the needs of a mass clientele, with the desire of sports practice and *far niente*, and with little interest in visiting the country and the people. This kind of tourism is adapted to large groups of visitors included in all-expenses paid package tours, without financial means for extra activities. This type of mass tourism gives projects a reductive image, and cannot satisfy a growing part of the European demand; it is certainly not adapted to the tastes of Maghreb tourism.

In fact, people are requesting more and more a variety of leisure activities and extra-hotel spaces. These trends have been recognised by the promoters’ investments in recreation centres and cultural events. In Tunisia and Morocco, the new trends focus now on Saharan tourism, sport-oriented tourism (horse-riding, rallies, golf, sailing, hunting), ecological and cultural tourism (national parks, architectural and urban heritage, museums and festivals) and business tourism (congresses, trade festivals etc).

social and cultural influences on the Moroccan and Tunisian societies.

Some present tourism as an opening to the world and a factor of understanding and co-operation among people, contributing to peace. To what extent does the tourist industry answer this expectation? During the Gulf War, Tunisia and Morocco, two friendly countries, were perceived by a large part of the European public more as a potential enemy, than a good memory of pleasant holidays.

⁷⁶ In a context of small land tenure, a coastal tourist station usually requires plots of 200 or 300 ha.

⁷⁷ “*Le mal nécessaire*”.

The social balance is precarious. For many Moroccans and Tunisians, tourism is the mirror of “what lies over the sea horizon”; seen with a mixture of love and hate.

The influences on the patterns of life are undoubtedly there. The tourism industry requests, in terms of services and goods, have encouraged the local people to increase their use of such new services (telephone, fax, television and video, road and transportation infrastructures, food diversity and packaging, various forms of entertainment). Some privileged social groups are taking great advantage of this situation by adopting a European way of life, the others suffer from the incredible increase of market food prices during the high season.

Tourism demand, however, has had an incidental positive aspect in making the regions closer to each other (mainly in Tunisia, where infrastructures have improved significantly), and has resulted in a better distribution of the goods and services in the two countries.

influences on the urban and cultural heritage

In Tunisia, and especially in Morocco, the architectural heritage in the coastal areas is one of the main tourism assets. Decision-makers in the two countries had a good understanding of the necessity to preserve this heritage, mainly from the predatory aspect of tourism development. The proximity, however, of tourism to such historical urban tissues is threatening their residential character⁷⁸.

To face the problems, the national organisations responsible for culture structures are not adequate to face the actual situation. The cultural programmes proposed to the tourists do not take the opportunity to promote the national culture and traditions, but are simply designed as stereotyped events reflecting the European image of leisure and recreation.

As a positive aspect, however, one can notice the increasing national and international popularity of some important and authentic cultural festivals, such as Carthage, Asila and Kelibia for the Cinema, Fez and Hammamet for traditional music.

influences on the change of mentality

The change of mentality is related mainly to the nature of mass tourism and its new aspects : each year, almost one person in three is a tourist visitor. What is the relationship between this transient population and the Moroccan or Tunisian society ?

Most of the tourists are living side to side with the local people, without any communication or real cultural or human exchange. The tourist comes mainly to “profit” from the nature and the beauties of the country but does not seem to wish too much contact with the indigenous people. They, on their turn, except for the commercial relationship, have a preconceived idea of the European model, based on the image mirrored in TV programmes. This same model is “satanised” by small violent minorities, which reject it on political, cultural and religious grounds.

The dangers, however, of such massive Western information flow through the satellite channels are offset perhaps by a positive influence in the development among the local people of a spirit of tolerance on many issues, including forbidden ones such as sexuality and politics.

tourism influence on youth

⁷⁸ In Hammamet, one of the most intensive tourist areas on the Tunisian coast, hundreds of old houses of the Medina are transformed into handicraft tourist shops and other similar facilities, because of the terrible increase in land and building prices. It will be outside the financial capabilities of the local municipalities to envisage renovation programmes in such a context.

As this part of the population is the most exposed to tourist activities, through related employment and other contacts, contradictions and fears are expressed through this supposed relationship between local youth and tourism, which is expressed in different ways :

- A fashion model phenomenon : Young people are directly inspired by the style of appearance and behaviour of the tourist population.
- Pleasures and sexual liberation : The world of the satellite antenna is directly available on the sandy beaches.. With the proximity of the Western world, local youth feel more easily the necessity to take what they consider the best of available pleasures - goods consumption, clothing, restaurant dining and entertainment, and a progressive tolerance to the still suppressed needs of sexual liberation⁷⁹.
- A gradual rejection of traditional values : In spite of the distance between the local and the tourist population (religion, behaviour, income level), they are living close together, and the former are impressed and want to look like the latter, to act like them, even if this means abandoning traditional values and models. In indirect ways, this contributes to an intensification of the social conflicts related to the generation gap.

The cost of such Western behaviour is of course out of the reach of the majority of local young people, especially of those originating from the rural regions and the poor districts of the main cities. The result is either a negative reaction to tourists leading to harassment, or the slide into delinquency.

influence on the social and cultural values.

In Tunisia and Morocco, relationship with the other members of the traditional community is based on the concept of "Karam", which means hospitality. The visitor is the "guest of God"⁸⁰. Everything is due to him, respect, comfort and help. The contemporary tourist, however, is sent by his travel company, in the scope of a service agreement. The traditional sense of devotion for the guest is thus shifting to a commercial and economic one. For the first time, local people in these two countries are dealing with a massive merchandising of their basic concept of life : hospitality. Tourism activity is not solely responsible for this change, but it does play a catalytic role in the acceleration of the new social developments. Typical is the field of employment in sectors related to tourism, where a lot of traditional activities, which were considered in the past as a social exchange of services, have now to be paid, and have become thoroughly commercialised.

Conclusion: Tourism is having a marked impact on the Moslem societies of Morocco and Tunisia. Is it all negative, or does it provide incentives for the retention of the rich culture and environment of these two countries, while providing an open window to the world and an opportunity for social and cultural exchange? It is not easy to give a positive answer to this question. The reason is the double misconception and misunderstanding that still exist; most of the images and ideas of foreign visitors concerning Tunisia and Morocco are the products of the pre-packaged, simplistic and stereotyped publicity of international tour operators; and in parallel, the main images the local communities have of their visiting tourists and of their Western culture are the equally stereotyped and tricky messages and pictures projected by the satellite channels. Until both sides have a clear view of reality, social contact will be limited or even negative.

⁷⁹ The beaches in Tunis, Casablanca, Sousse, Hammamet, Agadir or Rabat are good examples of the quick transfer of all the up-to-date feminine swimming fashions. In the same moment, sometimes at few kms from away, village women are swimming fully clothed as in the past.

⁸⁰ Popular saying in the Maghreb, from the Coranic Tradition.

Lacoste, C. and Y. (eds.), 1995, *Maghreb : Peuples et civilisations*, Éditions La Découverte, Paris.
Zalm, F., 1990, *Le Maroc et son espace méditerranéen*, Confluences, Rabat.

4. Economic considerations

In the 20th century, economic growth has been considered a positive and powerful force in achieving better living conditions for people. Thus an increased per capita income has become associated with life style improvement, although the social distribution of wealth varies considerably from country to country, and has been far from ideal⁸¹.

It can be maintained, therefore, that the concept of sustainability has not been introduced just to reconcile the prerequisites and impacts of economic growth with environmental requirements; its aim is to channel growth through two social constraints, with a mainly ethical character :

- More equitable distribution of resource use among the people of the world.
- Care to ensure to the coming generations continued access to resources.

These two constraints seem to be acceptable politically by decision-makers and the public, but mainly on an ideological level; they have never been precisely defined and have not been truly expressed in operational terms. This is perhaps due to the difficulty of the task, but also to an unwillingness to face the grave social and economic consequences that their implementation would entail. The most critical one is the simple and logical requirement that some people (mostly in the developed countries) should change their patterns of life, consuming less and using resources in different ways, so that other people, in other places or times, can have a fair access to resources, and a reasonable quality of life. This would be a radical change to achieve at a wide enough scale. Moreover, it is those that produce wealth which would be required to simplify their life styles, a demand that is not in harmony with the prevailing tenets of the market-oriented economy.

Another economic argument against sustainability is often presented by developing countries, especially in the Mediterranean. It states that the richer countries of the North have already - during their past development process - destroyed their natural environment, and now it is the turn of the poorer ones of the South and East to exploit their resources to the maximum, in a similar way, even if this entails a degree of environmental damage; and they would not accept environmental arguments as constraints to development. There is, of course, a counter-argument : that rich countries can afford to degrade their resources, and then spend to rehabilitate them, correcting their past mistakes⁸², but poorer countries should manage their resources well, and should try to get the best long-term benefits from them.

coastal economic activities

Wise resource management is especially important in the coastal zones, for two main reasons :

⁸¹ For example, the eradication of poverty has not been possible even in the most developed countries of Europe.

