PUBLIC PARTICIPATION IN THE PROCESS OF INTEGRATED COASTAL ZONE MANAGEMENT

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SUMMARY

The coastal zone is a complex and highly dynamic system, comprising interactions within and between the high seas, atmospheric processes, the operation of different ecosystems and coastal processes, and up-catchment human activities as well as the different degrees of development present. The changes in the biological, chemical and geological attributes of the coastal zone will remain in a dynamic balance as long as the natural system remains closed in terms of inputs and outputs. However, considerable changes that open the system, at any point in any part of the system, can generate chain reactions far from their point of origin and possibly in a totally different system whose environmental conditions will be subsequently altered.

Being the coastal zone a centre of economic activity for tourism, agricultural, fisheries and shellfish industries, the year-round population near the coast is increasing and new activities non-coastal specific such as infrastructures, new industries and urbanisation are also developing. These changes are intended to lead to increased economic development and improving standards of living. However, many of these changes in the coastal zone also threaten the traditional agricultural and fishing activities, which are being replaced by activities which have a larger impact on the environment.

The coastal carrying capacity is vulnerable. If economic activities are not co-ordinated, the combination of each of their environmental pressures will produce acute environmental impacts resulting in marine and freshwater pollution, air pollution, loss of marine resources, loss of natural land resources and land degradation, destruction of historic and architectural heritage, loss of public access to the coast, noise and congestion. Natural risks and hazards, such as climatic change, earthquakes, forest fires and floods, pose additional hazards to coastal areas in the Mediterranean.

The traditional management approach has been sectoral, which given the interrelationships of socio-economic and environmental sectors pollution was transferred from one sector to another, from one region to another, or from one resource to another. The new management approach (Integrated Coastal Zone Management) allows preventive measures because it is more comprehensive and long-term in accordance with the dynamics of nature.

The Spanish coastal legislation has many shared and concurrent competencies and it is not effectively implemented through co-ordination because administrations at different levels fear the emptiness of their competencies. The result is sectoral and contradictory policies, which have no halted the deterioration of the environment, which continues apace in many areas.

Integrated Coastal Zone Management (ICZM) is considered the proper management and planning of the coastal zones in order to achieve sustainable development. Adopting ICZM does not require the normal breakdown of sectoral managerial structures, but ensures that appropriate links between them are developed and maintained. It requires, thus, concerted action at all levels: the local population, the regional and national government and the socio-economic actors.

Participation makes possible to negotiate and arrive to a consensual social choice for the resolution of use conflicts and beneficial trade-offs in the coastal zone. Beneficial trade-offs between economic development and environmental quality that different societies and/or over time as societies evolve will accept may be very different according to different values in those nations and/or over time. What must be sustained, however, is the capacity for renewal and evolution in ecosystems, and innovation and creativity in social systems. Once society learn to recognise the symptoms and/or evidence non-sustainability, it shall adjust to sustainable activities accordingly.
Participation, together with other preventive instruments, has a key role to play at all stages of the process and at all levels of governance. This report focuses on participation of citizens, at early stages of the process and at local level. ICZM does not eliminate the top-down approach, but combines it with a bottom-up approach. As the popular expression says: *Think global, act local*, many of the steps towards sustainable development shall be taken at local level. This is justified because not only many environmental problems have their roots in local activities, but also local government is the closest to citizens that first perceive environmental problems, which may have many solutions. The feasibility of a bottom-up approach in Spain is legally based on the principle of subsidiarity and local autonomy. It also takes advantages of the starting of the democratic process of elaboration of Local Agenda 21.

Participatory democracy is not a substitute of representative democracy, but a complement that improves the effective implementation of ICZM programmes. Citizens contribute reflecting the diversity of values both within and between different stakeholder groups which are underpinned by different value systems. Participation makes citizen aware of the use and value conflict and can discuss possible solutions to arrive to a consensus, which creates a sense of ownership, commitment to enforcement of environmental policy, and greater efficiency in the process with the result of improving environmental protection. The dilemma is to find which is the best combination of representative and participatory democracy in order to get the best advantage of their positive synergy.
ACRONYMS

BLRA: Bases of Local Rules Act
CWE: CoastWatch Europe
EAP: Environmental Action Programme
EC: European Commission and other times European Community
ECE: Economic Commission for Europe
ECSA: Estuarine and Coastal Estuarine Sciences Association
EEA: European Environmental Agency
EIA: Environmental Impact Assessment
EU: European Union
EUCC: European Union Coastal Conservation
EUROCOAST: European Coast Association
FAO: Food and Agriculture Organisation
GAPA: General Administration Procedure Act
GDP: Growth Domestic Product
GESAMP: United Nations Group of Experts on the Scientific Aspects of Marine Pollution
GIS: Geographical Information Systems
ICLEI: International Council Local Environmental Initiatives
ICZM: Integrated Coastal Zone Management
IOC: Intergovernmental Oceanographic Commission
IPCC: International Panel for Climate Change
IUCN: International Union for Conservation of Nature
LDIP: Llobregat Delta Infrastructures Plan
LWM: Low Water Mark
MAST: Marine Science and Technology Programme
MAP: Mediterranean Action Plan
MOPTMA: Ministry of Public Works, Transport and Environment
NGO: Non-Governmental Organisation
NIMBY: Not In My Back Yard
OECD: Organisation of Economic Co-operation and Development
OTEC: Ocean Thermal Energy Conversion
RS: Remote Sensing
SC: Spanish Constitution
SoA: Statutes of Autonomy
UK: United Kingdom
UNCED: United Nations Conference on Environment and Development
UNEP/OCA/PAC: United Nations Environment Programme/Ocean and Coastal Areas/Programme Activity Centre
UNESCO: United Nations Educational, Scientific and Cultural Organisation
WB: World Bank
WCC: World Coast Conference
INTRODUCTION

I chose the topic of coasts because Spain is a Peninsula and several islands that has its majority of the population and main economic activities in the coastal zone. Even if coastal management policies might foresee many of the principles of an Integrated Coastal Zone Management (ICZM), they are not implemented in practice and the coastal zone has still many environmental problems.

The main objectives of this report are the following:

1) To identify socio-economic and environmental problems in the coastal zone in a regional, national and local perspective in Spain.
2) To identify the failures and factors of success for an effective coastal zone management programme.
3) To analyse the role of citizen participation in the process of integrated coastal zone management and discuss the feasibility of citizen participation through Local Agenda 21.

The scope of this report is the following:

1) The socio-economic problems to focus are conflicts of uses and the accumulative environmental impact caused by socio-economic activities in the coastal zone.
2) Failures in implementing the Spanish coastal zone management are focus on conflicts of competencies. The elements of ICZM emphasised are co-ordination and public participation through a bottom-up approach.
3) Public participation in the process of ICZM in a local perspective is focused on beach management through Local Agenda 21.

The hypothesis of this report is the following:

Public participation is scarce and not done properly in the Spanish coastal zone management. ICZM, instead, has shown that public participation is an important preventive procedural technique that can improve the effective implementation of ICZM programmes.
DATA COLLECTION

The information has been gathered from different disciplines and different kind of sources in order to have a trans-disciplinary approach of natural and social sciences in the different sections of the report. Five general issues are the mainstream for data collection:

a) State of the environment

Different studies have been made by the UNESCO-IOC at a world scale, by UNEP at a Mediterranean scale, by the EU at a European scale, by the Spanish Government at a national scale. Books written by University professors have also been consulted. Some of the definitions used in the report are the following:

- Earth’s carrying capacity:
  Following the concept of carrying capacity, defined, by biologist, as the number of individuals of a given species that can be sustained over time without over-burdening de host system prelude to conflict is based on a clear fact: the land and sea areas are essentially fixed in size but the population seeking to live and work there is continuously increasing. Such a measure must consider the average long-term per capita resource consumption of all natural species.

- Coastal zone:
  Two-thirds of the Earth’s surface is covered by oceans, one third is land, and the transition between them is a small strip, the coastal zone. The 1993 World Coast Conference gives a common definition of what constitutes the boundaries of the coastal zone based on an ecosystem approach: “...the band of dry land and adjacent ocean space (water and submerged land) in which territorial processes and land uses directly affect oceanic processes and uses, and vice versa”.
  The coastal zone is a complex and highly dynamic system, comprising interactions within and between the high seas, atmospheric processes, the operation of different ecosystems and coastal processes, and up-catchment human activities as well as the different degrees of development present. The maintenance of those links is essential for a sustained carrying capacity of the coastal zone.
  Particular coastal management programs state an specific definition of coastal zone boundaries, which serves the different objectives and purposes of the program. This definition can be achieved using administrative boundaries, ecological or geographical attributes, cultural identities or simply other convenient boundaries which may result from a mixture of these. Most of the times, coastal zone boundaries are based on administrative boundaries that usually do not match with an ecosystem approach, considering dynamic interrelationships from offshore waters to the land behind the coastal strip.
  From a management perspective, Coccossis (1996) distinguishes several spatial dimensions which can be identified in the coastal zone:
  - a critical zone or a narrow band of land and sea a few hundred metres wide adjacent to the shoreline, usually of the highest ecological value and subject to intense pressures for development;
  - a dynamic zone which may extend inland and seaward, usually a few kilometres wide, where there is strong dependence and/or influence of human activities and natural processes on coastal features and resources;
  - a wide zone of influence, often several kilometres wide which partly influences, directly or indirectly, the other two zones.

For operational reasons it is suggested that in the first place a broad planning zone should be delineated, while in a next stage a narrower management zone should be defined as well. It is
evident that the planning phase for integrated coastal zone management (ICZM) covers a much wider area than the one that it will eventually be managed.

b) Spanish Legislation

The information has been gathered from different “hard law” legislation applicable in Spain. The legislation ranges from the Spanish Constitution, International Agreements, European Directives, Spanish and Catalan Acts and Regulations developing those Acts related to coastal zone management. When the application of such legislation has created conflicts, the Courts have interpreted the controversial articles in a certain sense and this jurisprudence has also been used. The Court’s judicial precedents are important sources direction on application and interpretation of the law.

On the other hand, the doctrine suggest proposals of solutions or interpretations that makes feasible the adaptation of current legislation to new times and trends. Personal interviews to the competent authorities in coastal zone management in Spain and Local Agenda 21, university professors, researchers and NGOs directors support my hypothesis that the level of real implementation of coastal zone management in Spain needs to be improved. Some definitions used in the report are the following:

- Distribution of competencies:

  Coastal management includes many different institutions with different functional and sectoral competencies within a limited administrative or jurisdictional boundary. In the first place, the 1978 Spanish Constitution (SC) establishes a Democratic State characterised by the division of powers: legislative power, executive power and judicial power. All of them have their own role to achieve an effective coastal zone management.

  In the second place, the 1978 Spanish Constitution establishes a State of Autonomies creating new decentralised Administrations, the Autonomous Communities, which based on the Constitution and their respective Statutes of Autonomies (SoA) have assumed very important competencies in the matter of environment. On the other hand, the local autonomy is not determined by the SC and the SoA but by Law (7/1985 Bases of Local Rules Act). The process of appearance of new Administrations with environmental functions has been closed with the incorporation of Spain into the European Communities in 1986. The 1992 European Union Treaty evidence a great concern for the environment.

  This quasi-federal Spanish system of government causes difficulties for implementing International, European or even National and Regional Legislation. The 1978 Spanish Constitution pre-establishes a “rigid” or “closed” distribution of competencies in different matters to the State and the Autonomous Communities. Each Administration can only intervene within those predefined limits without any possibility legally established to extra-limit them in any case.

  The decentralising process starts when, according to the principle of disposition, the different Autonomous Communities elaborate their Statute of Autonomy. There was different competencies for Autonomous Communities that follow the system for full autonomy or the system for gradual autonomy. The 6/1992 Act tried to narrow differences and homogenised the rules of competencies in the Autonomous Communities. In addition, the system of distribution of competencies established by the SC and the SoA needs to be integrated to what establishes the sectoral legislation, both state and regional.

  In the matter of “environment” there is an added difficulty because such concept has not a clear meaning in the Spanish Constitution. Muñoz Machado points out that while in art. 45 SC “it is managed a broad concept of environment, comprehensive of all the matters, sectors, services o activities related to it”, in arts 148 and 149 SC “each one (or almost all of them) of those sectors or matters receives a singular treatment in order to specify the system of rules regarding distribution of competencies (i.e., land-use and urbanism, public works, agriculture, mountains, mines, waters, historical-artistic sites, health and hygiene, transport, infrastructure).
In arts 148.1.9 and 149.1.23 SC the term environment “has lost its primitive extent and stays as a residual concept”. That is, it is useful for attributing competencies in the matter of environment either to the State, or to the Autonomous Communities, for those cases in which that attribution is not done, individualised, in relation with any type of determined resource in any other clause of arts 148 or 149 SC.

