

Coastal Zone Management in Spain (1975-2000)

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ABSTRACT

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In this piece of work an analysis is made of the ten main aspects of planning and management of coastal zones in Spain, studied within the general context of the country. The ten analysed aspects can be interpreted as a analysis the structure of coastal management of a certain area. Although other issues of interest can be studied for coastal management in Spain, ten have been considered the most important: coastal policies, legislation, distribution of responsibilities, administration, strategies, tools, administrators, economic resources, knowledge and information, and participation. During the last 25 years, there has been a series of decisive structural changes of a political, institutional, social and economic nature. These changes have contributed significantly to an improvement in the system of coastal planning and management. This system cannot, however, be classified as integrated. Besides the elaborated general diagnosis, guidelines are proposed to enable the improvement of coastal management in Spain in the future.

ADDITIONAL INDEX WORDS: *Planning and coastal management, Spain, Andalusia, coastal zones.*

INTRODUCTION AND METHOD

The main aim of this piece of work is to offer a general overview of coastal management in Spain. Coastal management refers here to the process designed to administer the natural and cultural resources found in that geographical area (CLARK, 1996). This article does not intend to study the Spanish coastline itself, but to analyse the way it has been managed over the last 25 years. The final specific objective is to draw up a series of strategies which will contribute to finding a solution to the problems observed.

The work method can be summarised as follows:

- (a) At present there is no integrated management programme for coastal zones in Spain. The process of political and administrative decentralization may have delayed the development of a more sustainable model of coastal management. This does not mean to say that, in the present circumstances, it is not possible to achieve an integrated management model.
- (b) The last 25 years (1975-2000) can be considered as a transition period between the old, obsolete model and a more integrated future one (BARRAGÁN, 1997). Broadly speaking, three different stages can be outlined within this period, although there is some overlapping of dates:
 - (1) 1975-1984; concepts from the predemocratic period still prevail, although there are some signs of change (CEOTMA, 1982, a, b, c; GARCÍA, 1981; GONZÁLEZ, 1982).
 - (2) 1985-1990; on both a national and regional scale,

there are some very interesting and significant initiatives which favour a change in coastal management models (CEP, 1987; ITUR, 1987; JIMENO, 1988).

- (3) 1991-2000; a relative stagnation of the change process which coincides with substantial investments in infrastructure and equipment.

The methodological framework followed was firstly to situate the management of coastal zones within the European and national context. This is a necessary step towards fully understanding the processes observed. This is because planning and management systems cannot be understood in isolation, as an end in themselves and only taking into account the object or the geographical area being administered. They are first and foremost one of the priorities and opportunities that each country has regarding its resources and development.

Secondly, a study is made of the ten aspects considered to be most important for the management of the Spanish coastal zone (BARRAGÁN, 1998): policies, regulations, duties, administration, strategies, tools, administrators, resources, information and participation. In Spain, as in many other countries, coastal management has been and is basically a public function, due mainly to the fact that it administers public owned spaces and resources. It is not surprising then that in the ten aspects that the analysis is based on, the public function dominates. Examples will be given in each section to reinforce the idea being put forward.

Finally, a plan of action is proposed which incorporates a hypothetical model of integrated management of coastal zones. It can be seen that this methodological approach pays

far more attention to the objective (management) than to the object (the coast).

Various sources have been used, including bibliography related to coastal management in Spain and other countries, documents such as reports and studies of the Spanish coast and a careful reading of related legislation. Only the most significant have been mentioned.

THE EUROPEAN AND NATIONAL CONTEXT OF COASTAL ZONE MANAGEMENT IN SPAIN

The situation is rather variable in the European context (BRIDGE, 2001). There are countries which have specific legal tools for the management of coastal zones (such as France, Portugal and Spain) while others base their administration on the coordination of the provisions of sectorial laws (e.g. the United Kingdom). On a supranational level, for some time now, the European Commission has been looking for a model which can be adapted to the different political, economic and legal realities of the member states. Although there have been many initiatives, including the "European Coastal Charter" (CONFERENCIA DE REGIONES MARÍTIMAS PERIFÉRICAS DE EUROPA, 1981), a formula has still not been found which draws together such varied interests and helps to solve the serious problems of European coastal resources.

The most recent project carried out by the European Commission, the so-called "Demonstration Programme on Integrated Management of Coastal Zones (1997-1999)", based its conclusions on observations of the situation in 35 European coastal regions (EUROPEAN COMMISSION, 1999). Some internal documents point out the need and the possibilities for action by the European institutions (COMISIÓN EUROPEA, 1995, 1997, 1999 a, b). The Council of Europe has also centred its interest on the improvement of coastal zone management: the drawing up of legislative models designed to inspire the member states and a Code of Conduct are its most recent contributions (COUNCIL OF EUROPE, 2000 a and b).

Some basic information will help to understand the Spanish context: there are 7,831 linear kilometres of coastline, of which 2,936 belong to the Canary Islands and the Balearics. Galicia (1,720 km.), Andalusia (817 km.) and Catalonia (597 km.) are the mainland regions with the greatest extension of coastline (Figure 1). In Spain there are 10 coastal political-administrative regions or Autonomous Communities which include 25 provinces and 532 municipalities (DGC, 2000).

Using legal and administrative criteria, the coast could include the surface area of the municipalities and that of the territorial waters. This administrative reality would total 142,000 km². Bearing in mind that Spain has a total of 504,000 km² and approximately 100,000 km² of territorial waters, this would mean that the coast would represent almost 24% of the national territory (DGC, 2000).

In the introduction, it was said that as well as the geographical characteristics, the management of coastal zones is connected to the political, social and economic reality of a country. Indeed, it would be extremely difficult to understand certain facts or phenomena of the coast without a wide perspective of interpretation and analysis. In Spain, the last 25 years have seen important structural changes in the afore-

mentioned aspects. The four aspects mentioned above are obviously interrelated, and a brief commentary on each of them will help to familiarize us with the operative framework of coastal management in Spain.