⁸² France, through the *Conservatoire du littoral*, spends important sums in regaining public property of sensitive coastal areas, while in most of the countries of the South and East Mediterranean these are still public, but need sound management.

- The coastal environment has a particular fragility, and thus pressures upon it have often a serious and irreversible impact.
- Coastal environmental degradation may have an impact on marine areas, and may thus reach global importance. On the reverse, changes in the sea (such as sea level rise) will have an impact on the coastal zones.

Of the economic activities in the coastal zones, some are directly related to the exploitation of their specific resources (such as fisheries and tourism). Others are the general ones which are found almost anywhere in each country, which do not depend on coastal resources (such as various forms of manufacturing). Sustainable management of coastal resources would require a thorough analysis of all these activities and of their interrelations, and the preparation of operational frameworks for their future development. This would be a major task, that can be carried out only with the participation of economic planners, environmentalists, representatives of the productive sectors concerned, and finally the competent decision-makers.

At this stage, certain general guidelines for this process can be proposed, based on the specific characteristics of the coastal zones (limited resources, especially space and access to sea, environmental fragility, high population densities, land use conflicts). They may provide a platform for discussion and evaluation.

- Activities that depend on coastal resources should have a preference over those that do not. Fisheries, tourism, and especially yachting, marine transport, all depend on coastal resources. On the other hand, it is difficult to see why heavy industry or energy production facilities should be located in the coastal zones.
- Those activities that do not consume resources, but use them sustainably, should be promoted, while the others should be discouraged. Sand extraction from beaches, for example, would be highly undesirable, while tourism - properly managed - could use beach resources without degrading them.
- "Hard" installations and facilities, that are required for the use of coastal resources, should not be planned in ways that degrade these same resources. Hotels and other tourist buildings and infrastructure should not be constructed on beaches or other natural areas of high biodiversity and landscape value; they should be located inland, with good (mostly pedestrian) connections to them. Resort housing should not be allowed to urbanise the coasts, but should be kept at a reasonable distance from them, allowing access to the natural strips along the sea. Fish hatcheries and other intensive aquaculture facilities have no reason to be located on the sea front. Access roads should not be constructed upon the beaches they are intended to serve⁸³. Airports should not be built in valuable natural areas, just because they are flat and available⁸⁴.
- Conflicts among activities should be resolved in an equitable way, taking into account the social benefits involved. For example, heavy industrial and infrastructure facilities should not be allowed near particularly attractive parts of the coastal zone, which are

⁸³ Unfortunately a common practice in Greece, and a few other Mediterranean countries.

⁸⁴ Airports often destroy important coastal wetlands, with a resulting threat to planes from flying birds, as is often the case (Larnaca airport in Cyprus, Corfu and Cavala airports in Greece).

more suitable for tourism and resort housing. Coastal fisheries and aquaculture facilities should be protected from water pollution caused by agricultural runoff (from pesticides and fertilisers), especially in the case of closed marine bodies⁸⁵. Intensive aquaculture facilities should not be placed close to popular beaches.

- Activities that serve directly the populations in the coastal zones should certainly be encouraged. These include a wide range of services, as well as the treatment, packaging or manufacturing of sensitive products consumed locally.

employment in the coastal areas

In addition, activities that provide high levels of employment should be promoted as much as possible, while those that simply occupy coastal land while providing little employment should be discouraged.

In this context, the case of large-scale industrial, transport and storage facilities should be examined. The low cost of marine transport has been a major incentive for the establishment in the coastal zones of major industrial facilities (cement plants, petrochemicals, oil refineries, steel mills, automobile plants), as well as extensive storage areas, leading to the total degradation of the areas they occupy, as well as of their surroundings⁸⁶. The cost to society, however, of this degradation has never been calculated and has not been charged to the installations responsible. It should be done now, and this will certainly change radically the economics of the situation. In any case, a combination of marine transport and land transport by rail, the widespread use of containers, and pipelines for liquid products, can allow the liberation of the coastal zones from a number of heavily polluting installations, without undue economic consequences. It should not be forgotten that these facilities are heavily mechanised and automated and provide low levels of employment.

The case of shipyards, a traditional activity in the Mediterranean now in decline due to global competition, is a special case. Shipyards depend upon access to the sea, degrading the corresponding sea front and causing considerable air, marine, and land pollution. But they also provide medium to high levels of employment (per area occupied). Thus they should be maintained in the coastal zones of the Mediterranean, but under two constraints :

- They should be concentrated in the proximity of existing coastal facilities, such as large harbours and industrial zones, and should not be allowed to degrade still natural sea-frontage.
- They should be obliged to curb drastically the pollution caused directly or indirectly by their operation.

Naturally, traditional boat building activities should be encouraged financially, as they may provide high levels of skilled employment. In this context, the whole question of traditional productive activities, which are no more highly profitable, should be examined. These are

⁸⁵ In western Greece, the Amvrakikos gulf waters have become anoxic below the depth of 10 m, due to heavy runoff from the surrounding intensive cultivations, with a dramatic impact on fisheries.

⁸⁶ Such concentrations are found in the Sado estuary of Portugal, on the coast close to Marseilles, on most of the sea-front area from Athens to Corinth isthmus.

activities which both give considerable levels of employment, and help in maintaining both the local cultural heritage, as well as biological diversity. "For the last thousand years, salt working, traditional aquaculture, and some coastal ricefields have given rise to the survival of many wetlands in the Mediterranean, in conditions of eco-compatibility and social consensus"⁸⁷

On the other hand, a wide range of service activities, both traditional and contemporary (from tourism to informatics, from retailing to marine offices), can provide high levels of employment, and can be carried out with moderate environmental impact. Tourism especially can have a beneficial indirect influence on employment, by encouraging traditional cultural activities and handicrafts.

A recent opportunity of particular interest is employment in relation to environment. European Community studies⁸⁸ indicate that efforts to improve environmental conditions can provide high employment levels in comparison to the funds invested. Even more, integrated management of coastal resources, within the framework of sustainability, will also provide permanent employment opportunities for a large number of people, in planning and designing the necessary measures, in implementing them through a variety of sectors, and in control and feedback actions. The active management, for example, of all significant natural areas on the Mediterranean coasts will necessitate the establishment of local services, with considerable staffing needs.

It should be pointed out that direct employment in activities related to sustainability will have a positive effect in the popular comprehension and acceptance of its principles.

sustainable economic development

Within the framework of global competition, the economic development of the coastal zones, and especially of the Mediterranean, has to be based on its comparative advantages, which can be summarised as follows :

- Attractive environment for inhabitants and visitors.
- Cultural and historical wealth.
- Marine accessibility.
- Human potential.

It is reasonable to insist that nothing should be done to jeopardise these advantages, and common efforts should be directed in enhancing them. A first step in this direction would be a careful and systematic inventory of these major assets, followed by an evaluation and prioritisation. The next step would be a consistent monitoring of their status and trends, and of their response to management measures⁸⁹.

⁸⁷ From the conclusions of the international workshop on "Nature and Workmanship, organised by Insula in Paris, on 19-20.06.1997, which include detailed proposals for the encouragement and maintenance of these activities.

⁸⁸ Bibl. : Commission of the European Communities 1994.

⁸⁹ In a more focused context, under the MedWet Initiative, such a system for the inventory and monitoring of Mediterranean wetlands was designed, and has been used in France, Morocco, Portugal, Greece and Spain.

In the long term, it is sustainability - through the wise use of coastal resources, both natural and anthropic - that allows the best capitalisation of the comparative advantages of the coastal zones, thus leading to sustainable economic development.

Population flux and employment : The Mediterranean coast of Turkey

Turkey is a large country covering almost 778 km² and extending from Europe to Asia. Its European part is called Thrace, while the Asian one Anatolia, is a long land mass bounded by the Black Sea in the North and the Mediterranean Sea in the East and South. The central part of the country is an undulating high plateau extending from West to East, with an average altitude of 1,250 m⁹⁰ above sea level. According to relief, climate and soil, Turkey can be divided into two large natural areas : the inland regions and the coastal ones, with a total length of 8,272 km, which bear the names of the bordering seas⁹¹.

The Aegean and Mediterranean Turkish coasts measure 4,141 km, with an additional length of 499 km in the Turkish islands. The climate in these areas is mild, with long dry summers, but relatively humid during the rest of the year, with an annual rainfall exceeding 600 mm. The coastal zone has sufficient water resources, used mostly for irrigation (71%), but also for public water supply (17%), industry and power plant cooling (12%). The vegetation cover is mainly forests, which represent almost one third of the total forest areas of Turkey⁹², and the land relief is a contrast of high mountain ranges and narrow coastal plains. The combination of sea, sandy beaches, forests and mountains provide the Mediterranean and Aegean Turkey with beautiful landscapes, which constitute a major natural asset.