The matter of environment is often conflictive since it is a shared competence. Arts 130R to T of the 1992 European Union Treaty establish that the matter of environment is a shared competence between the States Members and the Community. Arts 148.1.9 and 149.1.23 SC and 10.6 SoA of Catalonia establish that the matter of environment is a shared competence between the Autonomous Communities and the State. Thus, it corresponds in exclusive to the State to pass the basic legislation, while the legislative development and the execution of that basic legislation as well as to pass additional rules corresponds to the Autonomous Communities.

The attribution of title of public domain over some goods to the State does not imply neither the attribution of competencies, at least in a general way, nor the exclusion of competencies of other administrations different to the titular such as the Autonomous Communities or the Municipalities. Thus, there can be concurrence of competencies regulating a variety of activities that use as physical support such kind of public goods. This view is supported by doctrine such as Montoro Chiner and Meilan Gil, and jurisprudence of the Constitutional Court such as sentences 77/1984, 85/1984, 227/1988, 103/1989 and 36/1994.

- Inter-administrative relations and delimitation of competencies:

A Sentence of the Constitutional Court, in 1985, recognises the possibility of concurrence of competencies and proposes co-operation and co-ordination solutions. The 7/1985 Bases of Local Rules Act (BLRA) and the 30/1992 General Administration Procedure Act (GAPA) clarify that interest is a previous fact, real, while the competence is subsequent and constitutes a legal fact, defined by the rule. The requirement for co-ordination and, in general, for inter-administrative relations is, thus, the no suitability between competence and interest: when intervening from a superior Administration there is an influence on a genuine local interest (top-down approach) or when, on the contrary, exercising a local competence there is an influence in broader interests (bottom-up approach). Competencies shall be respected, avoiding the emptiness of the competencies of the respective administrations, and the final decision is made by the competent Administration.

Problems of rigidity characteristic of the Spanish system of distribution of competencies, as well as the question of which institutional level has the prevailing competence concerning the coastal zone, had only been possible to solve, in many cases, as a last resort through the jurisprudence of the Spanish Constitutional Court.

The Constitutional Court has had to proceed to a flexible interpretation of the system, so that it is possible for the public powers carry out the functions that have imperatively entrusted. Both the Doctrine and the Jurisprudence usually distinguish, between the different titles of competence, those generic and specific, those direct and residual, deducing from those characteristics the prevalence of ones over others.

Regarding the 1988 Shores Act, the Constitutional Court has passed the Sentence 149/1991. According to Martin-Retortillo, in any case, through the sectoral and specific titles of competence, which are usually prevalent, it is not possible to practically empty the content of the generic character.
c) Integrated Coastal Zone Management

The sources of information have been “soft law” International Action Plans such as Chapter 17 of Agenda 21 at International (1992 Rio Conference), Mediterranean (1994 Tunis Declaration and 1995 MAP), European (1992 5th EAP), National (Spanish Agenda 21), Regional (Catalan Agenda 21) and Local (1998 Environmental Auditing of El Prat del Llobregat) levels.

There are more specific International Guidelines of ICZM of different international organisations such as the WB, OECD, IUCN, UNEP, GESAMP, EU and EUCC Code of Conduct. Different articles written by different scientists for International Conferences such as the 1993 UN World Coast Conference, the 1993 ECSA Conference, the 1995 and 1997 MedCoast Conference, 1995 CoastWacht Littoral Conference, and the 1998 EUROCOAST Littoral Conference. And different articles published in specialised reviews such as Ocean & Coastal Management, Intercoast, MAP Technical Report Series, and Medwaves. Some definitions used in the report are the following:

- **Integrated Coastal Zone Management:**

The approach of ICZM is based on a paradigm shift from a sectoral to integration in the recognition of the close interconnections of a wide variety of factors in the coastal zone:

  a) **Geographical:** physical, chemical, biological and ecological interrelationships and interdependencies between the terrestrial, estuarine, littoral and offshore components of coastal regions

  b) **Socio-economic:** interrelationships between various existing and projected human uses of coastal areas and resources as well as associated socio-economic interests and values.

  c) **Institutional:** horizontal integration of different administrative departments with the competence or interest of different sectors involved in the coastal zone at the same level of governance. Vertical integration of different administrations with the competence or interest of different functions in the coastal zone at different levels of governance:

    1) **International:** especially applicable to enclosed seas as the Mediterranean or according to the European Union policies.
    2) **State:** setting the overall strategy within a country.
    3) **Regional:** interpretation of state policies in the context of regional coastal zone.
    4) **Local:** detailed rules for the implementation of coastal zone management legislation and principles.

Few ideas and less experience exist for making the concept operational. At national level, few ICZM initiatives have progressed from planning to implementation, and for those that have, a longer time-scale will be necessary to judge their effectiveness (OECD, 1997). This may well be because of a lack of understanding of what is meant by ICZM, especially the term “management”. In addition, no commonly-accepted framework that identifies the elements of ICZM exist; no commonly-accepted set of definitions of the elements of a framework exists; and no commonly-accepted measures exist with which to assess the adequacy of the actions programs produced through the process (Ehler & Brower, 1995).

Notwithstanding, several International Guidelines have developed generic principles and in 1995 the Mediterranean was the first sea to move towards a sustainable development, including ICZM, aimed programme (Mediterranean Action Plan Phase II, part of the 1976 Barcelona Convention). GESAMP (1996) gives the following definition:

ICZM is a continuous and dynamic process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources.
The overall ICZM process comprises two main phases with a set of related tasks, all of which must be carried out to achieve a desired set of goals and objectives, however they are specified:

- **ECOLOGICAL** I _PLANNING AND_  
  - STRATEGIES  
- **SOCIOECONOMICAL** I _MANAGEMENT_  
  - INTEGRATED  
- **INSTITUTIONAL** I _EFFICIENT_  
  - IMPLEMENTATION

GESAMP (1996) proposes the following essential actions associated with each step of the ICZM policy cycle: (see Annexes for a more complete representation of the ICZM process)

<table>
<thead>
<tr>
<th>Step</th>
<th>Priority actions</th>
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<tr>
<td>Stage 1: Issue identification and assessment</td>
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  - Rapidly assess existing conditions  
  - Consult key stakeholders and identify priority issues |
| Stage 2: Program preparation |  
  - Select issues to be addressed and geographic focus  
  - Conduct sustained public education program  
  - Define boundaries of management area  
  - Define management objectives, strategies and actions  
  - Carry out early implementation actions |
| Stage 3: Formal adoption and funding |  
  - Adopt formal management plan and governance process  
  - Secure adequate funding for implementation |
| Stage 4: Implementation |  
  - Construction/operation of infrastructure  
  - Promote compliance to regulations and agreements  
  - Implementation of sustainable development practices |
| Stage 5: Evaluation |  
  - Evaluation of governance process and outcomes  
  - Reassess issues and strategies  
  - Select readjustments to plan and governance process |

It is internationally accepted that ICZM is the tool for achieving sustainable development in the coastal zone. The goal of ICZM is to improve the quality of life of human communities who depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems (GESAMP, 1996).

A consensus set of ICZM guidelines focuses on four operational objectives (Cicin-Sain, Knecht, 1997):

- strengthening and harmonising sectoral management in the coastal zone: prevents needless conflicts, duplicated actions and counter-productive protection/development programmes;  
- preserving and protecting the productivity and biological diversity of coastal ecosystems and maintains amenity values;
promoting rational economic development and sustainable utilisation of coastal and ocean resources;
facilitating conflict resolution of demands over the use of coastal resources.

Iterative process:
ICZM does not offer a blueprint that merely needs to be applied and will then produce known results. The ICZM process is continuous, iterative and dynamic to allow learning and adaptation to new information and changed circumstances, i.e., public preferences and policies, ecological and socio-ecological conditions, new technology, and new scientific understanding.

Monitoring, over a number of years, checks the level of implementation, having an implementation deficit when the intention behind the policy and legislation is not translated into practice. Evaluation has the challenge to recognise new problems, then, policy-makers shall have the political courage to start a new phase of feedback taking the decision to continue the same policy, to adjust it with management arrangements or to finish it and propose new goals: learning-by-doing” processes.

Coastal management programs in a range of developed and developing countries suggest that completion of an initial cycle typically requires eight to fifteen years. Each cycle of ICZM process may be termed a “generation” of ICZM.

The steps of the ICZM policy cycle. Source: Olsen, Tobey & Kerr, 1997

d) Public Participation

The information regarding the general issue of public participation has been gathered from different sources. In the first place, public participation has been analysed from its regulation within the Spanish legal system. Then, the current debate of public participation in the political science field has been reviewed. Finally, some general principles have been identified from experiences of public participation, specifically, in coastal zone management programs in different Western countries such as United Kingdom, Australia and Canada. Some of the definitions used in the report are:

- Democracy:
The 1978 Spanish Constitution (SC) shifts from a Liberal State of Law with defensive systems of the interested citizen of guarantee and individual content, to a Social and Democratic State, which foresees an interrelation State-Society and, therefore, its principles do not allow that the State goes without society for the decision-making process.

In current western democracies, the interrelation State-Society is materialised in a representative democracy, where States are constituted by different political parties, and participation strictly political is channelled basically through periodical active and passive
elections of those parties and the action of political parties (arts 6 and 23.1 Spanish Constitution).

Participatory democracy, instead, promotes the intervention of the citizen in the process of adoption of public decisions (Martinez Quirante, 1995). This intervention of citizens through different mechanisms of public participation act as a tool of guarantee of the substantive rights to which they are linked (in this case objectives towards sustainability of the coastal zone). This means in practice that the rights of participation are presented as guarantee rights that emphasise the procedural aspects of defence of the substantive right (Castellà Andreu, 1994).

Anyway, Sanchez Moron clearly states that participatory democracy is not an alternative to representative democracy and the State of political parties, but a complement or a partial corrective of representative democracy.

- Public participation:

Public participation embraces the following abstract idea: "it is a way of the Administration to get closer to the citizen, tending to create plurality in the channels of relation between one and the other, to allow a greater and more diversified influence of society in the elaboration of public decisions and to permanently contrast the options of the Govern and Administration with the social interests in presence" (Sanchez Morón, 1992). From this abstract idea, participation can assume different objectives and ways that imply a different degree of involvement of citizens.

An analysis of public participation in the ICZM process shows that public participation has the following characteristics:

1) In general, voluntary measures such as participation should not replace regulation, but should only be introduced when they demonstrate a greater degree of potential effectiveness (Hull, 1994). It is important to establish the right mix of implementation tools.

   The persistent deterioration of the environment has shown, in recent years, that legislation and regulation as well as technological solutions cannot solve alone all problems. It is accepted that the new approach of environmental management will increasingly involve simultaneous use of economic and fiscal instruments (i.e., positive and negative incentives) as well as voluntary measures (i.e., voluntary cooperation of citizens in all the stages of the policy cycle; environmental agreements) with the purpose of modifying unsustainable lifestyles.

2) Participation is not only a task for authorities and politicians. All sectors of the community should be encouraged to participate in the process, including: women; children and youth; indigenous people and their communities; NGOs; local authorities; workers and their trade unions; business and industry; the scientific and technological community; and farmers.

   These different actors should well-represent economic, environmental and social interests. Citizen participation should be active and full making people being the real protagonist in every field affected by.

3) Participation should be done at every level of governance (international, European, state, regional and local). The bottom-up approach, specifically, has the role of narrowing the gap between the State and Local Authorities, between the Government and Society, and between Scientific and Traditional culture.

4) Participation of stakeholders should be done continuously at every stage of the an iterative policy cycle: from the early stages of proposal, assessment of strategies and decision-making; co-ordination, management and monitoring its implementation; and evaluation of the environmental quality achieved and feedback for adjustments of the original strategies.


**e) Local Agenda 21**

The starting point of the formal entry of local authorities into the international sustainable debate was marked by the 1990 World Congress of Local Governments for a Sustainable Future (WCLGF). The conference gave birth to the International Council for a Local Environmental Initiatives (ICLEI), which has itself played a dynamic role in promoting Local Agenda 21 efforts and facilitating information exchange. The creation of Local Agenda 21 is a recommendation of Chapter 28 of Agenda 21 Action Plan. The UN HABITAT II, held in Istanbul in 1996, allowed for the first time local authorities to be key partner alongside governments. Today, some of the outstanding examples of sustainable communities are honoured in the Habitat Best Practices Award.

At the European level, the issue of sustainable cities was included in the 1992 5th EU Programme on Environment and Sustainable Development and several declarations have been agreed: Declaration of European Cities (Amsterdam, 1993); the Charter of European Cities and Towns Towards Sustainability known as the Aalborg Charter (Eurocities Conference 1994 and 1996 in Lisbon), which included a Sustainable Towns and Cities Award. Many Spanish municipalities have joined as well city networks such as Eurocities and Medcites. The information regarding Local Agenda 21 has been gathered from the mentioned Charters and their local initiatives best practices. Some of the definitions used in the report are the following:

- **Subsidiarity principle:**
  The principle of subsidiarity (art. 3B.2 1992 Maastricht Treaty) is the general principle for delimitation of competencies at European level. Unlike the "rigid" or "closed" Spanish system of distribution of competencies, the European system delimit the competencies in a "flexible" or "open" manner. Arts 130R to T do not proceed to make a general distribution of competencies, but they determine in each concrete case the competent Administration, between those Administrations that have general attribution of competencies over the same matter. The competent administration will then concrete with greater protection the "minimum measures of environmental protection" stated in the EC Treaty.