Changes in the Political Context

This is one of the most significant advances. For forty years until the mid-1970s, Spain suffered a military dictatorship. This was followed by a period of transition leading to a democratic system which today, a quarter of a century later, is fully consolidated. This aspect is important in itself but also because of the effect it had on the other three areas. What is more, the vast majority of authors equate "integrated management" with the democratic nature of the decision-taking process.

Changes in the Institutional and Administrative Context

The arrival of democracy brought about fundamental changes in the territorial organization of the State. In the predemocratic era, it was structured around municipalities and provinces, which played an important administrative, and to a lesser extent political, role. With the new Constitution of 1978 (article 137) the powerful Central Administration had to share public functions with another level of government that today is of great importance: the Autonomous Community (or Regional Administration).

Changes in the Social Context

Democracy and the decentralization of the State favour the participation of society in public life. However, this change comes about slowly and today the culture of participation in Spain is less developed than in other countries of the European Union. In spite of this, the number of initiatives and non-governmental organizations is increasing. It should also be pointed out that Spain ranks 21st in the Human Development Index prepared by the United Nations as part of its Development Programme (AKAL, 2001). This index covers a total of 162 countries and is based on variables like: life expectancy, level of education and income.

Changes in the Economic Context

The economic progress made in Spain is undeniable. The Gross Domestic Product (GDP), for example, has grown by an annual average of 3-4% in recent years, which is above the European average. The GDP per capita has increased from 3,818 dollars in 1975 to 18,079 in 1999. Over the last two decades, this has led to construction and modernization of infrastructures and growth in the services sector (65% of the GDP) at the expense of agriculture and industry. Tourism occupies a place of honour in the productive structure of our country, and 80% of tourism is located in coastal areas: this factor is vital to understand what has happened in the management of coastal zones.

The Spanish production system is highly dependent on coastal areas and resources. Fishing, the most successful and competitive intensive agriculture, industrial complexes, the

large intermodal transport centres etc. are all situated on, or need access to, the coast (ALVARGONZÁLEZ, 2001). In addition, the close links which are established between the large number of tourists referred to earlier and their economic activity leads to the existence of a significant amount of equipment and infrastructure.

A general characteristic of the Spanish coast is the intense human presence. A large part of the natural characteristics has been lost and the area has become densely populated: 40% of the shoreline has been developed or has been declared apt for building. At present, coastal municipalities have an average population density of about 350 inhabitants/km². To get a clearer idea of the process of demographic concentration on the Spanish coast, it should be remembered that the average national population density is 77 inhabitants/km². According to the DIRECCIÓN GENERAL DE COSTAS (2000), more than 23 million people (over half the population) live less than 50 kilometres from the coast. If, however, we take into account the seasonal nature of tourism, these figures rise to almost 1000 inhabitants/km² during the summer months.

This complex and changing context gives rise to the characteristic problems of coastal areas. In Spain, as in other European countries, the wide-ranging impact of these uses and economic activity can be seen. Loss of biodiversity and reduction in the size of critical habitats; alarming reduction of natural landscapes; crisis in the quality and quantity of some natural resources; deterioration or plundering of the historical-cultural heritage of the coast, particularly the subaquatic patrimony; loss of the *Dominio Público Marítimo Terrestre* (DPMT; public maritime-terrestrial domain) (to a lesser extent over the last decade); alteration of physical and natural processes and equilibrium; increase of the levels of risk and erosion, etc.

Most of these problems have been caused by various factors. The present situation has arisen from one or more of the following facts: excessive development of the coastline (TORRES ALFOSEA, 1997); progressive artificialization of the shoreline with engineering projects; overexploitation of certain resources, especially subterranean waters and fishing (SANTOS, 2001); the decline of some traditional activities (agriculture and stockbreeding, traditional fishing) and the introduction and rapid growth of others (plastic agriculture, aquaculture, tourism); the impact of some economic activities; the contamination of estuary and coastal waters with urban and industrial waste; inadequately designed infrastructure or location of property developments; non-accidental fires in coastal forests; privatization or misappropriation of public patrimony (VERA, 2001) and so on.

Some of the objectives or fundamental issues for the integrated management of the Spanish coast can be deduced from the above. These include slowing down the urbanization process, improving the quality of coastal waters, making rational use of continental waters, recovering certain critical habitats, controlling the exploitation of live resources, conserving (or, where necessary, recovering) the public maritime-terrestrial domain (DPMT), the reorganization of public works, protection of landscapes and natural open spaces of interest, etc.

STRUCTURAL ASPECTS OF THE PLANNING AND MANAGEMENT OF COASTAL ZONES

Having explored the general framework of the process of coastal management in Spain, we shall now look at specific aspects of planning and management. In order to analyse this process, have been chosen the ten aspects considered to be most important. While not exhausting possible areas of study, a comprehensive view is obtained in this way.

Policies for the Spanish Coastline

Coastal policy during the predemocratic period and the transition was notable by its absence. The words of a former Director General of Coasts ten years ago (OSORIO, 1990), were even more conclusive as he linked "... the historic lack of a coastal policy with the plundering and degradation of the public spaces which constitute the DPMT".

A second stage of intense political activity at all three levels of government took place from the mid-80s. Democracy was well established and the State was working firmly on the areas of competence assigned to it by the constitution, and in particular on the management of the DPMT. The 1988 Shores Act was the result of this. On a regional level, the Autonomous Communities were also demanding control of their public responsibilities. Integrated management was the byword during this decade, and was clearly expressed in the intentions of the State and the regions, mainly due to the new ideas which were prevalent in Europe.

Many political projects for change were started or speeded up during this period, in relation with certain natural resources, protected natural areas, infrastructure, and so on. But reality took hold: in spite of their good intentions, the politicians were not able to coordinate all the initiatives relating to coastal management. It is not difficult to guess what happened: there was no integration between sectorial policies (OLMOS, 1990).

The third period corresponds to the end of the eighties and the decade of the nineties. At the beginning of this period, it seemed that a structural change was being prepared in coastal planning and management. The National Government and several Autonomous Communities undertook some very interesting and original initiatives. The State, for example, developed three very interesting strategies: the central and peripheral administrative services were reinforced, the budget was substantially increased and the legal structure related to coastal management was strengthened (once again the 1988 Shores Act is a fundamental point of reference).