The flora and fauna species in the area are abundant and they make Turkey one of the main centres of biodiversity in the Mediterranean Basin⁹³. Unfortunately, protection of the natural environment, both officially and unofficially, is very weak. The sea coast in the East and South is mostly calm and of relatively small depth, and thus it offers various opportunities for commercial fishing, marine production and amateur fishing, as well as good possibilities for swimming and for other aquatic sports.

The main traditional economic activities on the coast have been agriculture and fishing. The intensification, modernisation and mechanisation of agricultural practices, in the framework of the import-substitution state policy between 1923 and 1983, but especially in the 1950's, had as a result the deterioration of soil quality, with the excessive use of fertilisers and pesticides, and the destabilisation of the rural society, as displaced farmers in search of employment migrated from the villages to urban centres, as well as to foreign countries. Valuable agricultural land was, therefore, lost through the establishment of squatter settlements near the cities and through the construction of tourist facilities, being used more and more for other purposes, such as housing, industry and public sector investment. Population growth and the request of more fertile land after World War II caused the progressive clearing of grasslands and forests for farming. Thus unauthorised cutting and clearing, illegal settlements and pastures, fires and pests, partly also encouraged by the unclear land ownership situation, are estimated to have caused, between 1937 and 1987, the degradation of 50% of the Mediterranean and Aegean forest land.

In the framework of the same policy, industrial development in the coastal areas was very much encouraged. The economic growth of the region accelerated in the '50s, as a result of the im-

⁹⁰ Only 10% of the territory lies below 250 m above sea level.

⁹¹ Black Sea, Marmara Sea, Aegean Sea and Mediterranean Sea.

⁹² Of the Turkish territory, 26% is covered by forests, that is 20 million ha, of which 6 million ha constitute Mediterranean forested land and shrubland.

⁹³ The Mediterranean and Aegean Turkey had 631 endemic species, 4 of which have disappeared during the 20th century, while 20 others are seriously threatened. Some of the rare species of flora and fauna are under a protection status, especially in areas like Iskenderun (foxes, beavers, various migrating birds, seagulls, sea turtles, dolphins, dogfish, swordfish, blue-fish etc., as well as trees, such as pinus, ulmus, salix, populus and various sand, steppe, fresh water or salt water vegetation.

provement of transportation facilities and the increase of the demand for marketed food. Again in the '70s, infrastructure investments increased within the region, and the improvement of the highway and railway network, as well as marine transport facilities, encouraged even more economic activity. A quite rapid industrialisation process started in the Mediterranean and Aegean coast during the 1965-1975 period. The public sector was very much involved in the establishment of state-owned companies, such as iron and steel plant and fertiliser and cement factories, causing the growth of the industrial sector in the region, with positive impacts on communications, transportation and trade.

In spite of the first success of the import-substitution policy, favouring price and income setting, balancing subsidies and imposing foreign exchange control, obstacles increased gradually, such as distortions among sectors, shortage of equipment goods, inflation tendencies and growth of the external debt. A totally new policy, therefore, was initiated in 1983, aiming at the increase of economic growth, and promoting private investment, with the aim to create an outward-oriented economy. The lifting of exchange controls, the free convertibility of the Turkish lira and the liberal, and incentive-based investment system, including the restructuring and privatisation of the public sector, increased the annual growth of GNP to 5.5% and of foreign trade to 11%, transforming Turkey into a paradise for foreign investors⁹⁴.

Tourism since 1983 has become an expanding activity and an important foreign trade earner. Especially the Mediterranean coast of Turkey, with its natural long sandy beaches and the generally calm sea, makes the area very attractive for marine tourism. Sea and historical buildings, together with monuments and archaeological sites of great interest, dating from all historic periods (Ancient Greek, Hellenistic, Roman, Byzantine, Ottoman) are strong assets of the area, which is reinforced by the beauty of the natural environment. Unfortunately, these assets have not been left intact from the rapid and unplanned development.

The tourist sector has become also an important source of employment, with 100,000 jobs in official tourist facilities, a number that can be doubled if additional indirect jobs are taken into account. The fivefold increase of foreign tourist arrivals since 1983 (6.6 million foreign tourists in 1994) has a significant impact on the coastal areas, especially in the vicinity of Istanbul and along the southwestern coastline. The rapid development of organised mass tourism has increased even more the attraction that the coastal areas exerted to the inland region. The new employment opportunities in the industrial and services sectors, directed mainly to the male population of the country (since the female one was still mostly absorbed in the remaining agricultural occupations), has caused a population flux towards the coastal zones and compensated to a large extent the unemployment rate caused by decreasing demand in the agricultural sector.

The growth of the population in the coastal districts is due to migration, as well as to natural increase. The region is a centre of attraction because of its rapid industrialisation and its location on main transit routes. In addition, terrorist incidents in south-eastern Anatolia region have accentuated the trend. The continuing heavy migration wave from the hinterland to coastal cities of the Mediterranean and Aegean Sea has induced, in turn, strong demographic growth. Thus the population of the coastal settlement regions in the last 35 years has almost tripled. (In some large urban centres, like Izmir, it has increased sevenfold). However, recently the population increase in the coastal areas has been gradually approaching the national average⁹⁵. On the other hand, the population den-

⁹⁴ The number of foreign investors increased from 109 to 2,400, 57% of them coming from European countries.

⁹⁵ The annual population growth in the coastal region in 1965 reached in some areas 3.42%, while that for the whole of the country was 2.46%; today they are approaching each other with an almost common average of 2.17%.

sity during the same period has doubled, on both national and regional levels, but it is clear that the population densities of all coastal areas are above the national average⁹⁶

Ongoing migration to the coastal region is also affecting its urbanisation structure and aggravating the burden on the environment. Coastal cities expand extremely fast⁹⁷, as most of the Turkish urban population (reaching today more than 64% of the total) is concentrated in the coastal zones. As for the distribution of the population by settlement size, the urban population in the coastal region is concentrated in the big cities of 100,000 inhabitants and over. It must be emphasised that the major settlements are situated between the coastline and the plains, and that the settlement pattern in the mountainous and forest areas and in the plains where farming is still carried out is one of few, scattered centres.

Urban growth is detrimental to agricultural land, which until recently was protected by law against its use for other activities⁹⁸. But the law changed in 1989 in order to allow an almost unlimited diversion of agricultural land to other uses. Thus, actually non-irrigated lands can be changed to urban, industrial and commercial uses, as well as to road construction and tourist facilities.

Urban growth has also caused complex environmental problems in the towns : population is concentrated in the old city centres, this process being accompanied by the destruction of older buildings for widening roads and modernising housing schemes; illegal settlements are spreading uncontrolled around the main Turkish towns, thus occupying the only green areas left in the suburbs of these large cities; housing is mixed with industrial buildings, while industry is also expanding without being subjected to comprehensive planning.

In spite of the expectations of the government, urban development has not assured to the new immigrants access even to primary resources (such as decent shelter, water, electricity, sewerage). More specifically, the squatter settlements (*gecekondu* = built in one night) and unauthorised buildings are, for the most part, neither connected to water supply and sewerage systems, nor to electricity distribution networks. Consequently, environmental quality in many towns is so poor that the required standards (established by the European Community) will not be met before the year 2000.

The migration phenomenon, which has caused the urban growth of Turkish coastal cities, has also created considerable social problems. The newcomers, mostly from rural areas or from small settlements, are strongly attached to their customs and traditions, refusing to adopt a civic attitude and behaviour. They cannot, therefore, become integrated in the urban population, forming marginal groups, with all the consequent problems. Moreover, the need of young people to work and to provide for their family, in combination with the respect for traditional nucleus family rules, often stops the educational prospects of the younger generations. Thus, while Turkish coastal *gecekondu* appear much less miserable and destitute than the shantytowns of other developing countries, they do lack the basic conditions of life necessary for equitable social, economic and cultural development.

Returning to environmental deterioration, accelerated industrialisation, has led to air and water pollution and to the generation of waste and noise. Industry represents a relatively high share of GDP⁹⁹. The main industrial provinces are Istanbul, Izmir, Izmit, Adana, Mersin and Iskenderun. The 800 industries located in these urban centres are economically important, but also highly polluting, especially those producing textiles and leather items. Some industries are equipped with wastewa-

⁹⁶ Turkey had in 1965 a population density of 41 persons/km², while at the same time the coast had 52 In Adana, or even 94 in Hatay. In 1990, the density reached respectively in these two cities 112-205, with an average for the whole coastal zone of 130-140.

⁹⁷ Between 1980 and 1990 the populations of Istanbul and Izmir have increased by 82% and 65%.

⁹⁸ The only conditions were that the land had to be flat, arable, of good soil quality, and used for irrigated agriculture.