  The Subsidiarity Principle recognises a new role of local authorities stating that the European Community takes action only if and in so far as the objectives of the proposed action cannot be adequately met at national, regional or local level and be better achieved by the Community. This definition is quite vague and can be interpreted in a number of different ways.

  The Maastricht Treaty interprets the subsidiarity principle vis-à-vis local authorities in al least three respects:

  - **policy implementation**: local authorities are protagonists as partners in the implementation of the EU legislation, programmes, and projects. Environmental policies shall be implemented decentralised at the lowest possible level of government where it still can be done adequately, taking into account the optimal scope and work capacity.

  - **direct links with European Commission services**: financial instruments and other EU mechanisms provide for direct communication between municipalities and the European Commission in Brussels;

  - **city jurisdictions empowered**: the competence of cities to set their own environmental policy is given a firmer footing in EU law.

When environmental action is considered to be more effectively carried out from a supra-local level, this action is susceptible of control of not emptying local competencies through a double perspective: the principle of proportionality (art. 3B Maastricht Treaty) and the prohibition of arbitrariness (art. 9.3 SC).
The 1992 5th EU Environmental Action Programme links the subsidiarity and proportionality principles with the broad concepts of share responsibility, complementarity of projects and the need for co-operation between the different levels of authority.

The commitment of shared responsibility in the Member States addresses the need of greater dialogue between main partners involved in specific environmental problems in order to solve them or to prevent new ones from arising. Partners can either be different levels of government, as well as enterprises and development interest, and the public such as environmental NGOs. Each of them have to play an active role in the delivery of the results required without, however, calling into question the established division of competencies.

- Local autonomy:
  After the 1978 Spanish Constitution, the local administration, municipalities (art. 140 SC), represents a further step for decentralisation of the State. Local competencies are not concretised in the Spanish Constitution nor by Statutes of Autonomy, their indispensable minimum content is established in the 7/85 Basis of Local Rules Act specifies the local competencies (arts 25.2, 26 and 28 for the matter of environment).

  The 1985 European Charter of Local Autonomy basically summarises the concept of local autonomy in two principles: democratic principle - in the sense that the local level is where democracy is experienced more direct and intensely (art. 23.1 SC), and decentralisation - it implies the approach of the management of services to its addressees (art. 103.2 SC). Spain ratified this Charter in 1988.

  The local competencies mentioned in the 1985 BLRA is more specified by sectoral legislation (State or Regional), which attributes competencies to local authorities. This sectoral legislation graduates, for each concrete matter, the scope of local competencies is according to the existing relation between local and supra-local interests within such matters.

  The original idea would be that when a municipal interest becomes apparent the legislation (state or regional) attributes to the Municipalities the corresponding competencies. According Esteve Pardo, this objective is very difficult to materialise in practice in all the cases and local competencies require co-operation and assistance from supra-local authorities:

  1) because it is very frequent the concurrence around the same material reality of local and supra-local interests (the specific competence of environment is shared arts arts art. 130R to T Maastricht Treaty, arts 148.1.9 and 149.1.23 SC, art. 10.6 Catalan Statute of Autonomy and 25.2 of 7/1985 BLRA). This could be solved to certain extent attributing different fields of competence over the same matter to several Administrations, though often overlapping, responsibilities for environmental concerns.

  2) because even though certain suitability between interests and competencies could be reached, in the matter of environment the general interest, supra-local, is evident and frequently it is necessary to operate over fields and perspectives that exceed the local orbit. Not only the infrastructures required for environmental protection go beyond the local scope, but also the increasing technical complexity and the high costs of activities and infrastructures have largely exceeded the means of local entities.

  This attribution of competencies shall be based on the principle of diversity, taking consideration of different parameters fixed by art. 2.1 7/1985 BLRA: characteristics of the public activity in question; the capacity of management of the Local Entity; decentralisation; and maximum proximity to the citizen. Thus, Spanish municipalities are far from being homogenous, having a wide range of different characteristics, powers and competencies according to the principle of diversity. Certainly this is the case in respect of their work in protecting and enhancing the environment.

  Even if the Regions can modulate the framework of municipal autonomy, they cannot, however, modify or derogate what is stated in the 1985 Law of Basis of Local Regime, which
empower the municipalities to exercise competencies in environmental issues. The sectoral decision-maker shall respect the essential core, a minimum of content of municipal competence that, on the base of the autonomy recognised in the Spanish Constitution to local entities (arts 137, 140 and 141 SC), always shall stay on the hands of these ones.

In any case, the trend of deprivation of local competence over many matters related to the environment it is to be balanced with a reset of the presence of the municipality and other local agencies in higher levels of governance.

- Local Agenda 21:

AGENDA 21 is one of the documents approved and adopted by government representatives of the States assistant to the United Nations Conference on Environment and Development (Rio of Janeiro, 1992) designed as a global Action Plan with the aim to face the most critical challenges for humanity today. AGENDA 21 is a guideline not legally binding, but that shall inspire both governmental and private policies, as well as individual options, throughout the XXI century.

As the popular expression says: Think global and act local, many of the steps towards sustainable development have to be taken at local level. This is justified because not only many environmental problems have their roots in local activities, but also local government is the closest to citizens that first perceive environmental problems, which might have many solutions. Decentralisation can also take much into account the local conditions for implementation of environmental policies. Thus, AGENDA 21 guidelines should be translated and adapted to the situation on the local level in countries all over the world. The elaboration of such local action plans is the Local Agenda 21.

Chapter 28, AGENDA 21 states that: “By 1996, most local authorities in each country should have undertaken a consultative process with their populations and achieved a consensus on a local Agenda 21 for the community”. An analysis of the literature about Local Agenda 21 shows that the key elements of Local Agenda 21 are the following:

1) Holistic perspective: even if local problems should be the basis of Local Agenda 21, the municipality must take and holistic and global approach following the formula of “think globally, act locally”. Nature and socio-economic activities can be regional or globally interdependent implying that the changes made in one place can affect directly or indirectly other places.

2) Long-term perspective: decision-makers should decide for a longer perspective than just the period for which they are elected. Planning should consider equity issues: the maintenance of critical stocks of natural resources, ecosystem processes and environmental qualities are goals that transcend the present and require consider the benefits and opportunities that should be available for future generations.

3) Cross-sectoral and inter-sectoral approach: the formation of local Agenda 21 should be treated as one issue but integrating, through a cross-sectoral and inter-sectoral approach, all the activities carried out by the municipality and other activities carried out by other levels of governance but influencing local aspects.

4) Grass-roots participation: the process should emerge from a democratic process that welcomes voluntary participation by all sectors of the community at all the stages of the policy cycle. New direct and instituted spaces and channels of continuous dialogue that makes easy and speed up bi-directional communication citizens-Administration need to be found. There should be commitment both on the part of council officers and community members.

5) Search for innovative ideas: many municipalities have specialised in solving one or a few particular problems and their experiences can be used by other municipalities. Close networking of local authorities can help to easily share ideas and experiences.
METHOD

The method used in this report is system analysis through conceptual models of causal loops diagrams. These causal loops illustrate the dynamic interrelations between different actors of the system by identifying such actors, their interrelations and effect (i.e., positive or negative, direct or delayed). They help to understand how the coastal zone management system “behaves” in different scenarios with different strategies and, thus, have a holistic view of the problems and solutions analysed.

The next step of system analysis would be to build a model using measurable indicators for each actor and equations interrelating those actors. The model illustrates through different graphs the resulting predictions, for a certain period of time, of the changes experienced by the system in different scenarios. Those graphs make easier to compare the results, to make a careful analysis, and to conclude which scenario is the most sustainable.

It is very important to bear in mind that the causal loops diagrams are specifically focused on the objectives and scope stated in this thesis report. The limitations of these conceptual models are basically that:

- The number of actors taken into account are the minimum essential to understand the system dynamics. There may be other internal and/or external actors influencing the system such as natural causes of environmental degradation.
- Some assumptions are made in order to explain controversial cause-effect relations. Different theories are though discussed.
- The existing and proposed legislative solutions are based on few specific implementation mechanisms. It is important to establish the right mix of such implementation mechanisms with other existing tools in order to get the desired effect of legislation.
- The patterns of behaviour described by the causal loops will be probably different for different interests groups and/or societies and/or as a society evolves over time. Those different patterns vary according to different values in different interests groups and/or as societies evolve over time.

The value of the results got from the causal loops diagram need to be assessed in the light of the mentioned limitations. The discussion goes beyond the limitations of the causal loops diagrams and interprets both each of the interrelations within and between actors of the system and other interrelations between internal and external influencing actors of the system.

The next step of this study would be to carry out the proposed theory into practice and to use the proposed indicators to measure the results.
This causal loops diagram describing environmental problems consist of an initial high quality "state of the environment", which makes possible the factor, "priority of economic growth" intended to increase the "socio-economic conditions" in the short-term. At the same time, "priority of economic growth" accelerates the rate of change in a certain sub-system of the coastal zone causing in the long-term a decrease in the "state of the environment". This last consequence ripples through the entire chain of causes and effects in the whole system: going beyond the limits of the "Earth's carrying capacity", decreasing the "state of the environment", decreasing the "socio-economic conditions", until the initial cause of change eventually becomes in the long-term an indirect effect of itself, "negative economic impact". This process is called feedback loop.

a) The coastal zone: desired by a wide range of human activities

The coastline is extremely varied, supporting a wide range of habitats that includes islands, mangrove forests, coastal wetlands, dunes, sea beaches, cliffs and rocky shores, coral reefs, estuaries, bays and the marine zone. The dynamic processes such as daily tides, tidal flats and storm waves makes those habitats unique. These characteristics makes them susceptible of different human uses:

<table>
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<tr>
<th>SECTORS OFTEN COASTAL OR OCEAN SPECIFIC</th>
<th>SECTORS RARELY COASTAL BUT HAVE IMPACTS</th>
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<tbody>
<tr>
<td>1. Navy and other national defence operations</td>
<td>1. Agriculture-Mariculture</td>
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<td>2. Port and harbour development (including shipping channels)</td>
<td>2. Forestry</td>
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<td>3. Shipping and navigation</td>
<td>3. Fish and wildlife management</td>
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<td>4. Recreational boating and harbours</td>
<td>4. Parks and wildlife management</td>
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<td>5. Commercial and recreational fishing</td>
<td>5. Education</td>
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<td>7. Tourism</td>
<td>7. Housing</td>
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<td>8. Marine and coastal research</td>
<td>8. Water pollution control</td>
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<td>10. Transportation</td>
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<td>12. Oil and gas development</td>
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<td>13. Mining</td>
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</tbody>
</table>
14. Industrial development
15. Energy generation


a) Much of the Spanish marine fish catch comes from coastal waters because coastal habitats serve as important nursery, feeding and spawning areas for many species of plants and animals and, thus, natural habitats are highly productive and biological diverse systems. Lower wetlands collect and store dissolved mineral nutrients; plant tissue is washed out into coastal waters. This highly productive ecosystems are extremely important for the conservation of biodiversity. Estuaries, wetlands and marshes serve as important feeding, roosting and nesting grounds for many species of birds. They are also nursery grounds for the species that comprise the coastal fisheries (UNEP, 1995).

b) The Mediterranean is the leading tourist destination world-wide and 90% of the tourists travelling to the Mediterranean are heading for French, Spanish and Italian coasts (Rigg, 1997). There are many areas are of outstanding natural beauty: the presence of steep physical gradients in the coastal zone results in much greater biodiversity than in terrestrial ecosystems; in addition, the characteristic climate, the relief, and the soil makes the Mediterranean basin one of the most original biogeographic regions in the world. As a resource, the presence of wide gently-slopping, fine sand beaches sandy are of extreme importance to recreation and tourism activities (UNEP, 1995). Tourism is also attracted by cultural heritage, traditional lifestyle, good climate and all the attendant local infrastructure (i.e., hotels, places of entertainment, good sanitary installations, banks, post offices, shops, tennis courts, golfs clubs).

c) Those industries preferring the coastal zone as location generally do so because of a market need for cooling water or for receiving water for wastes created by the industrial processes involved, the inland rivers and water bodies being already over-used, over-protected for their flora and fauna or with too low capacity to dilute and transport away the generated heat or waste quickly enough. Power-generating plants are often established along rivers or in the coastal zone for such reasons. Desalination plants, by definition, are sited at the coast; besides heat, they may discharge hot brines which modify the local ecosystem.

d) Agriculture is not itself a predominant economic activity in this narrow zone. Food supply from domestic agriculture is falling behind population growth in the basin; agricultural growth is also falling behind that of industry and of economic growth in general. Nevertheless, the coastal zone is one of the most fertile soils.

e) The Mediterranean population has always been constrained in its physical expansion by its mountainous terrain, except for a few major river basins, so that human settlements have historically been concentrated in ports, either because of the difficulties of exploiting nearby mountainous terrain or because of the need to transport and trade the products of the hinterland (river basin) to other countries or quasi-landlocked towns and cities elsewhere along the coast. Currently, a major indirect effect of tourism is urban development. Major urban centres have therefore grown around the original coastal settlements and ports.
f) The varying abilities of countries to produce articles of commerce, be they agricultural, industrial, medical or social, underlie the need for ready transport. Transport is the corollary of coastal urbanisation and industry, That explain why usually running parallel to the growth of GDP, demand in the transport sector has been growing steadily since the 1970 (Rigg, 1997).