The regional authorities also initiated specific policies for integrated coastal management, which were abandoned a few years later. In Andalusia, for example, the Regional Guidelines for the Andalusian Coastline were passed in 1990, but the regional governments of the nineties never really took this magnificent management tool seriously.

Unfortunately, political interest in improving the administration of coastal areas and resources declined during the last decade of the 20th century. Heavy investments in tourism-related real estate projects and productive infrastructure (roads, railways etc.) or coastal engineering also related to tourism (beaches, seafronts, etc.) diverted the attention of pol-

iticians, administrators and the general public. In our opinion, coastal management policy in Spain is currently undergoing a period of stagnation. In other words, it is not considered to be of interest nor is it a priority.

The situation regarding the coastal policy of many Autonomous Communities and local institutions is also paradoxical. There seems to be a certain amount of political double-talk. For example, the value of the coastline and the pressures it is submitted to are recognised, yet very few Communities regulate this area or put into practice supramunicipal urban planning schemes. Management strategies developed specifically for the coast are very few in number and for the most part unsuccessful.

These contradictions between what is said and what is done can also be found at Municipal level. While on the one hand the 'incalculable and incomparable' value of the coast is highlighted, at the same time the best spots on the coast are given over to the insatiable demand for urban development. In both cases, the contradiction is all the greater because at both regional and municipal level, the arguments in favour of sustainable development, the legacy for future generations, a long-term outlook, *etc.* are repeated, yet all too often, short-term benefits are given priority.

Legal Structure of the Management of Coastal Zones

The importance of the coastal zone is reflected in the Constitution. It is given the status of one of the most powerful figures within the Spanish legal system—Public Property. Article 132.2 specifies that Public Property includes "the maritime-land zone, beaches, territorial waters and the natural resources of the economic zone and the continental shelf".

There is no law designed specifically for coastal management, such as that of the United States: the 22/1988 Shores Act is the closest substitute. However, it should be pointed out that this Act was designed primarily to administrate the DPMT and not the coastal zone in the wider sense (SUÁREZ DE VIVERO, 1992 a, b; MONTOYA, 1995). In spite of this, it should be considered a real milestone in that it corrected a series of historic errors in the management of the Spanish coasts (JIMÉNEZ DE CISNEROS, 1995); such as providing a much clearer and more detailed definition of the DPMT.

This Act is of great importance for the whole system of management of Spanish coastal zones (MALVÁREZ and DOMÍNGUEZ, 2000). There are four main reasons for this. The first is that it constitutes the basic legislation for the Spanish coast. Secondly, it identifies the DPMT with the coastal areas of greatest ecological and socioeconomic value: wetlands, lagoons, salt marshes, beaches, dunes, small islands, territorial sea, inlet waters, natural resources of the Exclusive Economic Zone and the continental shelf, *etc.*

The third reason is that the line which separates the DPMT from private property is used to measure restricted areas and to exert influence over private property. That is to say that the limit of the DPMT strictly determines the development of the first half kilometre of land. The Shores Act also constitutes an important meeting point for the three ba-

sic levels of Public Administration, as stated by MENÉNDEZ (1989 and 1991).

Although we have a very positive opinion of the 22/1988 Shores Act, it should be pointed out that it does not provide sufficient mechanisms to develop integrated management of the coastal zone, as stated by JOVEN and TEKKE (1994).

Another aspect worth mentioning is that there is a large quantity of sectorial legislation affecting coastal zones. This legislation attributes most of the responsibility to the national and regional government levels. As well as the laws dealing with Ports (27/1992), Water (29/1985), Protected Natural Areas and Land (4/1989), the State regulates other public functions which are of great interest for the management of coastal areas. Thus, for example, the law governing the Public Administration (30/1992, modified in 1999) contemplates various possible relations between the different public administrations (coordination, cooperation, joint plans and programmes, agreements, *etc.*).

Other related legislation within the General Administration of the State is the following: Law 38/1995 regarding access to information about the environment; Legislative Royal Decree 1302/1986 about evaluation of environmental impact; Royal Decree 258/1989 regarding the dumping of dangerous substances from the land into the sea, Royal Decree 2510/1977 concerning the drawing of straight baselines; Law 10/1977 regarding Territorial Seas; *etc.* Finally, other very important piece of National legislation for the live resources of our coast is the Fishing Act (3/2001).

The Regional Governments have also been active in the preparation of specific legislation which is of great importance for the regional coastal areas. Asturias (CONSEJERÍA DE MEDIO AMBIENTE Y URBANISMO, 1995; CULLIÁ, 1998), Andalusia (ACOSTA, 1998), the Basque Country (VILLALOBOS, 1998), and Valencia are examples of this.

In Andalusia, for instance, Decree 118/1990 approved the aforementioned Regional Directives for the Andalusian Coast (CONSEJERÍA DE OBRAS PÚBLICAS Y TRANSPORTES, 1990). In spite of being a legal tool with great possibilities for integrated planning—it contemplates the three geographic areas of the coast—it has been largely ignored by the central and regional authorities (DEFENSOR DEL PUEBLO ANDALUZ, 1995). Other pieces of Regional legislation in Andalusia, interesting for CZM, are: Land Planning (1/1994), Tourism (12/1999), Cultural Heritage (1/1991), Protected Areas (2/1989), Coastal Waters (7/1994), Sport ports (8/1988), Fishing and acuaculture (1/2002).