⁹⁹ At present, manufacturing industries account for about 70% of industrial value, and 80% of exports.

ter treatment plants, but most of them do not operate properly. So, pollution from industrial activities has reached a very critical point.

In addition, private investment in agricultural practices, in the form of pump systems for the exploitation of underground water, is not subjected to any restrictions; as a result, the heavy strain on underground water resources, in combination with the excessive use of insecticides and pesticides, have made irrigation activities a major source of water and soil pollution. Moreover, household sewage and ballast water from shipping dumped in the sea, heavily contribute to the pollution of coastal waters in the vicinity of large human settlements, especially in semi-enclosed bays and river estuaries.

The high economic growth, due to the outward-oriented state policy, has inevitably been accompanied by various imbalances, which in 1993 consisted of an increase in the deficit of the trade balance, with a fall to 52% of the export/import ratio, deterioration of the balance of payments, increasing budget deficits, swelling money supply and a very high inflation rate of 71%.. The GNP per capita amounts to US \$2,000, while the unemployment rate reaches 10% of the labour force¹⁰⁰, with a tendency to rise, due to the annual growth of population, in which young people predominate¹⁰¹, as well as to the improvement of the education level¹⁰², which will also lead to the increase in employment demands.

Various programmes have been initiated by the Turkish state, through national and international initiatives, in order to deal with the implementation of the current policy on coastal zones of the Mediterranean and Aegean sea. One of the first was the environmental measures that were introduced as a whole section of the Third Development Plan (1973-1977). The Authority of Protected Areas (ÖÇKK), affiliated since 1991 with the Ministry of Environment, declared in 1988 nine Protected Areas in the Mediterranean and Aegean coast (three of them especially visited by the Sea Turtle),

The Government has recently adopted sustainable development as an overall objective of environmental policy. The strengthening of environmental protection has been initiated over the last years, with large water resources development projects, sanitation systems, public transports improvements and the rehabilitation of city centres. Land use planning, in six 5-year development plans, promote the growth of medium cities, instead of the large metropolitan areas, encouraging decentralisation and a new migration movement from West to East. The pollution issue is more complex, as information is neither systematically collected nor easily available. The OECD recommended, therefore, the use of economic instruments (pollution charges, pricing of irrigation water, incentive measures, etc.), as well as the establishment of an Environment and Development Observatory, which should improve environmental data collection.

The provisions of the Environmental Law of 1983, do not only aim to prevent or eliminate pollution in the areas subjected to it, but also to assist the management of natural and historical assets, and preserve them for future generations. In addition, the Mediterranean Coast Law defines the "shore strip", prohibits all construction near the sea front, and establishes development limits.

On an international level, Turkey is an active member of the Barcelona Convention. An Action Plan for the protection of the Mediterranean Monk Seal was adopted in 1987, by the contracting parties; it became part of a national strategy in Turkey. With the financial support of the Ministry of Environment, a national project on the "Implementation of the National Conservation Strategy in Turkey" and "Foca Pilot Project" have been completed recently, in which conservation, research and public awareness were carried out in a comprehensive and integrated manner. Another project, financed

¹⁰⁰ Not counting the non-registered unemployed workers, due to lack of employment insurance, as well as seasonal unemployment.

¹⁰¹ At present, 55% of the population of Turkey is less than 24 years old.

¹⁰² Secondary education is provided to 4,000,000 Turks, while higher education to 445,000.

by GEF, is the “Conservation of Endangered Species in the Mediterranean Region and Environmental Education Programme”.

Finally Turkey has also been involved in some MAP coastal area programmes, such as the Bay of Izmir (1988-1993) and the Bay of Iskenderun. The objective of the latter was to propose a model for environmental management in the framework of development and environment interactions, on the basis of a systemic and prospective analysis. The study was implemented between 1990 and 1992 by a team from the Political Science Department of the University of Ankara with the assistance of the Blue Plan.

Conclusions : Tourism and industry development on the Aegean and Mediterranean coast of Turkey has caused mass migration from the interior regions, due to the employment opportunities provided, but with many negative side effects; social and political problems have appeared, which require drastic and inventive solutions, and environmental degradation has been caused, making necessary long-term efforts and serious investments to overcome.

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Development and nature : Conflicts in the Sado estuary (Portugal)

The Sado estuary is a large wetland, with a length of 30 km and a width of 2 km, situated in the mouth of the river Sado, 40 km to the South of Lisbon in Portugal. It can be divided into two main parts. First, the central bay, which includes the Setúbal bay and the Marateca channel (characterised by a strong tidal influence). The bay is subdivided again by sandbanks, creating a northern channel, close to the industrial area, and a southern one, which is deeper and larger. Second, the Alcácer channel, with an important influence from freshwater flow from the river Sado. To the Southwest, the estuary is separated from the sea by the long Tróia peninsula, with characteristic sand dunes, and a narrow opening to the ocean. This sand dune barrier plays a key role in preventing erosion and ensuring the protection of the coast line.

The largest part of the 23,560 ha of the estuary surface corresponds to wet surfaces, including the river itself, mud banks and marshes. Of this 50% are intertidal zones, located especially in the Marateca channel. The site includes vast expanses of mud and sandflats, reedbeds, as well as saltmarshes, saltpans and fishponds, surrounded by a chain of hills and pine, eucalyptus and cork forests. The hills, chalky in soil, reach their highest peak in the area of Arrábida¹⁰³, where the range comes in contact with the sea.

The climate of the region is temperate, with strong Mediterranean characteristics. The moderate climatic conditions, and the balancing climatic impact of the river and sea, assure an average of 11° C in winter and 22° C in summer, temperatures which - in combination with the rainfall level - provide favourable conditions for human habitation and tourism.

The area has a high biological diversity, including numerous species of mammals, birds and fish, as well as a rich flora. This natural wealth has been the base for the development, since antiquity of traditional primary activities, with a high productivity. The very first inhabitants of the area¹⁰⁴ subsisted mainly from fishing, hunting and sea food capture. Agriculture developed later, while during the Roman period the area became an important pottery centre. Today, traditional economic activities also include resin and cork extraction, as well as the exploitation of the local salinas¹⁰⁵ and rice cultivation; these two last activities benefit to a large extent from the high tidal regime¹⁰⁶ that characterises the area.

The Sado estuary is extremely important for the maintenance of water resources in the surrounding areas and has a crucial role in flood regulation in the region. On the national level it is of considerable economic importance as a marine transportation and industrial centre, and because of its abundant rice production¹⁰⁷. It is also of international importance, since it is a Ramsar site, and a Nature Reserve since 1980¹⁰⁸, regularly supporting more than 20,000 waterbirds (mostly waders), as well as European Otters (*Lutra lutra*) and Dolphins (*Tursiops truncatus*). To the West, the Natu-

¹⁰³ This part of the site has been declared Natural Park, and is protected under the Portuguese law.

¹⁰⁴ Villages from the Neolithic period (3500-2800 BC) have been discovered in the Carrasqueira and Comporta areas.

¹⁰⁵ In spite of their value for biodiversity (Neves 1995) and for tradition, salinas are in danger today throughout the Mediterranean, because of economic reasons.

¹⁰⁶ The range of the tide is of 1 to 3.5 m.

¹⁰⁷ Whose viability, however, depends on EC subsidies under the CAP

¹⁰⁸ Such as the Red Shank (*Himantopus himantopus*), the Flamingo (*Phoenicopterus ruber*), the Little Egret (*Egretta garzetta*), the White Stork (*Ciconia ciconia*), the Marsh Harrier (*Circus aeruginosus*).

ral Park of Arrábida still contains a rich diversity of mammals¹⁰⁹, colonies of bats, and a rich ornithofauna¹¹⁰. In addition, the site includes interesting and well-preserved Phoenician and Roman archaeological sites, as well as medieval buildings, such as the convent of Arrábida.

Nevertheless, the Sado estuary is today under threat mainly from two sides.

On the one hand, the intensification of the surrounding cultivations has led to high levels of pollution, due to the excessive use of fertilisers and pesticides; this is especially strong in the rice fields where runoff is more pronounced. Also, the constant increase of cultivated surfaces causes the gradual decrease of space for the natural habitats.

On the other, the expansion of the portuary facilities of Setúbal, and of the industrial zone to the East of the city, have already caused massive destruction of natural habitats (especially salt marshes and intertidal areas), and menace directly and indirectly the very existence of the Natural reserve of Sado. The industrial zone was started in the early '60s in the Mitrena peninsula. Today it includes a thermoelectric power generation plant, a pulp mill and paper plant, ore treatment facilities, metallurgical industries, chemical plants, food and biochemical industries. The pollutant outflow of these industrial plants is drained (with little or no treatment) through the northern channel, and cause the contamination of the estuary with chemicals, organic matter and heavy metals¹¹¹.