Whereas maritime transport of hydrocarbon on global basis is 36%, the comparable value in the Mediterranean is 50%. There are several increasing trends in the structure and operation of world manufacturing and trade that suggest that there will be an increase in the transport, by ship, of more or less hazardous substances, hence in the risks to which the marine environment will be exposed. Shifting industrialisation in the Mediterranean from the norther to the southern and eastern countries will emphasise the need for improved harbour facilities, and ship movements will undoubtedly increase in the future (Grenon and Batisse, 1989).

g) The amount of waste generated by human society is generally a direct function of its population size and industrial development, although the nature of a society and its industry may determine the nature and quantity of the waste produced. Waste disposal is an important use of sea in the Mediterranean basin. It is estimated that 80-85% of the overall pollution load in the basin is attributable to land-based sources due to the fact that coastal waters act as the ultimate sink for the disposal of pollution originated from land.

Industrial waste and air pollution and domestic sewage and litter are the most significant point sources, and the main dumping or depositing routes are direct discharge, normally through coastal outfalls, and indirect discharge via rivers, themselves discharging to the sea. Agriculture is a diffuse source of pollution more difficult to control. Different wastes have different degrees of hazard.

h) The principal factors for increasing demand in fresh water resources have been irrigation (i.e., for agriculture, golf courses) and domestic consumption due to increasing population and affluence. Water quality varies considerably locally. River basins and aquifers in the Mediterranean are relatively small and uneven because of the broken geomorphology of the Mediterranean basin.

i) Recovering energy from the sea is a long-time dream of marine scientists. Today several technologies look attractive: ocean thermal energy conversion (OTEC), tidal energy conversion and wave energy conversion. The schemes have been the foci of many international meetings, books and articles; yet they remain, to a large extent, unfulfilled expectations. All require high capital investments. Nevertheless, there is the hope in the minds of many that engineering advances or social needs will bring them into being in the near future.

j) Natural features of the coast also function as natural buffers against the sea, storms, flooding and erosion. Upper wetlands contain salt tolerant plants, capable of withstanding flooding by tides and have, at the same time, a considerable water retention capacity. That makes them play an important role in the regulation and maintenance of river flow.

Natural beach processes and dunes create natural defences against attack by waves, currents and storms. The sloping near-shore bottom causes waves to break offshore, dissipating energy while rushing up the beach foreshore up to the ridge or crest of the berm. The upper flat beach is only reached by storm waves.

This is an important benefit given the long-term changes in climate and the
predicted sea level rise, which may contribute quite significantly to the vulnerability of coastal communities to adverse environmental conditions and impair the sustainable development of coastal areas.

These human activities represent the highest rate of economic growth than elsewhere, which attracts increasing population. During the past decades the coastal population throughout all Mediterranean countries has experienced tremendous increase. In particular, the strip from Languedoc-Rousillon to Andalucia reveals the highest growth rates. According to Goldberg and other authors, population comes from different places and reasons:

a) *Rural exodus*: movement to rural areas to towns and cities. It is common that young people search for economic opportunities in the coastal cities, since low-skill jobs, basically related with tourism, are provided, usually leaving behind more elderly people. More than half the coastal population of Mediterranean countries live in urban areas. Whereas urban areas make up 2% of the European Community’s land area, they now occupy 8% of the 5 km coastal strip (CEC, 1991). 75-80% of the future Mediterranean population will be living in urban areas.

b) *Inland exodus*: contrary to traditional practice, where people located inland, people now prefer to live and work near the coast. A reason can be that the hinterland mountainous or plateaux are relatively unproductive for agriculture. As agro-industry, modernised and intensified since 1970, has developed in the main river valleys and plains, although not without competition from urban and tourism development.

c) *Intra-regional migration*: there is a significant migration of nationals from North African countries to Spain, Italy, France (Grenon and Batisse, 1989). These citizens seeing a better quality of life (housing, employment, medical services, educational opportunities, and recreation) on television, in the cinema, on the printed page, etc. especially a better life in countries just separated from their own by a strip of water, will have a strong compulsion to join the migrant force. Because the coastal zone in general offers a higher quality of life and is more easily accessible than inland areas, it attracts migrants.

d) *Human activities and economic sectors*: to the extent that it offers employment. The coastal zone offers oceans biological and other resources for fisheries and industry, marine transport routes for communication, as well as its potential for recreation and tourism.

f) *Seasonal, though perennially persistent, tourism*: the increased expectations of world citizenry to travel, coupled with increased leisure time and financial resources, support this human mobility. The coastal zone with its many beach and water activities and ready availability of seafood accommodates a substantial portion of touristic activities. Tourism growth is not equally distributed among countries. At present more than 80% of international tourism in the Mediterranean is accounted for by France, Spain, Italy and Greece, probably because of the relative political stability, a sound economy and increasing leisure time compared to the rest of Mediterranean countries. Within these countries, tourism is concentrated on the already densely-populated coast. The scale of the seasonal tourist influx is often enormous compared with the permanent residential populations of the islands, towns and, villages affected.
b) The coastal zone: limited by scarce coastal and marine space and long-term renewable and/or finite resources

Prelude to conflict is based on a clear fact: the land and sea areas are essentially fixed in size but the population seeking to live and work there is continuously increasing. Indeed, although the coastal zone covers less than 15% of the Earth’s land surface, this is where the majority of the world’s population lives and works. In Spain, 35% of the total population (13,679,750 inhabitants), adding 82% over 50 million visitors per annum, occupy 7% (8000 km of coastal land) of the total land area and 54% (21,201,000 inhabitants) lives in a littoral strip of 50 km (Eurostat, 1995).

The history of the coastal zone is one of continuous transformation by human activities. Traditional agriculture, fisheries and shellfish activities have been undertaken for centuries and form part of the cultural and country landscape tradition of the coastal zone. These activities were relatively integrated into the natural environment, that is, development was at a rate comparable to that of long-term environmental mechanisms that support a dynamic equilibrium state of the environment.

In the second half of the XX century, new activities non-coastal specific such as infrastructures, industries and urbanisation were developing. In Spain, more than 50% of the Mediterranean coast has been given over the intensive housing, industrial and tourist development substantially modifying the traditional landscape (CEC, 1991). The rate of change in the coastal zone accelerated with the intention to lead to increased short-term economic growth and improving standards of living. However, many of these changes in the coastal zone also threaten the traditional agricultural and fishing activities, which are being replaced by activities which have a larger impact on the environment.

Modern development is putting in danger the stability of the system. While long-term development takes into account both future generations and ecological limits. Short-term development test the elasticity of Earth’s carrying capacity. The limits of the Earth’s carrying capacity are uncertain, but experience shows that environmental damages can be even global and irreversible (i.e., natural resources are finite).

In most of the cases, environmental impacts are caused by cumulative pressures of uncoordinated industrial, tourism-related, fishing and agricultural activities having unforeseeable and generalised consequences. Each economic sector generates a range of impacts on various coastal and marine resources, but their combined environmental impacts generate acute problems (e.g., marine and freshwater pollution, loss of natural land resources and land degradation, etc.) for the resource base on which their survival depends. Natural risks and hazards, such as climatic change, earthquakes, forest fires and floods, pose additional hazards to coastal areas.

c) The coastal zone: fragile and vulnerable

A healthy natural coastal system should be resilient enough to cope with natural hazards that could result from natural climate variability as well as conserve the natural capability to adapt to changes, including man-made stresses. Unfortunately, coastal zones are relatively fragile ecosystems being often least able to assimilate neither great natural risks nor intense human activities, and where adverse effects are more apparent.

The ecosystem can experience either immediately visible changes, gradual changes in the state of the environment, or any changes at all. Not all the environmental and social impacts appear at once. Some driving forces are likely to be important over long-time scales (i.e., climate change, population growth and the consumption habits of society), and others such as those associated with the governance process, conflicts among user groups and current social, economic and environmental conditions (i.e., sudden natural episodic events or man-made disasters) have more immediate concerns (GESAMP, 1996).
The severity of effects of pollution on coastal resources will depend on the composition of the pollution (i.e., nutrients, toxic substances), their quantity and level of concentration, and on the geo-physical, hydrological, chemical and biological conditions determining the resilience of the recipient waters.

Upper wetlands contain salt tolerant plants store nutrients and organic detrius reducing, thus, nutrient and organic matter pollution of the aquatic environment. The Mediterranean sea, however, is particularly sensitive to pollution because its "assimilative capacity" is limited. There is very little tidal movement so exchange between inshore and offshore areas is limited. Within the sea, waters are stratified. Finally, there is little exchange of water with the Atlantic and so the capacity to flush pollutants from the system is restricted. It takes about 80 years for the water to circulate. Vertical mixing of Mediterranean waters takes around 250 years (UNEP Blue Plan).

Furthermore, the Mediterranean is naturally poor in nutrients. In these circumstances, injection of nutrients such as nitrates and phosphates by way of poorly treated sewage and agricultural run-off has an especially marked effect on the marine ecology through eutrophication.

Of all the problems facing the coastal environment, however, habitat loss is the most important. The Mediterranean basin has a great variety of natural habitats, but they comprise a small surface area and present a regression since some decades ago. During the last 50 years Mediterranean as a whole has lost one million hectares of wetlands. It is estimated that around 75% of the dunes of the southern EC countries have been lost since 1960 (CEC, 1991). Mediterranean wild life and plant life is also very varied and a number of plant associations are relicts. However, more than half of these species are endemic, which are very sensitive to degradation.

The physical need for space is the main irreversible impact of different socio-economic sectors. Whereas, point source pollution is a reversible impact that can be reduced with efficient control-pollution at source or collected and treated waste before safe disposal through wastewater treatment plant. And even flood hazards and erosional processes moving back the coastline can also be reduced with "soft engineering". Land occupation by an activity usually excludes any other space consuming use in that space.

Transportation facilities have extensive spatial requirements using up valuable agricultural and horticultural land, for a long time if not permanently, local flora and fauna and impose ecological barriers on the land crossed by them. They also impose constraints on the use of land around them by disrupting hydrology patterns causing erosion and sedimentation, by creating areas exposed to noise and heavy vibrations, air and water pollution. Finally, roads also lead inevitably to growth in urbanisation.

Ecological barriers leads to the fragmentation and/or isolation of local habitats or even habitat loss, which inevitably leads to disruption of migration patterns in the vicinity of the infrastructure causing both irreversible loss of biodiversity (inter-specific and ecosystem) and the genetic variation within species (intra-specific). Extermination of species implies loss of potential medical, educational, historical, recreational, and scientific value (Clark, 1998). Impossibility of intra-specific variation implies closing the foodstuff of evolution and contribution to a population’s resilience to disease, changing climate and ecological disturbance.

d) Final feedback: obtained results by the wide range of human activities

The general public are the ones to bear indirectly the social costs of environmental degradation, while the economic profits and benefits of some activities over-exploiting "common property" coastal resources are confined to minorities. This situation creates high intra and inter-generation equity conflicts: the present generation would suffer social costs such
as can be destruction of historic sites and landscape and negative impacts on human health, while the future generation would need to find solutions to overcome to the reduction of opportunities for economic development.