Division of Duties: Fragmented Management

The Spanish Constitution of 1978 (articles 148 and 149) provides the main frame of reference for the division of duties among the three basic levels of the Public Administration. Coastal areas, as a geographic space where many public uses and economic activities converge, are directly affected by this distribution of duties. The State and the Autonomous Communities control the majority of the public functions that can be found on the coast. Local authorities have very few duties directly assigned to them by the Constitution. As a result of the decentralisation process mentioned in the introduction,

Table 1. *Distribution of the main responsibilities of public management which affect coastal areas and resources.*

State Administration	Regional Administration (example of Andalusia)	Local Admin.
Public Domain (Maritime-Terrestrial, Ports, Hydraulics); Commercial Ports; Public works of general interest (coastal engineering); Basic Legislation on development, protection of the environment, mountains, forest exploitation and livestock trails; National Parks; Defense against marine pollution; Dredging; Illumination of the coast and maritime signals; Sea Rescue; Control of vessels; National Defense; management of hydraulic resources (when the waters run through more than one AC); Fishing, aquaculture and waste disposal (except in inlet waters), Defense of Cultural Patrimony, Promotion and general coordination of scientific and technical research, etc.	DPMT restricted area; Marinas and fishing ports; public works of interest for the AC; Land (and shoreline) planning, town planning and housing; environmental management; Protected Natural Open Spaces; Health and Hygiene; River fishing, sea fishing, seafood fishing and aquaculture in inlet waters; mountains and forest exploitation; Agriculture, livestock and livestock trails; Hydraulic resources and infrastructure (when they are contained within one AC); Regulation of tourism; Fishermen's Associations; Waste disposal control in inlet waters; Defense of the historic patrimony of interest for the AC; Promotion of culture and scientific research, etc.	Town planning, health, safety and cleanliness of beaches, waste water treatment

Source: Author's Own Data

the Statutes of Autonomy of the various regional entities reflect the possibilities that the Constitution assigns them.

Table 1 shows the public responsibilities affecting a coastal region in terms of coastal management. The situation in Andalusia, which has been used as an example here, is similar to that in other Autonomous Regions in Spain which have acquired a wide range of powers. The information given in the table makes it clear that when so many areas of responsibility are assigned to different administrative levels regarding a single area or resource, coordination and cooperation are vital.

Coordination is therefore often necessary as the management dividing lines are totally artificial. Take the case of fishing, where the invisible baseline separates the responsibility of the State and of the Autonomous Community over resources and users which are constantly moving from one side of the line to the other (SUÁREZ DE VIVERO, 1992 b). Or the case of marinas (Autonomous Community), many of which are situated within state port installations. Sometimes cooperation is vital as the management of one area has a direct bearing on what happens in the neighbouring area. The management of the DPMT restricted area, established in the Shores Act, is the responsibility of the Autonomous Community (Provincial Delegation of the Regional Ministry of the Environment) while the DPMT is managed by the State (Coastal Demarcation of the General Directorate of Coasts, Ministry of the Environment).

At present, coordination and cooperation between the public administrations in Spain with responsibilities for the coast is beginning to work after a decade of frictions and difficulties. There are still areas of responsibility that are not specifically assigned to a particular administration. Nor is the role of local institutions in integrated management of the coast clearly defined; in our opinion, the municipal area is under-used in this sense.

Involvement of Public Institutions

A large number of public administrations are involved in the management of coastal areas and their resources. As we

have seen, the responsibilities are divided between the three basic administrative levels. Despite the important presence of regional bodies, the State is still the most significant and decisive as regards the administrative bodies, the number of public servants and the financial resources employed.

Mention should be made of one of the most significant specific institutions involved: The General Directorate of Coasts (DGC), which is part of the Ministry of the Environment and is responsible for the DPMT. This function is carried out by the central service (DGC) and the peripheral services known as Coastal Demarcation (a total of 11), each of which has a stretch of coast assigned to it. The 800 km of coast in Andalusia, for example, are managed by two Coastal Demarcation services: Atlantic Andalusia and Mediterranean Andalusia.

Some regions have a specific administrative body for the coast, such as in the Valencian Community, whereas others do not, as is the case in Andalusia. In these latter communities, coastal management loses its specific character. Once again, Andalusia provides a useful example: the most important administrations are usually associated with the quality of coastal waters and protected natural areas (Regional Ministry of the Environment); with land use and town planning, marinas and fishing ports (Regional Ministry of Public Works); agriculture, fishing, aquaculture and seafood in inlet waters (Regional Ministry of Agriculture and Fishing); historic patrimony (Regional Ministry of Culture), etc. Each Regional Ministry tries to bring the regional administration nearer to the citizens through the corresponding Provincial Delegations.

On the local level, a lack of human and financial resources is a common situation. Local authorities are usually responsible for beaches, solid waste disposal, town planning and wastewater treatment. Regarding the management of coastal areas, it is interesting to note the role of other administrations which are legally assigned to the local level: we refer here to the Provincial Governments and the Municipal Mancomunidades. These administrations, which are situated between the regional and local levels, can contribute to improving the training of municipal technical staff, act in an advi-

sory capacity in smaller coastal municipalities and encourage them to join forces in order to maximise efficiency of scale in some services, *etc.*

Another fundamental issue is institutional coordination and cooperation. Integrated management requires the channels of communication between social agents and the institutions involved in the decision-making process to be fully open. This, in turn, means that one administration needs to be able to participate in the decisions taken by another and viceversa, regardless of the administrative level or sector of activity concerned. This involves two basic principles of the relations between public institutions: interaction and reciprocity. It is not a question of excluding any particular governing body from taking the decisions assigned to it, but of all concerned being able to have a say in those decisions. Thus the level of coordination increases and cooperation processes can begin.

An analysis of the main administrative entities and management bodies which deal with coastal areas (coasts, commercial ports, marinas, continental waters, coastal waters, protected natural areas, land use, historic patrimony, *etc.*), leads us to the following important conclusions:

- (a) In almost all the sectors studied, there are forums for the representatives of the three administrations and the users of a particular resource or activity: Port Administration Boards, Water Boards, Environment Boards, Management Boards of Parks, Land Planning Commissions, Historic Patrimony Boards, *etc.* There can be no doubt that this contributes to improving management by making it more transparent and even promotes social harmony.
- (b) The law does not oblige the Central Government to create specific bodies with representatives from other administrations. This is a totally paradoxical situation, as the management of a spacial resource, such as the DPMT, which is distributed through the three geographical areas (land, marine and intertidal) requires the cooperation of many other public institutions and social agents.
- (c) In the Autonomous Communities which do not have specific administrations for coastal management, this type of colegiate body is much less likely to exist. Nevertheless, Land Planning, while obviously not a substitute for integrated management of coastal zones, can help alleviate these shortcomings.