In addition, this has caused a rapid increase of the urban population of Setúbal and of other areas surrounding the estuary, which has led to greater organic pollution of the estuary. There has also been marked tourist pressure in the south edge of the site, mainly at the Tróia peninsula¹¹². Another threat is the replacement of the traditional economic activities by extensive and intensive fish farms, which constitute other major menaces for the sensitive ecological balance of the area.

Still the principal problem remains the explosive industrial development and the strong demand for expansion of the industrial and harbour facilities outside the Reserve, as they may cause irreversible changes in the area. As this expansion at present seems to be inevitable, because of its importance for the economic growth of the country (since nowadays the area constitutes one of the main industrial resources of Portugal), an urgent and sensible compromise with need for protection of the area had to be faced.

The efforts in this direction started in 1980, with the creation of the Sado Natural Reserve (RNES) by the Decreto-Lei 430/80. The management authority for the Reserve was established one year later, with the nomination of an executive director and the transfer of some supporting staff from the National Parks service. The first action of this body was to start the preparation of a management plan, which would determine the framework and guidelines of all activities in the area. In the meanwhile, a 19-member commission was established to assist the director of the Reserve, and to take decisions on all matters related to the management of the area. This commission represents the central and local government authorities, as well as the various economic and social sectors of the area. As a result, discussions have been long and intense, and consensus has been difficult to achieve.

¹⁰⁹ Such as the European Wildcat (*Felis silvestris*), the Genet (*Genetta genetta*), the Badger (*Meles meles*), the Wild Polecat (*Mustela putorius*), the Weasel (*Mustela nivalis*), the Fox (*Vulpes vulpes*), the Hare (*Lepus capensis*).

¹¹⁰ Mainly Bonelli Eagles (*Hieraetus fasciatus*), Buzzards (*Buteo buteo*), Kestrels (*Falco tinnunculus*), Eagle Owls (*Bubo bubo*), Barn Owls (*Tyto alba*), as well as Red-legged Partridge (*Alectoris rufa*), the Alpine Swift (*Apus melba*) and the European Bee-eater (*Merops apiaster*).

¹¹¹ Mainly Sn, Cd, Hg, Pb, and Cu.

¹¹² A large tourist complex, with high-rise buildings, already exists on the sea-shore.

Still, the management plan - which has to be approved by the commission - made progress in successive steps, gaining gradual approval, but at a very slow rate¹¹³; ten years were required to reach the level where the draft of the plan seemed to be accepted by a wide majority of commission members. Matters were not made easier by the existence of different planning systems that apply to the area. For instance, at the local level there are the municipal land-use plans PDM (RNES includes four municipalities), and at the regional level the regional land-use plans PROT (the area is included in the two regions of Alentejo and Lisboa). There is also the Instituto da Conservação da Natureza (ICN), which has the authority for managing the Portuguese network of protected areas, to which Sado belongs.

In spite of these difficulties, progress has been made through a long and persistent process of negotiation among the (often conflicting) interests and those responsible for the protection of the natural and cultural heritage. The management plan of the area will be soon approved, as it has gained a high degree of consensus. This is a key factor which ensures its effective implementation in the years to come.

The main objectives under the new management plan should be in the immediate future :

- to control land uses in the area, and to place limits on the territorial expansion of portuary and industrial facilities, urbanisation and tourism facilities;
- to mitigate the impact of existing productive activities on the natural environment, especially by curbing water and air pollution;
- to protect the major natural elements of the site, and especially the most fragile ones, such as sand dunes;
- to increase greatly the public awareness of the values and functions of the site, and thus gain long-term support for the sustainable management of its resources.

Conclusions : The process for arriving at sensible compromises concerning harbour and industrial facilities expansion in a sensitive natural area of Portugal has been long and arduous. However, the wide acceptance of a management plan for the area, which includes two nature reserves, indicates that there is a positive consensual ending, both for the maintenance of the natural and cultural heritage of the area and for the benefit of the local people.

Neves, R. and R. Rufino, 1995 "Importância ornitológica das Salinas : o caso particular do Estuário do Sado", ICN, Lisboa.

Papayannis, T. and Montemaggiore, A., 1996, " *Five Mediterranean Wetlands: Testing of the MedWet Approach*", a MedWet publication, eds. WWF, Rome.

¹¹³ Certain actions carried out in Sado under the MedWet 1 test sites project have helped in increasing awareness about conservation problems and sustainability options in the area (Papayannis 1996).

5. Environmental aspects

There is already an extensive body of knowledge on both the “green” and “brown” environment in the coastal areas, though not all aspects have been investigated in an adequate way. Coastal wetlands, for example, have been studied extensively, through the work of the European Commission, and especially of the expert group on Mediterranean-type wetlands¹¹⁴, through the MedWet Initiative¹¹⁵, and the research carried out by institutions like the biological stations at Tour du Valat (France), Doñana (Spain) and Thessaloniki (Greece)¹¹⁶. Very important work on the classification and assessment of Mediterranean sand dunes, with concrete proposals for their preservation, has been carried out by the European Union of Coastal Conservation (EUCC)¹¹⁷. Marine pollution of the Basin has been documented effectively through the work of the Mediterranean Action Plan and the Barcelona Convention¹¹⁸. Reputable international organisations, both governmental and non-governmental, such as the Bern Convention, the World Bank, BirdLife, IUCN, Wetlands International, WWF International, have developed for decades environmental programmes in the area. Of course, there is still a lot to be done, and parts of the Mediterranean are not well covered; but still there is a solid base of scientific knowledge and considerable practical experience.

What is missing is a thorough examination of human relations to environment; an analysis of how social and economic trends, and even cultural attitudes, correlate with environmental conditions, in both positive and negative ways. The basic questions of the pertinence of natural heritage to local populations, and the perception of quality of life in relation to environmental conditions, have not been fully answered. At present, within the context of the MedWet 2 project, a thorough analysis is being made of the social and economic aspects of coastal wetlands in five Mediterranean countries¹¹⁹. The results, which will be available in early 1998, will perhaps provide some valuable insights. But still there is a lot of work to be done.

human impacts on the coastal environment

The coastal zones constitute the interface of terrestrial, marine and riverine systems. Human activities and events in any of these systems may have an impact on the coast. For example, pollution upstream of a river, or heavy soil erosion in its hydrological basin, or the construction of a dam on its course, will alter the quality and quantity of its water regime, and will have a serious impact on coastal ecosystems near its estuary. Oil pollution in the sea can affect beaches. Agricultural run-off from inland areas can affect surface and underground water bodies in the coastal zones. It is important to underline that water is the element that connects these systems, and plays a key role for biodiversity and for human use, as well as in transporting nutrients, silt and pollutants.

¹¹⁴ Bibl. : Salathé 1996.

¹¹⁵ MedWet Initiative for the conservation and wise use of Mediterranean wetlands, under the aegis of the Convention on Wetlands (Ramsar, 1971).

¹¹⁶ Station Biologique de la Tour du Valat, Estacion Biologica de Doñana, Greek Biotope / Wetland Centre.

¹¹⁷ Bibl. : Healey and Doody 1995, Salman *et al* 1995.

¹¹⁸ MED-POL (Long-term Programme for Pollution Monitoring and Research in the Mediterranean Sea) has already a long history.

¹¹⁹ Albania, Algeria, Croatia, Morocco, Tunisia.

Human impacts on the coastal environment can be of different types.

Occupation of natural areas : The most important is the actual occupation of valuable natural areas (sand dunes, lagoons and other coastal wetlands, coastal forests), by other uses. In the past the main culprit was agriculture, through the drainage of wetlands¹²⁰. This has resulted in very large losses during the 20th century, which exceed 60% in a number of Mediterranean countries¹²¹. In Albania more than a third of its wetlands were drained after 1940. Tunisia has lost 28%, with 84% in the hydrological basin of the Mejerdah river. The FYROM has lost 62% since 1900. The figures for Greece are even higher¹²².

Traditional agricultural activities, however, retained a considerable biodiversity value in the rural areas. Thus, in the Prespa lakes in north-western Greece, the very high biodiversity in the national park is due to the variety of ecosystems that were created by traditional human activities through the ages. While in the Camargue, the rice fields provide feeding grounds for the large colony of *Phoenicopterus ruber* in the Salins de Giraud.

A second positive aspect is that wetland drainage or forest cutting for agriculture can be considered as a reversible change. Thus, the Carla lake in central Greece, one of the greatest Mediterranean wetlands, was fully drained in the early '60s for agricultural purposes, with dreadful environmental and economic results. It will be re-established in the next few years at a cost exceeding 100 MECU. Also the decrease of animal herding in the mountain areas of the Mediterranean has resulted in the natural growth of new forests. Of course, restored ecosystems can never reach the biodiversity value of the natural ones.