In the long-term, the use conflicts inevitably arise among users and potential users when the diversity of human activities competing for limited space and resource use become incompatible. Being a healthy environment the support of economic activities, short-term economic growth over-exploiting the coastal and marine resources not only degrades the environment, but also causes a long-term negative economic impact by excluding a multiple use of the coastal zone. For example, while industry and energy facilities can degrade the environment for all other activities, tourism will not flourish if the area loses its attraction to visitors, and fisheries are usually on the receiving end of everyone else's problems.
This system including the current “reactive” solution “behaves” as a loop positively reinforcing the initial factor of change “priority of economic growth”. When the “Earth’s carrying capacity” decreases, a “sectoral and top-down intervention” is implemented, which results in “transferring pollution”, decreasing the “state of the environment” and negatively reinforcing the previous chain of reactions. The results are worse “socio-economic conditions” representing “higher equity conflicts” for the present generation and worse “negative economic impact” for the future generation.

a) Spanish coastal zone management legislation: relatively complete

The 1995 Communication of the European Commission to the Council and Parliament about Integrated Coastal Zone Management recognises that a relatively complete body of legislation and instruments regarding coastal management already exists which, if applied, should help to protect the coastal environment:

a) Regulatory framework for the basic procedure of administration in the environmental issue:

- art. 45 SC: “Everyone has the right to enjoy a suitable environment for personal development, as well as the duty to conserve it. Public powers will watch over the rational utilisation of all natural resources, with the aim of protecting and improving quality of life and defending and restore the environment, supported by indispensable collective solidarity.”
- art. 132 SC: The environment as a “public good”. Water and the Maritime-Terrestrial as a “public domain good” (Public Administrations tutors its protection).
- Control by private entities through different jurisdictional order:

| CIVIL | ♦ popular action is not established  
| ♦ the acting party should accredit legitimate interest  
| ♦ competencies in matters of environment: vicinity relations; abuse of right; contractual relationships; damage caused by fault or negligence or extra- contractual damage. |
| PE | ♦ popular action is regulated  
| ♦ action of physical persons and parallel to the action that the Fiscal |
b) International Agreements with incidence on the management of coastal areas:

- Agreements on Conservation on Nature/Biodiversity

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<th>Policy instrument (Agreement in force)</th>
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- Agreements on sea protection:

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<tr>
<td>Agreement for the Protection of the Mediterranean Sea against Pollution.</td>
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c) European Legislation with incidence on the Management of coastal areas:

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<th>Act</th>
<th>Date</th>
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<th>Act</th>
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<td>Council Resolution 73/29/EEC, on the Protection of Coastal Areas</td>
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<td>Council Regulation 1973/92/EEC which creates a funding for the environment (LIFE)</td>
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<td>Council Directive 76/169/EEC relative to the Quality of the Bathing Water</td>
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<td>Council Directive 76/464/EEC relative to the Pollution caused by certain Dangerous Substances Dumped in the Aquatic Setting of the Community</td>
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<td>Council Resolution, 1978, which adopts a EC Action Programme in Matters of Control and Reduction of Pollution caused by the Dumping of Hydrocarbons in the Sea</td>
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<td>Council Directive, 1979, on Quality required of Shellfish Waters</td>
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<td>Council Regulation 170/83/EEC, by which a Community System for Conservation and Management of Fishing Resources is constituted</td>
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<td>Council Regulation 4254/88/EEC, on the European Regional Development Fund (jointly with the Disposition of Application of Regulation 2952/88 relative to FEDER)</td>
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<td>Council Regulation 1210/1990, which creates the European Environmental Agency and the European Environment Information and Observation Network</td>
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<td>Council Regulation 563/91/EEC relative to a Community Action aimed at Protecting the Environment in Mediterranean Region (MEDSPA)</td>
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<td>Council Directive 91/976/EEC relative to the Protection of Water from Pollution caused by Nitrates used in Agriculture</td>
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<td>Council Resolution 93/C/138/01 5th Environmental Action Plan</td>
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<td>European Commission Communication on Integrated Coastal Zone Management COM (95) 511; Report about the evolution of the demonstration programme concerning ICZM COM (97) 744</td>
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d) Spanish State Government Legislation with incidence on the coastal management. Autonomous Community Legislation is not mentioned because each of the seventeen Spanish AACC have their own legislation:

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<thead>
<tr>
<th>Act</th>
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<th>Modifications</th>
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<tr>
<td>1970 Hunting Act</td>
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<tr>
<td>22/1973 Mines Act (modified by 54/1980 Act)</td>
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</table>
b) Spanish coastal zone management legislation: unsatisfactory implementation

It is important to make distinctions between hard law, soft law and actions plans: while "hard law" is the formal adoption by governments of binding international environmental policies, "soft law" is the attempt of governments to preserve flexibility by softening proposed policies into non-binding principles, standards, and guidelines. "Action plans" are consensus documents that guide national development policies with respect to environmental protection.

The 1995 Mediterranean Action Plan Phase II foresees the adoption of ICZM Programmes. However, action plans, like soft law, are not legally binding (eg, with the force of binding deadlines or the fear of sanctions for failing to act), but they often presuppose international movement, eventually, towards binding policies. Instead of tough sanctions, the principal tools of international implementation are gentle persuasion and embarrassment caused by media exposure of non-compliance, in the respect of State sovereignty. Therefore, soft law can only be effective nowadays if there is a strong citizen awareness of the environmental problems and regulations that can make persuasion and embarrassment be strong tools towards implementation.

The 1992 European Union Treaty evidence a great concern for the environment and, as distinct from international organisations such as the United Nations or the OECD, the EU has a legislative body whose acts are binding "hard law".

The implementation of the EC environmental legislation may be said to comprise three components. First, it entails the transposition into national law of Community directives by means of introducing and adapting national policies, legislation and administrative mechanisms to conform with EC law. Second, this formal legal transposition should lead to practical results and measurable impact. Hence, implementation entails more than merely the adoption of national legislation, even where it reflects perfectly the obligations contained in a directive (Haigh, 1986a:4). Finally, enforcement and monitoring mechanisms should exist to ensure that implementation is accurate and complete (Collins & Earnshaw, 1993).

Theoretically EU legislation can be enforced upon Member States. The Commission, which supervises implementation of EC norms, has both formal and informal enforcement means at its disposal, including taking action before the European Court of Justice. In practice, however, there are neither inadequate reporting requirements for member states and monitoring relies almost entirely, therefore, on outside complaints, essentially from individuals or environmental
groups. Nor sanctions (other than political) for the failure to comply with a judgement of the European Court (Hull, 1994).

The 1980s have witnessed a dramatic increase in the volume of infringement proceedings brought by the Commission for members' non-implementation of EC environment legislation. In spite of the enormous impact of Community law in Member States, which formally transpose EU Directives, there remain delays and failures in implementing EC law (Kiss & Shelton, 1993). Therefore, the effective practical implementation of obligations arising from Community environment directives gives undoubtedly greatest cause for concern.

The EC COM (95) 511 on ICZM also recognises that the practical implementation of obligations arising from environmental obligations are not as effective as it could be due to unsatisfactory co-ordination between the many parties influencing the development of the coastal zone. The implementation of the EC legislation in the Member States shall respect their national legal frameworks and distribution of competencies.

Human activities, either within or outside the defined coastal boundaries but affecting the coastal zone, are regulated by different Spanish policies competence of different administrations. Those administrations need to be co-ordinated (principle of integration and prevention in art. 130 R Maastricht Treaty). The Spanish administrative structure has no “Coastal Authority” co-ordinating all those concurrent competencies. But the 1988 Shores Act, art. 116, foresees different mechanisms of different co-ordinating level: from consulting, mutual notifications, joint proceedings, reports, financial agreements to planning participation, which is considered the most perfect and intense co-ordinating technique and possibility of popular action.

However, delimitation of competencies is not an easy task. All the Sentences dictated by the Constitutional Court in the matter of coasts, i.e., sentences 149/1991 and 40/1998, had to deal with conflicts of competencies of administrations fearing the emptiness of their respective competencies. The difficulties in the delimitation of competencies related to coastal management are the following:

a) Some of the conflicts of competencies are derived from the fact that responsibility for coastal management had been the responsibility of the regional governments since 1978 but the passing of the Shores Act in 1988 granted coastal management responsibilities to the State government for coastal and marine areas. The regions, however, continue to claim jurisdiction down to the Low Water Mark (LWM) and the Courts have so far failed to solve this boundary dispute (Cicin-Sain and Kenecht, 1997).

b) The 1988 Spanish Shores Act focus coastal management within the limited physical space of the maritime-terrestrial public domain (art. 132 Spanish Constitution):
   1) There is lack of homogeneity of the different goods that integrate the maritime terrestrial public domain and, therefore, also the legal rules applicable to them. Because of public domain represents the major intervention in the sphere of the citizens, the question of what constitutes common property versus private property is always a problem. In other cases, is the lack of financial means that impedes the State to recapture from private hands all the flood-prone areas and wetlands as public domain.
   2) Because the Administration of the State is titular in exclusive of such public goods (art. 132 SC and art. 339 Civil Code), it has inherent faculties. Garcia-Trevijano Garnica considers that there is not a clear division line between what constitutes State competencies based in arts 149.1.1 and 149.1.23 SC and what are just faculties derived from the State title over such public domain. In any case, those faculties are only justified to facilitate the achievement of general interest.
3) There are a variety of activities (coastal and non-coastal specific) that use as physical support such kind of public goods. The 1988 Shores Act recognises the existence of other general interests in the coastal zone not regulated by this Law, and, thus, that over a same physical space, such as the coastal zone, concur the competencies of different Public Administrations or the agencies of one of them, over either the same or different matter.

At the same time, art. 119.2 Shores Act states that all the Public Administrations are bind by legal mandate to respect, and fulfil, or at least not to damage, the “general interest” of the Shores Act. Its infringement by acts and agreements, no matter who is the author, will be declared “contrary to the general interest”.

d) In the majority of the cases, the maritime-terrestrial public domain does not match with an ecosystem approach, comprising the dynamic interrelationships of the coastal zone with activities offshore and in the hinterland. Co-ordination is done at most between administrations involved within the maritime-terrestrial public domain, but not so much between administrations regulating activities influencing the coastal zone from outside those boundaries.

e) In cases of extraordinary or imminent environmental chaos co-ordination mechanisms might be too slow. Rigid distribution of competencies beforehand offers a priori a model of reference that allows to reduce the insecurity when deciding who is going to adopt a concrete measure, if the State or the Autonomous Communities, and it is useful to reduce the risks of extra-limitation in the exercise of their competencies, but it can be sometimes excessively rigid. Partial solutions cannot attend to certain situations of extraordinary or imminent environmental chaos, more when several Autonomous Communities are implicated.

Alvarez Garcia points out that the only solution could be the alteration of the rules of distribution of competencies in matter of environment based on the “principle of necessity”. This option has been put into practice for the first time with the Constitutional Court Sentence 329/1993.

c) Spanish coastal zone management legislation: undesired results

The relatively complete Spanish coastal zone management legislation has not halted, however, the deterioration of the environment, which continues apace in many areas. Unfortunately, conflicts of competencies and, thus, unsatisfactory co-ordination are often the protagonists within the Spanish legal system and can even forget the most important objective: the public service has to arrive, and with quality, to all the citizens.

This unsatisfactory co-ordination of competencies and interests obviously, causes both overlapping governance of local, regional and state governments (vertical relationships) and contradictions, particularly in their interpretation, or even gaps between and/or within public authorities and users in charge of different sectors of activity at the same site or at adjacent sites (horizontal relationships). Until recently, powerful private interest have imposed their criteria of arrangement without considering the “general interest”. This unsatisfactory co-ordination has resulted in considerable inter-agency conflicts and isolated sectoral environmental policy.

The Spanish coastal zone management legislation ends up being sectoral, which frequently implies that environmental issues are ignored or at most they are dealt as a residual issue after economic problems have been solved. The unilateral intervention of one environmental administration and/or State towards environmental protection will not make possible an important contribution if there are contradictory development policies of other administrations.

The reason why unilateral intervention is unefective is that the coastal zone consist of several dynamic subsystems inter-linked. The changes in the biological, chemical and geological attributes of the coastal zone will remain in a dynamic balance as long as the natural
system remains closed in terms of inputs and outputs. However, considerable changes that opens the system, at any point in any part of the system, can generate chain reactions far from their point of origin and possibly in a totally different system whose environmental conditions will be subsequently altered.

The sediment transport, water-dependent habitats and atmospheric deposition are some outstanding examples of the dynamic interdependence of the coastal zone. Once their relative "equilibrium" is disrupted, in many cases by considerable changes caused by construction activities, the environmental pollution transfers to other environmental sectors, exceeding the territorial scope of the conventional public organisations in charge of environmental protection.

Sectoral coastal zone management is, therefore, unable to avoid environmental damage and the solution will be at most reactive. The costs of protecting coastlines are likely to far outweigh any benefits from increased economic activities in the coastal zone.
This system including the new proposed "preventive" solution "behaves" as a loop balancing the initial factor of change. Instead of increasing the "priority of economic growth", there is already enough "citizen environmental awareness" to claim the need for "integrated and bottom-up intervention". That is, before the "state of the environment" decreases in the long-term, there is "public participation in the process of ICZM" to achieve the "reconciliation of economy and environment". This reconciliation reduces the "priority of economic growth", and increases the "state of the environment". The initial starting point of high quality of the environment is recovered and a "long-term economic growth" is followed. The results are better "socio- economic conditions" representing "higher quality of life" for present generations and no "negative economic impact" for the future generation.

a) Environmental awareness: where does it come from? Where will it lead?

There are several economic theories regarding relationships between environment and development that might question some relationships made in the previous causal-loop diagram.

The environmental Kuznets curve (EKC) hypothesis proposes that there is an inverted U-shape relation between various indicators of environmental degradation and income per capita. This has been taken to imply that economic growth will eventually redress the environmental impacts of the early stages of economic development and that growth will lead to further environmental improvements in the developed countries. Far from being a threat to the environment in the long-term, as argued by Meadows (1972 & 1992) among others, economic growth is necessary in order for environmental quality to be maintained or improved. This is an essential part of the sustainable development argument as put forward by the World Commission on Environment and Development (1987) in *Our Common Future*. The EKC is named after Kuznets (1955) who hypothesised that the relationship between a measure on inequality in the distribution of income is an inverted U-shape curve.