However, coordination and cooperation between administrations does not need to be limited to predetermined, mandatory formulas. The 30/1992 Public Administration and Common Administrative Procedure Act opens up new possibilities which are being used more and more frequently. The aforementioned act opens up new pathways which facilitate voluntary cooperation between administrations, especially between the State and the Autonomous Communities, regardless of the sector they belong to, following the principle of institutional loyalty and respect for areas of responsibility (article 4). The creation of bodies for cooperation is specified (article 5), collaboration agreements are foreseen (article 6) and there is even provision for the establishment of binding plans or programmes (article 7).

Strategies in Coastal Zones

During the analysis of the State policy at the end of the 80s, was referred to one of the few strategies for coastal management in Spain (DIRECCIÓN GENERAL DE PUERTOS Y COSTAS, 1991). On that occasion, the Central Government decided to strengthen the administration, increase the budget and improve the legal framework of coastal management. It could be said that during this period little effort was made to increase contact with other political and administrative spheres, but in spite of this criticism, coastal management was provided with a strategy that pointed the way forward.

During the following decade, part of this strategy was visibly weakened. The strong coastal management programme that was planned ten or fifteen years ago has problems such as a lack of personnel, a deficient staff training programme in integrated management techniques and insufficient technical means to develop its functions.

Nor has there been much development in the legal framework in over a decade. The legislation has not been adapted to the new concept of integrated management. It would have been interesting to try a new legislative model of coastal management, which would include the different social agents and public and private institutions in order to promote cooperation. An attempt could even have been made to go beyond the traditional geographical area covered by the State and thereby complement the management of the DPMT with improved management of the marine environment. This strategy would have encouraged the Autonomous Communities and Municipal Areas to improve their management model for the coast.

As regards the intermediate management level, the majority of regional bodies have developed a strategy which has led to the solution of various basic problems, such as the organization of their own administrations, the passing of basic legislation and the employment of a minimum number of staff and technical equipment. This situation is the result of the fact that the regional authorities are a recently created institution. Unfortunately, there are still many coastal Autonomous Communities that have not designed a management strategy adapted to the natural, socio-economic and legal peculiarities of their coastal zones.

A future model of integrated coastal management would seem to need a new and more clearly defined strategic framework. Some aspects that should be included in this process are mentioned at the end of this piece of work. Others are associated with innovation and modernization of the legal basis of management, support for voluntary tools, testing of new economic and financial tools, a new culture of interinstitutional cooperation, better training of technical staff, increased presence of non-governmental organizations, the search for social support, a concept of management which is closer to the idea of a process rather than a specific action and a more democratic and transparent decision-making process.

Organised Intervention in Coastal Areas

In this section, an analysis is made of some of the tools used in the planning and management of coastal zones in Spain. There are many forms of intervention in coastal spaces

and resources, so the large number of tools is not surprising. In order to classify them, I have opted for the simplest division of the tools available: a) strategic and b) operative. The choice of tool to be used is usually closely related to the aim (planning or management) and the scale of work.

- (a) At present, the Central Government has various tools which have a role to play in the planning and management of coastal zones. The National Plan of Coastal Actions (which is renewed on a discontinuous basis) is the only specific tool. The National Hydrologic Plan, the National Plan for Maritime Rescue and the Fight against Contamination, the National Plan for Infrastructures should also be mentioned here. Other tools of equal interest which also, directly or indirectly, affect the coast and its resources are: the Spanish Strategic Plan for the Conservation and Rational Use of Wetlands (MINISTERIO DE MEDIO AMBIENTE, 1999), the Spanish Strategy for the Conservation and Sustainable Use of Biological Diversity, the National Forestry Strategy, the National Plan for Land Use (although legal provision has been made for this, no plan has yet been developed), and the Strategic Plan of State and Port Authority-controlled Ports.

On a regional level there are also strategic tools which have been specifically designed for coastal planning. In Andalusia, the most outstanding of these are the Coastal Town Planning Programme (CONSEJERÍA DE POLÍTICA TERRITORIAL, 1986) and the Coastal Tourism Plans. As was the case with the Regional Directives for the Coast, the usefulness of these tools is extremely doubtful. The planning tools that have been more effective from a sectorial point of view include the Special Plans for the Protection of the Physical Environment (CONSEJERÍA DE OBRAS PÚBLICAS Y TRANSPORTES, 1988) the Andalusian Ports Plan, the Water Policing Plan, the Master Plan for Infrastructures in Andalusia (Programme for Waste Water Treatment), the Basis and Strategy for Regional Planning, the Land Use Plan, the Andalusia Beaches Plan (under implementation), the General Plan for Cultural Assets, the Andalusian Environment Plan (CONSEJERÍA DE MEDIO AMBIENTE, 1995), and the Andalusian Forestry Plan.

On a local level, the Municipal Strategic Plans include some interesting planning tools, although they are not exclusive to coastal cities.

- (b) Operative tools can be used for planning but also and especially for day-to-day management, and thus are usually mandatory. The most important for coastal areas are those related to the management of the Public Domain, whether it be maritime, land, hydraulic, port or roadway. The tools are those traditionally used by the central government to control boundaries, assignments, concessions, authorizations, sanctions, and so on. There are other tools of an operative nature in the form of Plans: Plans for the Use of Port Areas, Hydrological Basin Plans, Plans for the Management of Natural Resources (PORN), Use and Management Guiding Plans (PRUG), *etc.* The two latter examples are for Protected Natural Areas.

In the Autonomous Region of Andalusia there are no specific tools for the management of coastal zones. Apart from

the PORN and the PRUG in Protected Natural Areas, the so-called Integral Development Plans and Promotion Programmes (Sustainable Development Plans in the new official nomenclature) are being prepared. The operative regional tools which have the greatest effect on the coast include the Industrial Waste Adjustment Plans. The daily management of coastal water quality makes use of tools related to each case of wastewater disposal: authorization, levy and register of authorizations.