A third positive aspect is the low level of pollution caused in the past by traditional agricultural activities. This is not true anymore, as intensive cultivations rely on heavy inputs of agrochemicals, which in turn pollute both the land and the water bodies¹²³. It is, however, an aspect that can be minimised through careful management and controls.

Other uses, which more and more occupy and displace natural ecosystems, have none of these mitigating aspects. Industrial installations, energy production plants, large-scale storage installations, mass tourism facilities, housing, heavy infrastructure projects (harbours, airports, highways) cause irreversible changes through urbanisation, provide no biodiversity value and are often heavy polluters.

Over-exploitation of resources : Serious environmental degradation can be due to the excessive exploitation of coastal resources, but this may be to some extent a reversible development. Once the use is returned to sustainable levels, it is probable that negative impacts will be greatly reduced.

¹²⁰ Public health reasons, related to eradicating the *Anopheles anopheles* mosquito and combating malaria, were often claimed as an additional justification for water drainage.

¹²¹ Bibl. : Conservatoire du littoral *et al* 1997.

¹²² Bibl. : Papayannis 1992, Papayannis and Voivonda 1992.

¹²³ It was estimated in the late '80s that 550 tons of pesticides are discharged in the Mediterranean (World Bank 1990).

Thus excessive water pumping from aquifers in many Mediterranean areas, mainly for irrigation, has caused serious damages, lowering dramatically their levels and leading to pollution and salinisation. Once this practice is stopped, it is estimated that the aquifers will recover to a considerable degree. The time required is not, however, known.

Forest areas have been over-exploited by wood cutting and grazing, compounded by forest fires. Natural regeneration can repair the damages, as long as the soil and the genetic material is maintained. The presence of the rocky barren hills and mountains in the coastal areas of the Mediterranean indicates that this is not always certain.

Bird species that have disappeared due to excessive hunting pressures can be re-established once these pressures are eliminated. Of course, this will not be possible if their habitats have been destroyed irreversibly.

Pollution : The “brown” issues are particularly important in the coastal areas, and they concern land, air and water.

Land pollution was practically unknown in the past. However, it has become a real problem with toxic chemicals and hydrocarbons from industrial facilities, as well as widespread agricultural pollution, which has started having a major impact on soil resources, leading to considerable losses of productivity. Radiation can also become a major issue, especially due to the ageing nuclear plants in Bulgaria.

Air pollution is ubiquitous in and around all of the large urban centres of the Mediterranean, due to very bad fuels, poor maintenance of combustion engines, and lack of planning. At the moment, the prospects for improvement are not particularly hopeful. The cities of Athens and Rome, for example, have major air pollution problems, which undermine public health and menace monuments. Measures taken cannot overcome the rapidly increasing ownership and use of private automobiles, and thus no signs of significant improvement are visible.

Water pollution can be land- or marine-based. Some progress is being made in treating domestic wastes in a number of large cities of the Mediterranean; but this is a costly project to build and to operate, and it will take most of the 21st century before it becomes a common practice throughout the Basin¹²⁴. Programmes to combat hydrocarbon pollution have been implemented, but without spectacular results yet¹²⁵. Toxic wastes are in principle controlled, but effective policing is doubtful. No significant efforts have been made yet to control pollution from primary sector activities, especially from intensive agriculture.

Solid wastes and their inadequate management throughout the region present also major problems, as evidenced by open dumps (and the related fire hazards), streets littered with garbage, refuse floating in the sea or in lakes and deposited on the sea shore. It is estimated that approximately 500,000 cubic meters of solid waste is collected daily in the

¹²⁴ The heavy marine pollution of the Bosphorus, due to the domestic wastes of Istanbul, which has resulted in the disappearance of 85% of the fish species, is an example. Sewage treatment facilities have been planned, but will cover a small part of the pollution load.

¹²⁵ Such as the MedPorts Oil Pollution Management Project of the World Bank, funded by GEF, currently operational in Algeria, Egypt, Morocco and Tunisia.

cities around the Mediterranean; most of it is improperly handled. Even organised land-fill dumps consume space directly, and indirectly, by affecting wide areas around them.

All these factors degrade the quality of the Mediterranean, in essence a closed sea with very slow rates of water renewal¹²⁶. The problem is compounded by the damming of rivers and the retention of their waters or their use for irrigation, in which a large part of the water is lost in evaporation¹²⁷.

Impact of climatic change

It is more and more confirmed scientifically that global climate change is happening, and at faster rates than expected. It will have an effect on the low coastal regions of the Mediterranean, especially in sea level rise, salinity increases, and changes in weather patterns (especially temperature), and in river flow regimes. This will be compounded by the existing subsidence in Mediterranean deltas, due to decreased sediment input, caused by dams and other river regulation works, as well as prevention of wetland flooding by river dikes. The results will be negative, with grave implications for natural resources and human activities depending on them.

The main ones will be permanent or periodic (during storms) breaching and flooding of large coastal areas, even with small sea level increases, which will lead to inundation and degradation of large areas of wetland vegetation. Also the changes in weather patterns may cause increases of extreme phenomena (storms, floods, drought). Serious efforts are being made at present to study quantitatively and through modelling the changes expected, with the aim to devise methods for protecting the sensitive coastal ecosystems¹²⁸.

root causes

The World Bank and the EIB in their 1990 study of the Mediterranean environmental problems have identified as their causes :

- Inappropriate economic policies.
- Weak regulatory and administrative systems.
- Insufficient public awareness and political resolve.

In our opinion, the negative environmental impacts that have been mentioned have two root causes, from which all others develop :

- The first is private interests. It is people, at the end of the line, that take the decisions, or carry out the actions, which destroy the environment; and they do it to gain more personal benefits, usually financial. In the past, there used to be pride in the

¹²⁶ The enclosed nature of the Mediterranean hinders tidal movements and currents, and the shallow ridge from Sicily to Tunisia makes water movement even more difficult. Thus water renewal through Gibraltar, Suez and the Dardanelles is extremely slow, and polluting substances may remain in the water for a century (World Bank 1990).

¹²⁷ Egyptian engineers claim that once their new irrigation projects are completed, "not a single drop of Nile water will end up in the Mediterranean". The environmental implications of this attitude can be well understood, as well as the negative impact on fish resources.

¹²⁸ MEDDELTA is such a project, funded by EC DGXII (1994-1996), which concerns the impact of climatic change on the north-western Mediterranean deltas (Ebro delta in Spain, Rhône delta in France, Po delta in Italy).

natural and cultural heritage. Now financial interests seem to play the primary role, within the wider ideological context of the market-based economy.

- The second is ignorance. Ignorance both of the long-term impact of human actions in undermining or destroying the functions of natural systems and in degrading the environment, and of the social benefits - the values - to be gained from these natural systems, which in turn removes the motive for their wise management.

Ignorance can be corrected by education and information; and in this direction important work has started in some areas of the Mediterranean at the international, the national and the local level. Harmonising, however, private interests with social pride and the common benefit is a moral and political issue, that will certainly concern humanity in the next century¹²⁹.

¹²⁹ Bibl. : Engel 1993, Gotlieb 1996.

Political pressures on the environment : The Neretva delta (Croatia)

The Neretva area is located at about 100 km NW of the city of Dubrovnik, (on the western coast of former Yugoslavia), and consists of the floodplain and delta of the Neretva river, flowing from Bosnia-Herzegovina, through Croatia, into the Adriatic Sea. The river enters the Croatian territory at Metkovic and crosses it for about 20 km, before reaching the sea, just outside the port of Ploce. The Croatian part of the Neretva river, together with its delta, constitute a great wetland of about 35,000 ha.

The topography of the delta is characterised by a vast, flat plain with some small elevations in its northern part, surrounded by hills and small mountains (less than 700 m in height). It has taken its present form since the arrangement of the Neretva river course, in the beginning of the century. The site includes a large variety of biotope types, indicating the existence of a rich flora and fauna; it contains three Ornithological Reserves (Orepak in the SE, Pod Gredon in the S and Prud in the NW of the delta), covering together almost 9,500 ha, as well as one Zoological Reserve of about 2,500 ha situated more to the E. In addition, the site is endowed with an extremely diverse and beautiful landscape, of which a 3,700 ha area in the NW of the delta, in the Community of Desne, has already been classified as a Protected Landscape Area.

The site is intensely marked by the ever-present element of water, and the very extensive reedbeds. The delta presents a large and very complex hydrological system and, therefore, a considerable variety of wetland types. The entire territory is characterised by a dense irrigation and drainage canals network, allowing the formation of arable land parcels of various sizes.