Proponents of the EKC hypothesis argue that at very low levels of economic activity environmental impacts are generally low but as development proceeds the rates of land clearance, resource use, and waste generation per capita increase rapidly. However, "at higher levels of development, structural change towards information-intensive industries and services,
coupled with increased environmental awareness, enforcement of environmental regulations, better technology, and higher environmental expenditures, result in levelling off and gradual decline of environmental degradation" (Panayotou, 1993).

Grossman & Krueger (1995) have arrived to the conclusion that only after economic growth has reached a critical level, citizens will demand that more attention is paid to the non-economic aspects of their living conditions. Other authors state that environmental awareness will not appear even after environmental catastrophes have occurred, if these ones do not significantly affect economic issues.

The main arguments against the EKC are:

- the inverted U-shape relation only applies to a subset of environmental impacts, and that overall impact rises throughout the relevant income range. For example, emissions of carbon and nitrogen oxides and municipal wastes increases as income increases. In these cases abatement is relatively expensive and the costs associated with the emissions and wastes are not yet perceived as high -often because they are borne by someone else (World Development Report, 1992).
- There is increasing evidence that the EKC is partly determined by trade relations. If this is so, the poorest countries of today’s developed countries will find it more difficult than today developed countries to reduce the environmental impact as income raises.

It is difficult to know which is the critical economic level that makes people become environmental aware. Instead, environmental awareness could be possible through environmental information and education. Environmental education is understood as going beyond the accumulation of information to the adoption of sustainable lifestyles and values.

Once environmental awareness shifts the perception and values of the environment, human uses and attitudes will change as well. For example, historically natural environments of lowland coastal areas have been considered as hazardous phenomena that cause floods, erosion, disease, and other social ills which require human control. Therefore, their transformation became legitimated in light of the social benefits provided by new agricultural land, health improvements, and later by the expansion of industrial, and tourism functions (Burton, Kates, and White, 1978).

A more recent perception considers preservation of coastal ecosystems as a duty for present and future generations, because of their crucial natural and cultural functions (Sajaloli, 1996; Williams, 1991). Indeed, the coastline supports a wide range of habitats, which are not only highly productive and biological diverse systems but also areas of outstanding natural beauty providing opportunities for recreation and tourism. The natural features of the coast also function as self-purification of pollution and as important natural buffers against the sea, storms, flooding and erosion, a benefit which is becoming increasingly important given the predicted rise in sea levels. Nevertheless, while this recent approach is gaining social ascendancy, development pressures maintain their persuasiveness in many parts of the world.
Another interesting issue to analyse is whether increasing environmental awareness is translated into citizen action. If this action occurs, when is it done? (immediately and continuously or only in emergency cases), which kind of action? (spreading information or participating and deciding in the decision-making process), claiming what? (pursuing collective interests or defending particular interests). And finally, will the authorities take into consideration the action of citizens?

In the next chapter the positive reinforcing loop between awareness and participation will be discussed. Stakeholders grow sensitive to the repercussions of their actions, for all coastal zone management problems, and for the competing aspirations of the solutions of these problems. This environmental awareness enables stakeholders to make a positive contribution at all stages of the decision-making process (De la Torre & Kimber, 1997).

b) Integration: what is it?

The aim of ICZM is to reach the goal of sustainability in the coastal zone, based on the maintenance of a dynamic equilibrium between social equity, efficient economy and sound environment. Social justice can only be achieved based on the economic sustainability, and the economic sustainability requires the environmental sustainability, since all the primary resources and energy sources comes at the end from nature (Aalborg Charter, 1994). Finally, environmental sustainability is based on the concept of Earth carrying capacity.

However, the Earth carrying capacity is a relative concept, its definition will shift over time depending on three factors: first, the practice of managing the given resource according to the current understanding of how nature sustain itself; second, the characteristics of the user determined by changing constraints arising from socio-economic and institutional context; third, the original state of the resource with a certain degree of resilience.

Since no resource systems, nor the institutions associated with them, can be sustained as in perpetuity, changes in both are inevitable. What must be sustained, however, is the capacity for renewal and evolution in ecosystems, and innovation and creativity in social systems. Sustainability is not some end state to be achieved, but a trajectory to be negotiated continuously as societies learn to recognise the symptoms and evidence of non-sustainability and adjust accordingly (Francis, 1995).

This framework of negotiation shall represent the Economic and Environmental conditions and level of Equity that an individual society is willing to accept at a specific point in its development (Burbridge, 1998).

Integration will be the consensus social choice of beneficial trade-offs agreed through negotiation. It is important to note, though, that the trade-offs between economic development and environmental quality different societies and/or over time as societies evolve will accept may be very different according to different values in those nations and/or over time (Olsen, Tobey & Kerr, 1997). In fact, conflicts among users and potential user groups of the coastal zone are directly related with coastal values.

The direct relation of the current anthropocentric focus and coastal space and resource use is the idea of “optimisation” of resources or the environment. That is, unless resources are developed for human benefit, they are not being used optimally. Neither that other living things are dependent on the environment, nor that human interventions sometimes have adverse consequences for them is recognised.

For example, economists argue that there are trade-offs between economic development and environmental quality: if we want to preserve environmental conditions there will be economic costs in terms of specific development options which may never be fully realised; conversely, maximising economic development of coastal resources is likely to cause environmental damage. However, these trade-offs view can be misleading because lack of awareness about the long-term social and economic benefits of a high environmental quality could imply that most countries place higher priority in economic development objectives than in environmental quality objectives.

Cicin-Sain and Knecht (1997) distinguishes between value conflicts between market and non-market values, which are most intractable since they are often based on philosophical conflicts, and use conflicts between those who derive market values, which are relatively amenable to resolution through consensus and compromise.

c) Participation: as a procedural mechanism

ICZM develops appropriate tools for acquiring a sufficient theoretical background as well as for assuring proper implementation (Coccossis, 1996):

- **data management** (i.e., Remote Sensing by satellites such as LANDSAT (USA) and SPOT (France), coupled with digital mapping and GIS (geographic information system) technology);
- **regulatory instruments** (i.e., zoning, emission standards, BAT (best available technology), planning, licences, permits);
- **economic techniques** (i.e., user fees and charges, resource prices, green taxes, tourist taxes, subsidies, credits);
- **evaluation and assessment techniques** (i.e., EIA (environmental impact assessment), risk assessment, vulnerability assessments, carrying capacity assessment, studies of impacts of expected climatic change, cost/benefit analysis, least cost analysis, prospective studies, economic evaluation);
- **procedural instruments** (i.e., reviews, public hearings, conflict resolution, negotiations, mediations, voluntary agreements).

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

This chapter only analyses the procedural mechanisms of co-ordination and bottom-up participation. The next chapter will analyse the relationship between citizen participation and effective implementation of ICZM.
Participation allows conflict resolution and consensus-building of the initiatives of the various agencies, private economic sectors, and communities toward long-term optimal socio-economic and ecological outcomes. The main purposes of co-ordination and bottom-up participation are the following:

a) Co-ordination: the ICZM is not a substitute for sectoral planning, but avoids fragmentation by focusing on the linkages between different sectors (UNEP, 1995). Institutionally, it is appropriate to fit an ICZM program into the current governmental structure in a manner that causes the least disruption of present institutional alignments (i.e., implementing effectively current co-ordinating mechanisms). However, for a full scale, comprehensive program, it would be desirable to create a new agency, such as multiple use oriented “Coastal Authority”, provided it would have the governmental support, power, and resources necessary to perform its function (Clark, 1997). The main purpose of co-ordination mechanism is to (WB, 1993):
   a) promote and strengthen long-term interagency and inter-sectoral collaboration;
   b) reduce interagency rivalry and conflicts;
   c) minimise duplication of functions of line agencies;
   d) provide a forum for conflict resolution among sectors; and to
   e) monitor and evaluate the progress of ICZM projects and programs.

b) Bottom-up approach: ICZM does not eliminate the top-down approach, but combines it with a bottom-up approach. Most examples of coastal zone management to date have been generated at central government level for many reasons, not the least of them is that central government typically retains most jurisdiction over coastal and ocean waters. It is a top-down approach which to be successfully implemented, requires the co-operation of local communities (UNEP,1995). The bottom-up approach, specifically, has the role of narrowing the gap between the State and Local Authorities, between the Government and Society, and between Scientific and Traditional culture.

It is important to note that the way in which ICZM is implemented is greatly influenced by the reasons for the programme, the cultural and political background and the administrative structures in a particular country. Generic principles are not a rigid set of prescribed steps and procedures. Rather, they represent a flexible approach consisting of alternative options serving the same goal and, thus, they can be adapted for the conditions of a place and time.

Participation techniques should be tailored to suit the local circumstances, the kind of issues and the requirements of all participants. These elements will determine the adequate resources, including time and skills that should be allocated (Graham King, 1998).

d) Promising results of ICZM

Participation as a procedural mechanism makes possible that the identification of potential problems and the choice of a preventive and integrated solution are agreed by all stakeholders. This preventive approach has many benefits. Usually, environmental problems are not only more tractable at an earlier stage but also cost-effective, saving money in the long-run, if investing in protective measures before problems appear.

ICZM guidelines recommend that coastal zone management is based both in an ecosystem approach in the definition of the coastal zone and a multiple use approach that eliminates incompatible human activities within the defined boundaries of the coastal zone. In fact, rather than allocating socio-economic activities to an exclusive purpose or alternative use, the central
issue, is to conduct development activities in a multiple-use fashion that allows economic activities compatible with the preservation of long-run productivity of natural systems for sustained use by minimising deterioration in the coastal environmental quality (Ehler & Bower, 1995).

These integrated solutions reconciles economy and environment by reducing priority of economic growth and increasing the protection of the environment. The implementation of such solution will be carried out in a co-ordinated manner in order to avoid transferring problems from sector to sector.

Changes in management style may be used as an indicator of progress of the project or programme level (Burbridge, 1997):

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point of departure</td>
<td>Things</td>
</tr>
<tr>
<td>Mode</td>
<td>Blueprint</td>
</tr>
<tr>
<td>Goals</td>
<td>Predetermined</td>
</tr>
<tr>
<td>Analytical assumptions</td>
<td>Reductionist</td>
</tr>
<tr>
<td>Keyword</td>
<td>Planning</td>
</tr>
<tr>
<td>Locus of decision making</td>
<td>Centralised</td>
</tr>
<tr>
<td>Relationship with clients</td>
<td>Controlling, inducing standardised and universally applicable</td>
</tr>
<tr>
<td>Methods</td>
<td>Diverse and locally evolved and adapted;</td>
</tr>
<tr>
<td>Technology for clients</td>
<td>A fixed package</td>
</tr>
<tr>
<td>Project output</td>
<td>A varied basket of options</td>
</tr>
<tr>
<td></td>
<td>Infrastructure</td>
</tr>
<tr>
<td></td>
<td>Competence and choice</td>
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</tbody>
</table>

The practical benefits of effective ICZM are to enhance fisheries productivity, increase tourism revenues, sustain mangrove forestry, and protect lives and property from sea storms (Clark, 1997). ICZM should, therefore, achieve long-term development for present and future generations.

The outcomes of Sustainable Development should be measured by indicators that arrive at a broader, more complete picture of societal development. Beyond the common indicators for monitoring such as GDP, unemployment rate, literacy rate and population growth rate. There is need to include social, environmental and institutional indicators shall be quantified and taken into account (Wackernagel, 1997).
HOW CITIZEN PARTICIPATION IMPROVES THE EFFECTIVE IMPLEMENTATION OF ICZM

The core of the participatory process is shown by the balancing loop between substantive goals and procedural goals. The rest of the diagram shows the actors influencing or influenced by the balancing loop.

**a) Democracy and the environment**

The demand for citizen participation in the protection of the environment is united with the particular characters of environmental problems: universality, survival, interdependence and irreversibility. Those characters are so transcendent that demand for citizen participation is reflected in many political speeches and international declarations ("soft law") such as Principles 10 and 22 of the 1992 Rio Declaration and Chapter 40 of Agenda 21.

Within the framework of the process of pan-European co-operation on European environmental issues, "Environment for Europe", public participation has emerged as one of its main strands, both in the procedures followed and in the substantive content. In May 1998, the contracting parties agreed the ECE Convention on Access to Environmental Information and Public Participation in Environmental Decision-making, which is "hard law".

Current representative democracy is not working properly. As the population, territorial size, and managerial scale of democratic states have increased, the opportunities of face-to-face popular deliberation have declined. At the same time, there has been an increase and wider variety of institutions - and hence a broader range of interests, values, and operating styles that makes difficult to be represented in few political parties (Hempel, 1996).

Elections result many times in a blank check for elected political parties to do whatever they consider convenient. Voters of the elected political party might agree with the general ideology, but not with the solution given to isolated concrete issues. Other forms of public participation
not channelled through political parties such as legislative initiative or referendum are costly and marginal (Subirats, 1998).