The regional government also has considerable control over town planning proposals, as even though the proposals come from the municipal authorities, it is the regional government that approves the documents. I should not, however, forget that, for coastal zones and resources, what is important is the pressure exerted by the municipalities through their planning initiatives in the General Plans for Town Planning (PGOU), which channel the pressures exerted on the coastal system by building developments. I should also remember at this point that the productive structure of the country depends to a large extent on the economic subsectors related to coastal tourism and building: hotels, first and second residences, *etc.*

Several general ideas can be noted regarding the planning and management tools used in Spanish coastal areas. The first refers to the great diversity and the large number of sectorial tools in existence. Many of them are mandatory, i.e. they are specified in the current legislation. While there is little tradition of voluntary tools in Spain, there has been an increase in such measures although with a limited amount of success in their application, except those related to the construction of infrastructures.

There are also some very interesting specific tools for coastal zones. Two main groups can be observed here: on the one hand, those that are related to coastal infrastructures and defensive constructions, which depend on the State, and on the other hand, those that are designed for more integrated planning of coastal zones, and which depend on the Autonomous Communities and local entities. The effectiveness of the former is in direct contrast with the generalised failure of the latter. The interpretation of this situation is that the pressure of land development and building activity on the tools for the planning and management of coastal zones has been such that the planning system for land resources has been rendered practically useless.

At the same time, it would seem that tools of an environmental nature seem to be more resistant to these pressures. The system of management of protected natural areas, in spite of all its defects, is a good example of this. The interrelation that can be seen in the planning and management system as a whole is very weak.

Technical Training for Integrated Management

The officials and technical staff who manage coastal areas and resources come from various professional backgrounds. In the State Coastal Administration, for example, the functions traditionally carried out—the construction of coastal infrastructure and engineering works—have influenced the profile of the people that work there, which explains the pres-

ence of a large number of engineers associated with the Public Works Department. The situation is similar at regional level where many architects and biologists are employed, due to the fact that the areas of responsibility related to town planning and environmental management are among those which have been most developed by the Autonomous Communities. Finally, the functional specialization in the planning system at local level means that a large number of technical staff are from professions related to town planning, which in Spain means mostly architects.

The proposed model of integrated management for coastal areas calls for the knowledge and practice of new intellectual skills. It is no longer a question of simply applying the current legislation, which would be the minimum expected from any of the administrative levels. Today, a good manager has to anticipate problems (proactive management) and not simply solve them when they reach the office in the form of an official report. New skills, more varied and complex than those traditionally included in the training programmes of the abovementioned professions, are also required: consensus-reaching techniques, negotiating and conflict-solving skills, communication of new experiences, *etc.*

This leads us to the conclusion that without specific complementary training, many university qualifications do not cover some significant areas of knowledge necessary for the integrated management of coastal zones. These shortcomings can be partially covered by postgraduate, specialization or masters' courses designed *ad hoc*. The Public Administration Schools and Professional Colleges can be very useful in providing this training.

Over recent years, new degrees have been set up in Spain which, while still deficient in some aspects of the training necessary for integrated management of coastal zones, incorporate some very interesting changes. These new degrees include Marine Sciences, Geography and Environmental Sciences.

Economic Aspects of Coastal Zone Management

A large part of the financial resources available for development in Spain are invested in coastal zones. The population density of these areas explains why much of the investment in productive infrastructure and equipment, for example, has taken place here. In addition, tourist and leisure activities have attracted billions of pesetas in real estate investments over the last two or three decades. This is particularly noticeable in the case of the Mediterranean coast, the Balearics and the Canary Islands.

This process of concentration of economic resources has, until now, relied on the not always rational use of coastal resources: land, water, countryside, *etc.* At the same time, it can be seen that investments aimed at the protection and recovery of these same resources are still insufficient, as is borne out by the deteriorated state of some of them. The first conclusion that can be drawn here is fairly straightforward: the profits gained from the coast are not matched by investment in maintenance, vigilance and regeneration.

It is difficult to know exactly how much is invested in the protection and conservation of coastal resources, particularly

because of the large number of actions that have been undertaken and the institutions involved. In order to present an approximate idea of the situation, we shall examine some economic aspects of the management of the General Directorate of Coasts (DGC):

- (a) The funds invested are public money coming from various sources. In Spain nearly all the money invested in coastal management comes from the public purse. As well as the funds allocated in the National Budget, provision is also made by regional and, to a lesser extent, local authorities. The Structural Funds and Cohesion Funds provided by the European Union have also made a significant contribution in recent years.
- (b) The amounts invested are limited but increasing. The funds destined for the management of the DPMT at the beginning of the period under study (1979–1982) were quite simply derisory: a scant 1,457 million pesetas (MP). However, the coastal policy which was undertaken from 1984 significantly increased these amounts: 68,200 MP in the ten years from 1983–1992.

The high point of this growth tendency came with the 1993–1997 Coastal Plan which planned an investment of 150,000 MP over the five-year period. Reality was, however, much less generous, as annual investment was far from reaching 30,000 MP. In 1997, for example, only about 13,000 MP were spent. The delays in executing the Plan meant that, while designed by a socialist government, it was continued, with substantial changes, by the conservative government that won the elections in 1996. The first of these changes was a drastic cutback in the planned investment, in line with the macroeconomic adjustment policy of the first conservative government (1996–2000). It should also be borne in mind that 85% of the programmed investment depended on the European Commission funding the projects through the Cohesion Funds.

- (c) The use given to the funds is another crucial aspect of the economic question. An analysis of what the funds were used for provides us with information about how coastal management and planning is put into practice in Spain. Funds have traditionally been used for engineering projects. For example, in the period 1983–1992 the DGC used its funds mainly for the regeneration or improvement of (mostly urban) beaches: 58% of the total budget was spent on beaches, due to the fact that they are the mainstay of tourist activity. The reconstruction or redesigning of promenades was another important area: 20% of the budget was spent on this over the same period.

The 1993–1997 Coastal Plan consolidated this engineering-oriented model of coastal management. The proportion of funds available spent on beach projects was the same as in the previous period (57%), while the amount spent on promenades increased to 35%. The remaining 8% was used for accesses, demarcation, *etc.*

The geographic location of the investments is also a significant aspect of Spanish coastal management. The distribution of the funds invested is in relation with the beach improvement policy, which, in turn, is closely related with the geo-

conomic characteristics of the Spanish coast. Thus the Mediterranean Autonomous Regions and, to a lesser extent, the islands, received the greater part of the investments. In the 1983–1992 period, the Mediterranean arch (Andalusia, Valencia, Catalonia and Murcia) absorbed almost 75% of the funds destined for the regeneration of beaches. The Canary Islands also received a substantial amount of the funds. The 1993–1997 Coastal Plan repeated this distribution system.