The whole area has been highly artificialised through the traditional practices of agriculture, fishing and hunting, which, however, have also contributed to the biological diversity of the site. The main tool has been the wise management of the local water bodies, for various purposes, including circulation and transport. Land levels have been modified by the excavation of the river silt, in order to make possible - through backfilling - rich land plots for cultivation, creating at the same time, an original sustainable system of wetland-related agriculture. Vast hunting areas have been opened with the traditional technique (still used today) of burning the reedbeds.

Still today, the principal primary economic activity is agriculture (especially the cultivation of fruit and vegetables) and, to a lesser degree, fishing and hunting. The arable land is largely extended in many parts of the delta area; it is irrigated by a dense canal network, as well as by artificial wells, and its productivity is considered to be quite satisfactory. Fishing activities, on the other hand, are concentrated mostly in the smaller communities and are still being practised in the traditional methods; the most characteristic one is eel-fishing, which constitutes also a significant nutrition source for the area. Finally the cattle-raising concerns mainly large animals and is mostly practised free grazing in the fields.

However, not only economic activities are wetland-related in the Neretva delta, but also other aspects of the local society. A characteristic particularity of the site is the close relation between water and everyday life, which is ingeniously adapted to the possibilities and limitations of this element. Water-related living and transport are marked by the construction of most houses on the water edge, and by the extensive use of small, flat-bottomed wooden boats for small-scale private and commercial transportation throughout the canal network, while the river serves for large-scale commercial and agricultural transport. On the other hand, the annual eel fishing competition and celebration, with participants from all the surrounding territory, confirms the strong links between water-related activities and traditional social customs.

Geographically, the Neretva delta constitutes a strategic area, as the link between northern and southern coastal Croatia (Split-Dubrovnik), as well as between the Adriatic Sea and Bosnia and Herzegovina (through the Ploce-Metkovic-Mostar-Serajevo axis), with a quite satisfactory road network from the point of view of density and quality. On the other hand, the Neretva river is also being systematically used for transport, from the sea up to Metkovic, of most of the agricultural products. Industrial activity is concentrated in the portuary city of Ploce and its suburbs, where there is a large unit for the storage and handling of liquid fuels, which is extremely important for Bosnia and Herzegovina. In the same area there are also the storage and packaging installations for most delta agricultural products.

In addition, in the wider delta area there are sites of great historical and religious interest, such as archaeological sites, historic monuments, as well as more recent traditional buildings, villages, water-mills, etc. Due to the special importance of the area on a national and international level being obvious, the Croatian State has already foreseen the improvement of the existing Split-Dubrovnik road axis, as well as the construction of one or two small airports, for the transportation of products, but also of visitors.

Overall, the Neretva delta could be evaluated as a site with rich natural resources, very interesting topography and landscapes, and strong cultural heritage, a result of the harmonious relationship between wetland nature and economic and social life, and as such it has been classified among the four Croatian Ramsar sites of international importance. However, the Neretva delta has a strong development potential, which should not be overlooked, as it may entail serious threats.

In recent years, a number of factors have seriously upset the balance between man and nature in the Neretva area. Major threats for the delta are the systematic decrease of the reedbeds, in favour of agriculture, the decrease of land productivity, due to growing soil pathogeny, the illegal and excessive hunting activity, the uncontrolled creation of new irrigation canals and the extensive construction of large infrastructure works, especially in the zone surrounding the delta, which is undoubtedly of greatest ecological importance. The pressures exerted to the natural ecosystems from the need to gain more arable land are very strong. Modern technology has revolutionised certain traditional practices (such as the digging by hand of the river silt) and has replaced them with less sustainable ones. The construction of dams on the Croatian part of the river has influenced its flow, and has decreased the silt and the nutrients it carries. In addition, an aluminium production plant in the city of Mostar¹³⁰, constitutes a constant river pollution source.

An even greater danger for the area has appeared with the explosive political and military developments of the last years in the area of former Yugoslavia, the port of Ploce has been designated by the Washington agreements as the only marine transport point of the newly-formed State of Bosnia and Herzegovina. Its importance, as well as the development of the adjoining industrial zone in the delta and adjacent to the mouth of the river, constitute important threats, especially in face of the strong possibility of their expansion in the near future¹³¹.

A less intense, although in the long-term equally dangerous threat, is the spontaneous spread of urbanisation throughout the wetland, which had been successfully controlled in the past by the fear of river floods, forcing settlements towards the surrounding hills. Now, however, the flooding control due to the upstream dams has permitted the construction practically anywhere in the floodplain. Presently, this is concentrated on the banks of the river and of some major streams and canals, in

¹³⁰ City located near the Neretva delta.

¹³¹ The construction of an LPG storage and handling facility in the industrial zone of Ploce has been approved recently.

the form of quite continuous small traditional settlements; but there are tendencies for this unplanned urbanisation to spread and undermine the integrity of the site, if not properly controlled.

A site of this complexity and size, with such a variety of problems, certainly requires a sensitisation of the local population, the strong involvement of local governmental and non-governmental organisations and strong guidance and support from the state authorities. However, in spite of the considerable population in the area (about 30,000 inhabitants), certain social and administrative weaknesses, resulting perhaps from the recent dramatic events, have prevented up to now such concerted actions.

The almost total absence of measures and management for the protection and conservation of the wetland is also due to a lack of information about the general environmental situation, and of an appreciation of wetland functions and values. The problem becomes even more difficult with the complications created by the need of co-operation of different institutions¹³², with unclear authority and sometimes conflicting interests. The challenge, therefore, for the integrated management of the Neretva delta, in a framework of sustainability, is how to inform the local population and to reach consensus, in order to bring all these forces together, towards a common goal.

A serious approach has already started by the Croatian government, with the declaration of the area as a Ramsar site, and the creation of the three Natural Reserves, and of the Protected Landscape Area. Two proposals have been studied by the Croatian Ministry of Culture, about the declaration of the site as a National or as a Natural Park. The first one does not seem very likely to be adopted, but the second appears already in the report of the Agency for the Protection of the Cultural and Natural Heritage to the Parliament Committee, which it will consider in the beginning of 1998. The proposal consists of a two-year transitional period, for the implementation of protection measures; in the meantime, a more complete management plan of the area will be prepared, which will include not only a regulation of all activities within a framework of sustainability, but also the establishment of a local management body, which will have the responsibility for implementing the plan. As a first step, a project has already started under MedWet, for sensitising local decision-makers and the public, and establishing management guidelines in the area.

In all these efforts, the principal objective is to achieve a compromise between the indispensable development of the area and the conservation of a rare nature to human balance, and the protection of a precious ecological wealth. In this way, the traditional sustainability of the site, based on the rational use of its natural resources, will be adapted to contemporary conditions and will be maintained sustainably in the future.

Conclusion : The Neretva delta is one of the rare sites of the Mediterranean Basin to retain still today a strongly wetland-related range of social and economic activities. Menaced by explosive development tendencies, resulting mainly from political realities in the wider area, especially in Bosnia Herzegovina, it can only survive through concerted management efforts, and a strong local participation, resulting from a thorough sensitisation to the issues and options of sustainability.

¹³² The Agency for the Protection of Cultural and Natural Heritage of the Ministry of Culture and the local county (zupanija) of Dubrovnik-Neretva have the main responsibility; the county of Split, however, is the traditional reference point of the Neretva area. The elected mayors of the local towns and villages represent the people and have a great influence on the decisions taken. Also, a number of other local and central government agencies, responsible for economic activities, transportation, infrastructure, portuary activities and water management have a strong voice, as well as the local inhabitants, who are forceful, independent, and often with strong personal convictions.

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6. Synthesis: People for sustainable development

The basic premises of this study have been that sustainability can provide a solid framework for resolving the social and environmental crises in the coastal zones; that sustainability cannot be achieved without the commitment and active participation of the people; that the efforts of institutions, services and organisations, national, international and transnational, governmental and non-governmental, are important, but not sufficient; and that - unless sustainability becomes soon a social movement and a major economic current - it will simply fade out. Nowhere is this more evident than in the coastal zones of the the Mediterranean, due to the combination of a very sensitive environment (with high biodiversity, limited resources, extensive cultural elements) and intense and increasing population pressures.

If the above premises are accepted, it follows that efforts must be directed in mobilising people in favour of the sustainable use of resources. In our opinion, this should be a major goal of all those who are promoting sustainability, and especially of the European Commission.

integrated coastal management

The implementation of sustainability in the coastal zones presents some special aspects. In them, the combination of marine, terrestrial and riverine environmental impacts on the one hand, and the activities of a wide variety of sectors on the other, creates an extremely complex field, in which human and natural actions interrelate in ways that are little understood. This is compounded by the parallel and often overlapping jurisdictions of public administration bodies, that all claim a voice and a decision-making role in matters concerning both the management and the use of resources of the coastal zones¹³³.