It is important to remind that, though, that participatory democracy is not an alternative to representative democracy. In general, voluntary measures such as public participation should not replace regulation, but should only be introduced when they demonstrate a greater degree of potential effectiveness. The dilemma, therefore, is to find which is the best combination of representative and participatory democracy in order to get the best advantage of their positive synergy.

The Spanish Constitution recognises the right of citizen participation in political, economic, cultural and social issues, in a general manner, as a basic principle that must guide the intervention of public powers (art. 9.2) and as a fundamental right of citizens (art. 23.1). However, participation in environmental issues is more problematic:

1) art. 45 SC states the right to the environment without considering it a fundamental right of the SC, consequently, it cannot be alleged directly and only may be alleged in the measure and with the extent that dispose the laws that develop its substantive content (art. 53 SC).

2) art. 45 SC points out that the duty to conserve the environment corresponds to "everybody" (both public authorities and civil society). Citizens, thus, ought to participate in order to articulate the necessary legal tools for effectively exercise the right to the environment. The right to the environment is not a substantive right, it only implies the right of citizens to participate in environmental management.

Citizen participation in environmental issues can be, then, legally based on two arguments. First, the public use of "maritime-terrestrial public domain": because problems become collective, a collective guardianship shall be possible through greater procedural flexibility than usual in all the phases of the coastal management process (Pallarés Moreno, 1982). Second, the protection of "diffuse" interests: anybody may participate in defence of the community but it may not benefit from it more than its condition belonging to it (Alonso Garcia, 1989). However, it is not clear the exact scope of the matter legally possible to protect, and neither particulars are always legitimised to participate in the protection of a right that is not linked in their individual sphere in a direct manner (Martinez Quirante, 1995).

b) Top-Down approach: Expert opinion and Consultation

The integration of top-down approach with community participation is usually being restricted to advice giving, transparency and support raising through interpretation, coupled with a considerable reliance on scientific decision support techniques. Techniques such as risk/vulnerability assessments, resource accounting, outcome-based monitoring and Environmental Assessment (EA) are characterised by a reliance on expert opinion (social and nature sciences). Paradoxically, this expert opinion aims, in theory, at moving towards decisions that best serve the interests of local communities but with little if any provision for their input, efforts instead being focused on interpreting the results to the public in order that they may understand how and why scientists reach decisions (Cicin-Sain and Knecht, 1997).

Without the co-operation of local communities, expert opinion within the top-down approach has two major risks. First, it fails to capture the diversity of values both within and between different stakeholder groups which are underpinned by different value systems. Second, it imposes decisions, based on a typology of values for the management of resources that ironically are "common", on stakeholders who have had no significant input to the policy formulation process and are thus more prone to object to policy decisions and adopt a defensive individualist stance (Jones, 1997).

The only decision support approach which purports to take account of wider societal values are the environmental and social valuation techniques, which challenge to determine a credible
A way to give value to aspects not readily measurable in quantitative or monetary terms (Dovers and Handmer, 1992). However these techniques are not currently reliable nor developed enough to substitute the role of citizen or community participation (Jones, 1997).

Six levels of participation can be distinguished. The first three upper levels, which are the traditional *top-down approaches*, cannot really be considered participation since at most consultation is done to experts.

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**Levels of Participation in the process**

1. **Directed or non-participation**: within this level there is no participation and no potential for change, whereby those with the power to impose the decisions on the rest of the community do so, and thereby keep greater control with the statutory authorities. The community is treated passively and informed as to why a particular course of action has been adopted, rather than learning by being involved in the decision making process.

2. **Informing or education efforts**: through “informing”, people are told what has been decided or has already happened or may be asked for views on a single option. This option is suitable for situations where there is no room for manoeuvre, for instance if there is a clear legal requirement. Informing can involve a variety of methods, i.e. newsletters, leaflets, web sites and talks.
3) **Consultation:** it is the combination of information giving, where people are told what is planned regarding a specific proposal/document with little opportunity for feedback; and information gathering, where comments of public scrutiny are listened, discussed and taken discretionary into account in decision-making. Method often used include surveys, questionnaires, meetings and formal public hearings.

Consultation is only useful where there is a limited range of options available to help achieve a consensus view. However, in many cases consultation is done after the decision has been taken, on an objection basis and without the neither time nor resources enough to propose alternative development models - all this having been done by “experts” prior to consultation. Finally, if there was any proposal, it is unknown to what extent the allegations will be taken into account (Breton, 1995; Ellsworth, Hilderbrand & Glover, 1997). In some situations this level of participation can be successful but due to the limited ownership by the stakeholders it may not last (Bayliss, 1998).

The Spanish legal system foresees the possibility of participation “ex ante”, at early stages of the decision-making process, through different techniques: i.e., informal consultation (“extra legem”), functional consultation (art. 105 c) SC, art. 87 30/1992 GAPA, art. 49 7/1985 BLRA and sectoral legislation), consultation in councils (at local level: “Concejo Abierto” art. 29 BLRA, Pleno BLRA, in different organisations of the Town Council) and direct consultation (“consultative referendum” art. 91.1 SC). This kind of participation is possible at all levels of governance.

It also exists the possibility of participation “ex post”, after the conflicts have appeared, through the following techniques: i.e., demonstrations (art.21.2 SC) and mass media, complaints to the administration (arts 34 and 70 30/1992 Act), petitions to the parliament (arts 29 and 54 SC), popular actions (art. 125 SC and 109.1 Shores Act) and appeals to the Courts. At this stage there are antagonist opinions rather than consultation and co-operation, which are more beneficial.

**c) Bottom-Up approach: Social opinion and Community Management**

Bottom-up approach allows direct citizen participation since it recognises that even if the growing complexity of economic, technological, and environmental problems will thrust experts more and more into public decision roles, it is very important that participation is diverse and gives also voice to stakeholders such as local communities and minority groups (Hempel, 1996). This is shown by the following scientific and social consensus table:

<table>
<thead>
<tr>
<th>Level of Social Consensus</th>
<th>Level of Scientific Consensus</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td></td>
</tr>
<tr>
<td>LOW</td>
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**Scientific and social consensus. Source: Subirats, 1998.**

Every time is more rare to find situations that can be identified with number 1. Situations where there is both consensus of scientific or experts and social actors implicated. On the one hand, there is social fragmentation and multiplication of actors, on the other hand, there is proliferation of contradictory studies concerning the same reality.

The more usual trend is number 4, situations where both expert and social consensus is low. In this field, alternatives of democratic participation and dialogue between opposed or different scientific and social views need to be protagonist, and through improvisation and seeking innovation from all the actors involved agree on conflict resolution.
The last three lower levels of the table of levels of participation, which are bottom-up approach, can be considered real participation. It is important to realise that some of the lower levels of participation underpin the upper levels. For example, to effectively involve people they must first have the relevant information to enable them to contribute fully to the process. Thus, these six modes are not alternatives, but cumulative options.

1) **Partnership, share working or public advisory committees**: where participants are actively involved in jointly studying issues, i.e. through topic or issue groups. Projects or initiatives are run by committees of hand picked representatives (individuals or organisations in their area of interest). Where there is a gap in representation, the aim of the Forum is to fill it. Representation is useful where the stakeholders should own the solution, but where there are too many people to enable everyone to effectively have a say i.e., where a plan or initiative covers a large geographical area. This process is also used by the top-down approach.

2) **Interactive, deciding together or multi-stakeholder processes**: where participants, frequently the partners, resolve differences together and take collective decisions. This option gives more power to the community as well as builds up trust, ownership and responsibility which enables a statutory scheme of management to be implemented through a voluntary structure.

Planning and decision making responsibilities are shared between the statutory authorities and the people, i.e. through joint committees, workshops and consensus building. Others are encouraged to provide additional ideas and options, and join in deciding the best way forward, i.e. decisions are made together and then carried out. The resulting decisions reflect a wide range of interests and ideas, and result in a better understanding of the constraints and opportunities facing each stakeholder. This approach is both time consuming and costly, but where possible and practical is the perfect method to gain commitment to the project.

3) **Community management, empowerment or delegated authority**: this is the bottom-up approach whereby people initiate and handle the entire job of planning, policy making and managing a programme independent of external organisations, although external organisations provide help in the form of resources, support and technical advice.

This bottom-up approach can be feasible within the Spanish legal system based on the principle of subsidiarity and local autonomy. Regarding coastal zone management, local authorities possess competence for the formal and practical implementation of EU legislation. The central government, responsible for negotiating legislation at international and EC level, cannot extra-limit competencies and has to respect the local and regional government.

The 1988 Shores Act, art. 115, establishes the “possible” municipal competencies regarding beaches. The 149/1991 Sentence of the Constitutional Court clarifies that this article is constitutional, and “does not collides in any way with the regional competence in the matter of civil protection” and even less with the one of maritime rescue. The exploitation of seasonal services in the beach shall be adjusted to the regional legislation. Even though, Calero Rodriguez considers that the mentioned municipal competencies seem more a budgetary cost rather than true competencies.

The 170/1989 Constitutional Court Sentences, specifies: “beyond the limit of minimum content that protects the institutional guarantee of local autonomy, it is a juridical concept of legal content that allows, therefore, diverse legal configurations, valid when they respect the local autonomy”. This makes possible that the Municipality legally establish additional measures of participation in the protection of the environment that complement both the vacuums of legislation and the intervention of superior entities. In this sense, it is possible the
constitution of the “Environmental Municipal Councils” for the elaboration and execution of Local Agenda 21.

The documents from the Rio-summit presents no concrete guidelines on what a Local Agenda should include in detail. Each concrete Local Agenda 21 should emerge from a democratic process. The Environmental Municipal Council can provide a feasible Forum where citizens can exchange and spread out information, express their opinions and complaints, discuss perceptions and concerns reasoning opposed visions, propose alternative solutions, negotiate and issue recommendations taken by consensus. NGOs are not so legitimised as elected political parties, their opinions will have merely a consultative value being persuasive and of strong moral authority, while the elected political parties will be who makes decisions legally binding.

On the other hand, the principle of local autonomy stated in the Spanish Constitution can only be effective if it can be defended before the Courts. The legislation foresees this possibility, but it is very limited and insufficient. Without direct access to the Constitutional Court, the juridical defence of local autonomy is restricted against Regulations and not Acts, before the Contencioso-Administrative Court. This insufficient defence of local autonomy, only against infra-legal acts, is a gap respect art. 11 of 1985 European Charter of Local Autonomy ratified by the Spanish Government in 1988.

d) Preconditions of participation

The preconditions of effective participation are information and education. There is a direct relationship between a democratic society and the transparency of the public institutions. The society is more democratic when more transparent is the action of its administrative institutions (Sanchez Moron, 1991). Public powers cannot deny participation because of lack of these two preconditions because the objectives of education and information of citizens are a responsibility directly concerning public powers. (Martinez Quirante, 1995).

The Spanish Constitution recognises and protects the fundamental right of all citizens to communicate or receive true information by mass media (art. 20.1.d) and in art. 105.b). This right is developed by the Spanish 38/1995 Act, which transposes the EC Directive 90/313 on Freedom of Access to Information on the Environment.

Particularly positive of 38/1995 Act is that citizens are granted access to information rather than to the documents belonging to proceedings which are included in registers and files, as was the case with earlier system. Another important step forward is the fact that the requester does not need to prove a specific interest to have a right of access. This again is an improvement on the previous system which required that an interest be proved in a number of cases. In some respects, however, the 38/1995 Act has not correctly implemented the Directive. The limitation of the right of access to nationals or those domiciled in the European Economic Area, the exception where information relates to political acts, and the designation of silence as a refusal, are probably contrary to the terms of the Directive (De la Torre & Kimber, 1997).

Another precondition of participation is self-organisation of citizens, the International Council for Local Environmental Initiatives (ICLEI) considers that public participation in the Local Agenda 21 process is only possible through Associations or Non-Governmental Organisations (NGOs). Public hearings acquires, therefore, a participatory nature when art. 31 of 30/1992 General Administrative Procedure Act assumes a broader concept of legitimise interest, including both individual interests and collective ones; it also recognises the possibility of hearing of organisations of defence of collective interests such as the Environment or Associations of Neighbours.