Therefore we can conclude that the State has given priority in its investments to work directly linked to urban coastal zones. The fact that the areas chosen for investment are mainly in tourist zones indicates that there is a productive aim in mind. In other words, the recovery or protection of natural environments has been practically ignored in budgetary terms.

The final comment on the financing of coastal projects refers to budgetary cooperation. More and more frequently, the financial contributions of the central and regional governments are conditional on the participation of other institutions. This is a new and indeed positive outlook for integrated management. It is gradually becoming more and more frequent for the three levels of government to work together on certain coastal projects, each with its own responsibilities. While there are still coordination problems, the culture of inter-governmental cooperation is developing.

Sources of Information for the Management of Coastal Areas

Great progress has been made over the last ten or fifteen years in the field of marine-coastal research. Several factors have contributed to this progress: specific lines of research carried out under European programmes such as MAST, the strengthening of Spanish scientific institutions, the creation of Institutes or Regional Research Centres run by the Autonomous Regions, the development of research carried out by private companies related to the marine environment (aquaculture, the naval and off-shore industries, *etc.*), and the creation of a network of university centres dedicated to the study of marine and coastal environments.

The Central Government has specific programmes for applied coastal research. However, as it is only some four years since the DGC was part of the ministry responsible for infrastructures, this research is aimed principally at public works and port and coastal engineering. Thus one of the main long-standing research programmes is the "Marine Climate and Oceanographic Database". As well as information about the ocean swell or currents, the State coastal administration has also taken an interest in natural phenomena related to beaches and coastal defenses.

The information required by other state administrations for their areas of responsibility is also incomplete. For example, little is known about some natural and cultural coastal resources, such as subterranean waters and subaquatic resources (sea grass meadows, certain species of fish and shellfish which are subject to large-scale economic activity, underwater archeological sites, *etc.*). On occasions, the collapse of a fishing ground (such as the *voraz*, a variety of bream in the Straits of Gibraltar at the end of the nineties) or the plun-

dering of the historical patrimony found at the bottom of the sea (as has happened over the last few decades in the south of the Iberian peninsula) could have been avoided if more information had been available about their existence.

Some regional authorities have undertaken very interesting initiatives. In Andalusia, for example, a series of monographs was prepared at the beginning of the eighties on the merits of the Andalusian coastline, dealing with coastal mountains, cliffs, coastal lagoons, coastal sandy areas and beaches, and wetlands and estuaries. The regional public television channel also made a series of programmes for general viewing on the same theme. Special cartography was even published for some stretches of the Andalusian coast which was extremely useful for planning and management: physiographic maps of the coast, which included the three geographical areas. However, neither the Central Government nor the Autonomous Regions gave any continuity to these initiatives. Since then, no new initiatives of a similar nature have been undertaken, nor have the results of those already mentioned been updated.

One of the most positive aspects of the information provided by the regional authorities is that related to their environmental responsibilities. For example, almost all the Spanish regions have a comprehensive system of coastal water quality control, the results of which are, in some cases, published annually. Information relating to cultural resources is also of an acceptable standard and readily available. The information available on the landscape and the control of town planning processes is particularly insufficient or inadequate in its format or presentation. Finally, there is not an institutional procedure for assessing the environmental quality of coastal areas for management in the local level (CENDRERO and FISCHER, 1997).

The Participation of Social and Institutional Agents in the Decision-Making Process

In general terms, it can be said that participative cultural in Spain is less developed than in other European countries with a longer tradition of democracy. Although public participation processes are well defined in the current legislation, it tends to be more of a formality than an effective measure. At the planning stage, for example, participation often begins when the technical document has already been drawn up, making it very difficult to modify the original proposals.

In order to have a clear idea of the situation in Spain, we have been analysing the make-up of the governing bodies of the state and regional institutions for the most important laws related to coastal management. On a national scale, this involved examining the provisions made in the laws governing the Coast, Ports, Waters and Protected Natural Areas. The absence of social and institutional agents in the decisions affecting the DPMT was noted, as there is no participative body. In other sectors of activity, there is considerable presence of representatives from the three levels of government, with a fairly well balanced social representation.

In Andalusia, the decision-taking bodies related to the management of land use, cultural resources, the environment and port activity (leisure and fishing) were examined. The

Regional Government itself is logically well represented institutionally, as are the local authorities. We were, however, surprised to find that the Central Government is not adequately represented in certain areas of coastal management (culture and environment, for example), that is, the level of representation is less than expected, especially bearing in mind that the regional authorities are well represented on the governing bodies of areas that come under the responsibility of the State. It is also surprising to note that environmental groups are not represented in the decision making process regarding land use.

RESULTS: GENERAL DIAGNOSIS OF THE MANAGEMENT OF THE SPANISH COAST

The importance of the coast and its resources for Spanish society is unquestionable. Over recent decades, there has been a general movement towards the coast. The population, infrastructures, industry and economy of the country have tended to head for the shore. There are few exceptions to this tendency, the most outstanding of which is the capital city, Madrid. The coastal area therefore has a strategic importance which is not always recognised.

In the preceding pages, ten of the most important aspects of coastal management in Spain have been analysed. In most cases, we have seen the advances made over the last twenty-five years, the shortcomings, and some suggestions for improvement. In Table 2, some of these ideas are set out, along with others not mentioned previously for lack of space, allowing for a global evaluation of the situation.

The general evaluation of the situation leads us to recognise important shortcomings which are, in turn, responsible for the fact that there is no system of integrated management for coastal zones. In this sense, Spain is not fully integrated into the new international tendencies. This is true even when recognising the considerable progress made during the last twenty-five years in terms of the administration of coastal areas and resources. This progress is, however, insufficient. Considerable pressure is exerted by our economic structure, based to a large extent on leisure-related activities. Another difficulty is the organization of a decentralized State. Better interrelation mechanisms are needed in this three-tiered system of government where responsibilities in coastal areas are shared.