Land use conflicts could be resolved, natural and cultural wealth could be maintained, environmental impacts could be mitigated to a considerable degree, by the integrated management of the coastal zones (ICZM), within the framework of sustainability. This approach, which is being promoted by the European Commission through its Communication on Coastal Zones¹³⁴, would require new patterns of public administration, based on close concertation, power sharing, and public participation, that will break with the past and lead to an effective and really integrated management of space and resources. Nowhere in the Mediterranean is this visible, although sporadic efforts in this direction are beginning to appear¹³⁵. How is this drastic change in public practices going to occur? This is the key question to be answered, and it is not a simple one. Certain guidelines for achieving sustainability and integrated management in the coastal zones are proposed in the paragraphs that follow.

¹³³ The case of the Sado estuary in Portugal is characteristic. Bibl. : Papayannis and Montemaggiore 1996.

¹³⁴ Bibl. : European Commission 1995 a.

¹³⁵ The actions of the *Conservatoire du littoral*, in purchasing and managing sensitive coastal areas in France for the public benefit, is a good example, although limited in scope. It has been followed recently by the establishment of a similar organisation in Tunisia.

new goals for the coastal zones

The first step is to define and agree on common objectives for an integrated approach to the coastal zones. These could be the following :

- Ensuring the sustainable development of the coastal zones, in conjunction with continuous efforts for the creation of work opportunities and the maintenance of high levels of employment.
- Consistent efforts for resolving conflicts and for the wise use of territorial resources, and especially coastal land, through comprehensive planning, public consultation and a fair mediation process.
- Improvement of the living conditions for coastal populations, especially for the underprivileged groups, by the provision of clean and pleasant environment, housing and services.
- Careful measures to provide to all coastal inhabitants an equitable access to local resources, through a system of incentives and disincentives..
- Effective conservation and enhancement of the natural and cultural heritage, which constitutes a major comparative advantage of the Mediterranean coastal zones, and use of its values for the benefit of people.

More objectives could be added to this list, but the main issue remains that they require common agreement. That is why a structured and well-organised process of public discussion should be initiated throughout the coastal areas of the Mediterranean, with the wide participation of the public and private sectors, leading to the final formulation and acceptance of these goals. The European Commission and the Barcelona Convention can play an important role in organising and funding this dialogue.

explaining sustainability to people

In parallel, a concerted campaign should start to make concepts such as sustainability and integrated management understood by people, especially in the coastal zones, as at present they are perfectly unknown or misunderstood. The main aim should be to convince people that they have concrete benefits from the implementation of these concepts, and that through them they gain additional and significant empowerment.

Such a wide campaign through the Mediterranean, a region of more than 20 countries and many different cultures and societies, is a daunting (and expensive) task. But unless it is undertaken, the hope that the complex notions in question would be understood by themselves is unfounded. A methodology for such campaigns has been developed in previous work of a lesser scale, and has been documented theoretically and tested in practice¹³⁶. The methodology includes the following steps :

- Refining and clarifying the message, and associating to changes in behavioural patterns, so that people can relate the message to realities of their everyday life.

¹³⁶ Under the MedWet 1 project (1993-1996), a detailed methodology for raising public awareness for Mediterranean wetlands was developed and tested in five EU countries, as well as in Tunisia. Bibl. : Finistauri 1996.

- Identifying target audiences, as it is not feasible to reach the whole of the population, on the basis of importance (with opinion leaders in top priority), ease of access, and probable future role in implementing the concepts.
- Developing new and imaginative ways to deliver the message, including the use of traditional festivals¹³⁷, as the usual ones are both very costly and a bit overused.
- Promoting concrete demonstration actions, which may bring rapidly positive and significant results, which will help to convince people.
- Among the target audiences, approaching children and in general young people, is not only a priority, because they have a more open mind and a greater sensitivity to environmental issues, but also because they are invaluable in spreading the message to their families and to older people.
- Encouraging people to act on the basis of the message, not only in implementing its proposals, but in exerting political pressure on decision-makers.
- Evaluating the impact of each campaign activity and using the feedback to correct and direct it.

EFILWC could consider initiating in 1998 a programme for the design and testing of such a public awareness campaign on sustainability and integrated coastal management in the five Mediterranean EU member states, from Portugal to Greece.

the use of legal and political tools

Legal and political tools are essential in implementing the objectives and the management measures agreed. However, their effective use depends to a large extent on politicians and other decision-makers. In democratic countries (and not only) people in power tend to consider carefully the opinions and wishes of their voters. That is one more reason for the importance of people in achieving sustainability and in managing resources wisely.

In this context, certain actions should be directed to decision-makers, which could be the following :

- Providing sound but easily understood information and “training” (in the form of short seminars) to them, concerning sustainable development, land use, planning and environmental issues.
- Using people-power to convince decision makers of the growing public interest in the issues, and to promote the need for integrated coastal management and for improving the corresponding legal and administrative framework.
- Encouraging public participation in the planning and management process, which will certainly require a two-way willingness to share power (from the politicians) and to offer services (from the public).

In this effort, non-governmental organisations could play a major role, as they are both quite well informed and sensitive to the issues, and usually have experience in lobbying and in information efforts. Funding, however, should be assured from other sources, as their present finances would not be sufficient.

implementing sustainability in the coastal zones

¹³⁷ Under the MedWet 1 project, one of the most successful ways to promote wetland values was through the *Tarabusco* (type of small local fish) festival in the Diaccia Botrona area of Italy.

Once the efforts for informing and sensitising the public and the decision-makers is well on the way, sustainability in the coastal zones can be implemented systematically, with an emphasis on the people. The following actions would be necessary to make it possible :

- Developing a mid- and long-term strategy¹³⁸ for public mobilisation in the coastal zones, and other related issues, concerning sustainability.
- Identifying possible partners in this effort and making a more effective use of existing organisations, structures and networks. This should include not only the representatives of the private sector, but also other social actors, such as churches, the labour movement, the academic and art world.
- Initiating people participation pilot projects in a number of countries. These could be associated to the present pilot projects promoted by the EC in the coastal zones, under the TERRA and LIFE programmes.

A key question to be answered in this context is who can be the initiator of these actions, the co-ordinator of the activities necessary in a number of Mediterranean countries, starting perhaps but not limited to the EU-member states, and the catalyst for their successful development.

In the limited case of the conservation and wise use of Mediterranean wetlands, an EC initiative led - through MedWet - to the establishment of the Mediterranean Wetland Committee¹³⁹, a grouping of governments, of inter-governmental and of non-governmental organisations, under the Ramsar Convention; and the first indications are that such a model can bear good results.

A similar approach could be used for the coastal zones, consisting of a similar grouping of governments and organisations, under the aegis of the Barcelona Convention, managed by the UNEP Co-ordination Unit for the Mediterranean Action Plan. A good step in this direction was taken through the establishment of the Mediterranean Commission on Sustainable Development in July 1996, which held its first meeting in Rabat, Morocco, on 16-18 December 1996¹⁴⁰. However, its membership, which at present is government-dominated, should be enlarged, to reflect more broadly the social and productive sectors in the Mediterranean, as well as the non-governmental organisations. Also, it should be freed from the procedural and administrative constraints of the Barcelona Convention, which tend to burden the work with bureaucratic processes. If this is not possible, a parallel non-governmental structure should be established, to carry out the much-needed public information and sensitisation work on sustainability.

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¹³⁸ The Mediterranean Wetland Strategy has been prepared by a number of governments and non-governmental organisations, and has been approved by the 300 participants in the Venice Conference in June 1996. It is currently being implemented under the Ramsar Convention.

¹³⁹ As of June 1997, the European Commission, the Barcelona, Bern and Ramsar Conventions, 12 governments, and five international NGOs have confirmed participation.

¹⁴⁰ Bibl. : UNEP-MAP 1996 b.

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Abbreviations

CAP	EU Common Agricultural Policy
DG XI	Directorate General XI of the EC (Environment, Nuclear Safety and Civil Protection)
EC	European Commission
ECU	European currency unit
EFILWC	European Foundation for the Improvement of Living and Working Conditions
EKBY	Greek Biotope / Wetland Centre
EU	European Union
EUCC	European Union for Coastal Conservation
GDP	Gross domestic product
GEF	Global Environmental Fund
GNP	Gross national product
ha	Hectares
ICZM	Integrated Coastal Zone Management
IUCN	International Union for the Conservation of Nature
MAP	Mediterranean Action Plan, under UNEP
MECU	1,000,000 ECU
MCSD	Mediterranean Commission for Sustainable Development
MedWet	Initiative for the conservation and wise use of Mediterranean wetlands
NGO	Non-governmental organisation
OECD	Organisation for Economic Co-operation and development
PNRC	Parc national régional de la Camargue
Ramsar	Convention on Wetlands (Ramsar, 1971)
RNG	Réserve régionale de la Camargue
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WWF	World Wide Fund for Nature

European Foundation for the Improvement of Living and Working Conditions.

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