1) Associations and NGOs: they are defined as self-organised durable, bounded, voluntary relationships of individuals and value-driven making possible a capacity of quick self-organisation of the civil society. Anyway, these social groups can only participate if they
have a legal standing requiring a certain degree of legitimacy and accountability (i.e.,
fulfil requirements that testify their solidity, representative capacity and seriousness of
purpose).
NGOs can enhance pluralism and the functioning of democracy. People's choices can
easily arrive to NGOs that may perform an important intermediary role between Society
and Government in supplying information, facilitating communication and consultation
with timely and wise opinions.
2) Networking of citizens: Associations and NGOs must determine, then, how to contribute
effectively to formal inter-governmental processes while remaining true to their
constituencies and goals, that is, without becoming dependent of their founding from
political parties, professional or claim political constituency. A way to contribute with
increased representativeness, persuasiveness and efficiency to formal inter-governmental
processes is working more closely with each.
Networks present horizontal organisational forums in contrast to vertical ones based on
hierarchical authorities. These coalitions vary in the number of groups involved and in
their duration (McCormick, 1993). The challenge is to remain plural and no
homogenous as well as equal in standing and no an oligopoly.
Stakeholders in a certain issue are not only local people but also users and other people
affected. In this sense, NGOs have two different working techniques. One, is "scaling
up", which is certain kinds of transnational efforts from neighbourhoods and regions to
the national and global level, and other is "scaling down", which refers to processes
whereby supra-local organisations change their structures and modes of functioning to
allow for meaningful interaction and co-operation with grassroots organisations and
NGOs (Weiss, 1996).
e) Factors of success of participatory democracy

There are no firm right or wrong ways to carry out participation in coastal zone management
and the process can be adapted to suit local circumstances. A number of guiding principles of
participation strategy can be summarised from the experience to date in different Western
countries. Proceedings for participation should be as fair, open and transparent as possible:
- opportunities for participation should be clear and explicit.
- Participation should be targeted at the right audience: stakeholders.
- stakeholders should be well-represented and voluntarily willing to co-operate and learn.
- clear and accurate information should be made available to participants to assist share
learning.
- participation should start with a limited set of issues and with what people know and
understand.
- participation techniques should be appropriate to the local circumstances.
- it should be a gradual two-way process between proponent and community.
- contentious issues should be expected and conflict handled with skill and care by trained
or experienced personnel.
- all contributions should be equally valued or fairly considered.
- Early and continuous consultation is essential.

Through crises it is possible for learning to lead on to innovation and new responses; equally
though conflicts can remain intractable and relationships destructive. Useful principles to guide
the conduct of participants should include (King, 1998):

1) Confronting the problem and no each other.
2) Seeking ways to satisfy each others' needs (win-win).
3) Seeking common ground or balance.
4) Isolating genuine from spurious conflict.
5) Allowing full discussion and feedback.
6) Avoiding unnecessary red-tape.
7) The need for realistic expectations.
8) Drawing on experience elsewhere.

*Good communication and dialogue have the* special value that they can provide a relatively objective insight into the various interests of the different parties while the possible consequences of the decisions can produce additional information and find the bases for compromise solutions. (UNEP, 1995). No matter how sophisticated the techniques, so much still depends upon conversation (King, 1998). The following tips are adapted from British Telecom “Talk Works”:

<table>
<thead>
<tr>
<th>MAKING YOUR POINT</th>
<th>RECEIVING THE MESSAGE</th>
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</thead>
<tbody>
<tr>
<td>• read the situation</td>
<td>• be prepared</td>
</tr>
<tr>
<td>• engage their attention</td>
<td>• display interest</td>
</tr>
<tr>
<td>• be clear</td>
<td>• encourage flow</td>
</tr>
<tr>
<td>• link to context</td>
<td>• stay open-minded</td>
</tr>
<tr>
<td>• fill in details</td>
<td>• chip in as necessary</td>
</tr>
<tr>
<td>• animate</td>
<td>• absorb meaning</td>
</tr>
<tr>
<td>• absorb reaction</td>
<td>• affirm understanding</td>
</tr>
<tr>
<td>• check understanding</td>
<td>• respond positively</td>
</tr>
</tbody>
</table>

f) How to measure the results

Governance capacity is vital to sustained action on coastal resource issues but, at the same time, policy indicators are the least developed compared to measurable tangible environmental and socio-economic indicators. Yet, thorough understanding of the elements of governance and the public and private institutions that implement or manage coastal management programs in a specific country is essential. These institutions are more likely to be the source of program debate and conflict than are purely technical matters (Olsen, 1997).

Regarding *public participation*, Graham King (1998) has developed an specific criteria assessing the effectiveness and outcomes of participation. The criteria is not comprised by fixed entities: they overlap or inform each other. All may contribute to the trust and commitment which is central to consensus-building. Other variations are possible, and may be used as learning tools for evaluation.

For each ICZM program it can be determined the appropriate requirements for meeting such criteria, as well as the indicators or performance measures calculating the degree to which such criteria may be attained. The “performance wheel” is a simple way of expressing the degree of commitment by local projects to the various criteria which define successful participation. Scores are graded along each arm, with the greatest commitment away from the centre.

**EFFECTIVENESS:** the extent to which the proposed process of interaction between those responsible and those eventually participating and benefiting from the scheme were sufficiently dynamic and consultative.
OUTCOMES: effective participation provides a satisfactory means of resolving conflicts over patterns of resource conservation and use.

ICZM Goals

- Integrated Policies
- Information Sharing
- Political Support
- Joint Initiatives (Continuation)
- Real Issues

A major indication of satisfaction may be that after monitoring, during a number of years, evaluation shows a high degree of support by key stakeholders in sustaining its momentum through to implementation. The policy adopted is still relevant and will continued in the future.
PROS & CONS OF CITIZEN PARTICIPATION

a) Contribution with Local Knowledge

Scientific uncertainty is growing not only as the environment becomes more turbulent but also because it is impossible to predict the cumulative impacts of different actors intervening at the same time. Nevertheless, through collaborative working the gaps between informing each other and acting may be reduced.

**PROS:** Professionally trained experts can usually learn and benefit from the experiential knowledge of people who live and work in an area. Indigenous or local people have understanding and insights about resources, environment and ecosystems as a result of observation over various seasons and many years and might be aware of aspects that a scientist could miss. Moreover, people living in an area will have to live with the impacts of development, and therefore are likely to be able to anticipate negatives impacts and even propose alternative solutions that fall outside the scientific realm. The participatory approach should, therefore, combine local knowledge systems with science-based knowledge.

**CONS:** Throughout the world, local knowledge systems are changing, sometimes rapidly, owing to the pressures of Westernisation, urbanisation, commercialisation and modernisation, among others, as well as to the elitist values often engendered by non-traditional education. In a great many instances, local knowledge is thus fast disappearing, at worst, or becoming hybridised with extra-local elements. On the other hand, public authorities can also challenge scientific opinion with political arguments.

b) Increased awareness

**PROS:** Through participation stakeholders grow sensitive about both the complexity of the environmental problem and the significance of environmental protection within the context of sustainable development (WB, 1993). This educational process leads to informed decision making.

**CONS:** Lack of transparency: some of the most significant obstacles to freedom of information include: a culture of secrecy in public administration; confusion among the general public when dealing with the bureaucracy; the cost of obtaining information; the practical difficulties of getting documents or copies of documents in the right form at the right time; and problems of enforcing the right. When information is given, the majority of the times is not available in useful form: too scientific and not systematised nor transdisciplinary.

c) Greater efficiency:

**PROS:** Working together can achieve more than working singularly. “Co-operation” means that stakeholders elect to pursue co-operative strategies that might yield higher gains for all stakeholders instead of competitive strategies that may maximise individual gains (Bayliss, 1998 & Jones, 1997).

**CONS:** Defence of self-interests: if co-operation is not well-done and there are unrepresentative committees or groups, different social groups could defend inflexible sectoral interests instead of reconciling all of them toward a common collective interest (sustainability). This can be described as the “NIMBY” (not in my back yard) effect, as a consequence of the growing political influence of environmental NGOs in a number of industrialised countries and in detriment of developing countries driven by the necessity of fast economic growth.
Short-term perspective: usually the discussions are focus on short-term perspective. However, mature ICZM programs makes it very clear that it takes a sustained effort measured in decades and spanning several generations of a given program, to achieve tangible expression of the end goal at a significant scale.

d) Conflict resolution

PROS: When detecting and discussing controversial issues with opposed opinions, it is necessary to avoid or minimise potential conflicts that could become an obstacle for a decision and that they finish fragmenting the group (ICLEI, 1995). The Environmental Municipal Council, following the prevention principle, could acts as an arbitration system that manages conflict through bargaining, mediation and compromise at initial stages.

CONS: Difficulty in handling conflicts: there can be unrealistic expectations that does not count with uncertainties and unexpected events. Such uncertainties could be for example a polarisation around key issues that impedes the harmonisation of different interests. In the face of this situation, handling conflicts is difficult and there is the risk of breaking down communication.

e) Achievement of consensus

PROS: It is difficult to achieve a representative decision taken by simple majority in a meeting participating representatives of a wide range of different interests. The most useful result is the achievement of consensus on a reasonable and just solution of use conflicts. That does not mean that the final decision reflects all the opposed options, but that the final decision is willing to be complied by the group, achieved by consensus after a process of agreement and extent discussion (ICLEI, 1995).

CONS: The breaking of communication is an obstacle for a decision and can finish fragmenting the group.

f) Confer additional legitimacy

PROS: The consensus of an Advisory Council confers additional credibility and legitimacy to the political decision-making based on representative democracy. The public opinion has a consultative value and will be discretionary accepted or rejected, as the last decision, by elected political parties, which are the ones to have direct democratic legitimisation through electoral votes. Social organisation, even if they are important, are not legally representative of the neighbours as a whole, but they are only bringing their social interests according to their particular interpretation.

CONS: Public authorities can manipulate participation in order to justify and add legitimisation to their pre-establish project. The feeling that participation has any effect or political support in the final decision could decrease participation and commitment.

g) Commitment, ownership and shared responsibility

PROS: Stakeholder ownership of policies and projects will lead to commitment to the coastal zone management process; people are more likely to accept decisions with which they personally disagree having had the opportunity to express their point of view and having had those views genuinely taken into account than if they have not been involved at all or had them given token consideration only (Bayliss, 1998).
CONS: Non-participation: citizens and administrators do not really want to be involved in tiresome, long and complex decision-making processes. They might think that it is more convenient representative or even delegation democracy. Non-continuous participation: when citizens participate, they do it in a concrete moment and afterwards there is not continuity.

h) Improvement of effective implementation and equity of ICZM

PROS: For it is through their participation that stakeholders: increase environmental awareness; undergo fundamental behavioural changes; appreciate the need for conflict management; and come to support the whole process with their voluntary co-operation (Jones, 1997).

CONS: Increase of slowness and complexity: increasing different points of view need to be accepted, which could imply a slow process and a complex organisation. Public authorities might think that the "urgencies" of the problems can not wait to long decision-making processes.

That is why, it is important that the plan formulation process be completed in a reasonably short time and move quickly from planning to management with sub-projects. The energy and momentum generated in the early stages of initiating the plan should not be lost. Both stakeholders and government agencies can lose interest if the plan formulation process is overly extended (WB, 1993).

Increase of costs: if different points of view are accepted, there will be need of project modifications and investments. Moreover, ICZM is a long-term process having the fundamental requirement of long-term commitment in budgetary allocations to provide managers, private developers, conservationist groups and the community with a degree of certainty and confidence that the ICZM is an evolving process.

i) Variable level of participation

PROS: The level of participation will depend on the local circumstances in terms of demographic, economic, political, geographical location and types of issues present. Experiences in the UK show that rural communities are more willing to participate proactively in such initiatives and that their relatively close association with the natural resources in question dictates that such participation is of particular importance. It is easier to achieve wide effective participation if the project is only covering a small area.

CONS: Urban communities, on the other hand, are less closely associated with natural resources and are less likely to take an interest in such initiatives, whilst recreation communities, especially those that are relatively diffuse, are more likely to take a reactive role in objecting to proposed management restrictions (Jones, 1997).

Over-ambitious expectations: Even if legal participatory mechanisms exist, their practical effectiveness would not work if there are not the necessary cultural, social and political democratic conditions for it. Spain is a relatively young democracy since 1978; preceded by a period of dictatorial and authoritarian government with conditions of censorship and persecution, lack of freedom of association and speech.
CONCLUSIONS

1) Combined environmental impacts of different economic activities in the coastal zone generate acute problems for the resource base on which those activities depend. The degradation of the coastal zone causes indirect conflicts on society and economy:
   - *Equity conflicts:* where the general public are the ones to bear indirectly the social costs of environmental degradation, while the profits and benefits of some economic activities over-exploiting “common property” coastal resources are confined to minorities.
   - *Use conflicts:* in the long-term, the conflicts inevitably arise among users and potential users when the diversity of human activities competing for limited space and resource use become incompatible.

2) Inter-administration conflicts are one of the reasons of unsatisfactory co-ordination and, thus, the current Spanish coastal zone management ends up being sectoral. The unilateral intervention of one environmental administration towards environmental protection will not avoid the environmental pollution transfer to other environmental sectors exceeding the territorial scope of the conventional public organisations in charge of environmental protection. Reactive solutions are unsustainable and very costly.

3) Integration solutions such as taking both an ecosystem and a multiple-use approach through a participatory decision-making process and co-ordinated implementation reconciles economy and the environment. Preventive solutions are sustainable and cost-effective.

4) Regarding my hypothesis, the conclusions revealed that public participation and efficiency are not always contradictory concepts, but complementary concepts with positive synergy.
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   e) Ocean and Coastal Management Archives, OCMA. [http://www.polis.unige.it/ocma98/](http://www.polis.unige.it/ocma98/)


Coastal Zone Management Source Pages.


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http://164.11.100.12/jbeleuronet/eCampaign.htm

ICLEI. http://www.iclei.org

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