One has the impression that this period of time could serve as the preparation for another stage in the process of coastal management; as if, slowly but surely, progress is being made towards a more integrated and more advanced model. Some interesting possibilities are opening up in order to achieve this aim, such as the growing public awareness of coastal problems. Advantage must be taken of opportunities that arise in our system of administrative organization and initiatives sponsored by the European Commission.

The main conclusion that can be drawn from our diagnosis is that the changes that have taken place in Spain have not been matched by the changes needed in coastal management. While there has been a notable increase in the social and economic dependence on the coastal area and resources, the

Table 2. *Ideas for a diagnosis of the planning and management of coastal areas (PMCA) in Spain.*

Aspect of PMCA	General Diagnosis
1. POLICY	Not a priority area in public policy; there is not an explicit, well-defined coastal policy; development is given priority over conservation of resources; few policy initiatives for integrated management during the 90s.
2. LEGISLATION	Abundant and wide-ranging; important progress made over the last 25 years, legislation for DPMT but no specific text for integrated management; relatively ineffective coastal regulation at regional level.
3. RESPONSIBILITIES	Important at State (Public Domain) and Regional (Coastal planning) level; the provisions set out in the Constitution make co-ordination and cooperation necessary; local authorities play a relatively unimportant role.
4. ADMINISTRATION	Specific State coastal Administration; varied situation in the regions; no coastal coordination bodies; weakening of legislative base, financial resources and personnel during the 90s; no well-defined strategy at present.
5. STRATEGIES	During the 80s, interesting management strategies developed for legislation, financial resources and personnel, which were weakened in the 90s. At present, there is no well-defined strategy.
6. TOOLS	Numerous and varied in nature; no national or regional integrated management programmes; the most effective ones are related to engineering works; relative failure of those related to land use.
7. ADMINISTRATORS	Notable shortcomings in specific training for integrated management; insufficient importance given to intellectual skills necessary or integrated management.
8. RESOURCES	Of public origin; No relation between the profits gained from the coast and the resources destined for its conservation; resources allocated according to purely productive criteria.
9. INFORMATION	There is no system to centralize coastal information; improved knowledge of marine areas is called for; there is little information on the aims and results of management.
10. PARTICIPATION	Serious defects in social and institutional participation in the coastal management process; the State is not sufficiently represented in decision-making bodies at regional level.
GENERAL EVALUATION	There are serious shortcomings in the coastal management system. At present, there is no integrated management; important but insufficient progress made during the 70s; the period 1975–2000 can be defined as a period of transition towards more integrated management.

Source: Author's Own Data.

current management system has not been adapted to fit these changing circumstances.

TOWARDS THE URGENT IMPROVEMENT OF THE PLANNING AND MANAGEMENT SYSTEM OF THE SPANISH COAST

The following are possible strategies which could be used to improve the present system of coastal management. Most of them could be useful in themselves in isolation but they are more effective when implemented as part of a collective strategy. I do not intend, however, to make an exhaustive list of possible lines of action. My more modest intention is to offer some ideas which may serve as a basis for debate about the Spanish model for integrated management of coastal zones.

- (a) Special attention should be paid to coastal areas and resources by defining a specific policy, particularly at national and regional government levels.
- (b) Basic legislation should be passed for the management of coastal areas which, while respecting the division of responsibilities set out in the Constitution, should encourage coordination and cooperation between the three levels of government, and between the latter and the other social and institutional agents.
- (c) Clearer definition is needed of the responsibilities of each level of government regarding certain geographical areas and activities. Wider responsibilities and more resources for local authorities.
- (d) A redefinition of State coastal administration should be carried out, with more measures for the protection and conservation of the environment, and the creation of a participative governing body to make the decision-making process more democratic and transparent.
- (e) Some of the strategies put into practice by the State and some Regions in the late eighties and early nineties should be recovered, and new strategies implemented, such as the demarcation of coastal areas and the natural and cultural resources that are the object of special treatment.
- (f) A National Programme for the Integrated Management of Coastal Zones should be passed, along with the corresponding Regional Programmes (as well as Local Plans). The different sectorial tools need reinforcing, especially the plans for land and water use, protected natural areas and live resources (fish, seafood and so on).
- (g) Training of technical staff responsible for coastal administration should be improved to include multidisciplinary studies and intellectual skills in reaching consensus and conflict management.
- (h) The funding of the National (and Regional) Programmes for the Integrated Management of Coastal Zones should be ensured for at least the medium term. This should be accompanied by a balance between purely productive investments and those aimed at the protection and conservation of coastal areas and resources.
- (i) Initiatives should be promoted related to scientific research of the coastal system and to increasing the level

of awareness of public efforts to improve its administration.

- (j) New forms of public participation should be established to reinforce the presence of citizens in areas where the decisions taken affect the coast. A balancing-out of the representation of the different levels of government in the various governing bodies, particularly the representation of the State in regional institutions, is also necessary.
- (k) Public awareness and education related to coastal resources should be increased.
- (l) Transnational Cooperation Programmes should be prepared in collaboration with our European partners (Portugal, France and Italy) and neighbouring countries (Morocco, Algeria and Mauritania).

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□ RESUMEN □

En este trabajo se analizan los diez principales aspectos de la planificación y gestión de las áreas litorales en España. Tales aspectos se han estudiado dentro del contexto general del país. Los diez aspectos analizados, además, pueden ser interpretados como una propuesta de análisis de la gestión costera de un área determinada. Aunque es posible estudiar otros asuntos de interés para la gestión costera de España, los diez considerados más importantes son: política costera, legislación, reparto de responsabilidades, instituciones, estrategias, instrumentos, técnicos, recursos económicos, conocimiento e información, y participación.

En los últimos veinticinco años han tenido lugar cambios estructurales decisivos de naturaleza política, institucional, social y económica. Estos cambios han contribuido de forma significativa a mejorar el sistema de planificación y gestión litoral. No obstante, este sistema no puede ser definido como integrado. Además del diagnóstico general elaborado se proponen algunas directrices que pueden mejorar la gestión costera española en el futuro.