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**WORLD MARITIME UNIVERSITY**

Malmö, Sweden

**Bottlenecks in the Implementation of Integrated  
Coastal Zone Management: An Integrated Coastal  
Zone Management Action Plan for Turkey**

By

**H.ILYAS KARABIYIK**

**Turkey**

A dissertation submitted to the World Maritime University in partial  
Fulfillment of the requirements for the award of the degree of

**MASTER OF SCIENCE**

**In**

**MARITIME AFFAIRS**


**(MARITIME SAFETY AND ENVIRONMENTAL ADMINISTRATION)**

2012

## ***DECLARATION***

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

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I am everlastingly grateful to my beloved parents and sisters, whose love and trust encourages me.

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## ***ABSTRACT***

Title of Dissertation: **Bottlenecks in the Implementation of Integrated Coastal Zone Management: An Integrated Coastal Zone Management Action Plan for Turkey**

Degree : **MSc**

Due to their strategic, economic and social value, the importance of coasts in the world is increasing day by day. Many developed economies are in the process of Integrated Coastal Zone Management (ICZM) which is not a new term for the academic world. But there is a long way for undeveloped and developing countries regarding implementation of ICZM including Turkey.

This dissertation is a study of the evaluation of the coastal zone management in the world and Turkey with the analysis of lessons taken.

An overview of the ICZM implementation process in different countries in the world, including the best practices and the less successful ones, success and failure factors and enhanced bottlenecks are examined. Additionally, the current situation of the Turkish coasts in terms of coastal zone management is analyzed taking into account types of coastal zones or areas, legal basis and institutional capacity.

The concluding chapter puts forward a proposal for An Integrated Coastal Zone Management Action Plan for Turkey including capacity building, legal and institutional framework and sustainable development within an overview of the study.

**KEY WORDS** : ICZM, coordination, bottlenecks, best-practices, strategies, actions.

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## **LIST OF ABBREVIATIONS**

<b>AQAP</b>	: Allied Quality Assurance Provision/Publication
<b>CAMP</b>	: Coastal Area Management Programme
<b>CBOs</b>	: Community-Based Organizations
<b>CZM</b>	: Coastal Zone Management
<b>DWT</b>	: Deadweight tonnes
<b>EEZ</b>	: Exclusive Economic Zone
<b>EIA</b>	: Environmental Impact Assessment
<b>EPASA</b>	: Environmental Protection Agency for Special Areas
<b>EU</b>	: European Union
<b>EUROMED</b>	: Euro-Mediterranean Transport Forum
<b>FAO</b>	: The UN and Food & Agriculture Organization
<b>GDNCNP</b>	: General Directorate for Nature Conservation and National Parks
<b>GEF</b>	: Global Environment Fund
<b>GIS</b>	: Geographical Information System
<b>HERMES</b>	: Hotspot Ecosystems Research on the Margins of European Seas
<b>IAIA</b>	: International Association for Impact Assessment
<b>ICM</b>	: Integrated Coastal Management
<b>ICOM</b>	: Integrated Ocean and Coastal Management
<b>ICZM</b>	: Integrated Coastal Zone Management
<b>IMO</b>	: International Maritime Organization
<b>IOM</b>	: Integrated Ocean Management
<b>ISO</b>	: International Organization for Standardization
<b>IWW</b>	: _Institut für Wirtschaftspolitik und Wirtschaftsforschung
<b>KAY</b>	: National Committee on Turkish Coastal Zone Management
<b>LDT</b>	: Light Displacement Tonnage
<b>M.D.</b>	: Ministers Decree

<b>MARPOL</b>	: International Convention for the Prevention of Pollution by ships
<b>MedPAN</b>	: Network of managers of marine protected areas in the Mediterranean
<b>NGOs</b>	: Non-governmental organizations
<b>O/D</b>	: Origin-Destination
<b>OSPAR</b>	: Oslo and Paris Conventions
<b>PAP/RAC</b>	: Priority Actions Programme / Regional Activity Centre
<b>PEGASO</b>	: People for ecosystem-based Governance in Assessing Sust. development
<b>REMPEC</b>	: Response Centre for the Mediterranean Sea
<b>RTAP</b>	: Regional Transport Action Plan
<b>SADAFAG</b>	: The Underwater Research Society Med. Monk Seal Research Group
<b>SAFEMED</b>	: Euromed cooperation on Maritime Safety&Prevention of Pol.from Ships
<b>SDI</b>	: Implementation of a Spatial Data Infrastructure
<b>SEPA</b>	: Special Environmental Protection Areas
<b>SOLAS</b>	: International Convention for the Safety of Life at Sea
<b>SSA's</b>	: Standard Spending Assessments
<b>TEU</b>	: Twenty feet equivalent unit
<b>TINA</b>	: Technical Assistance to Transport Infrastructure Needs Assessment
<b>TURKLIM</b>	: Turkish Port Operators Association
<b>UN</b>	: United Nations
<b>UNCED</b>	: United Nations Conference on Environment and Development
<b>UNCLOS</b>	: United Nations International Convention on Laws on the Seas
<b>UNEP</b>	: United Nations Environment Program
<b>UNDP</b>	: United Nations Development Program
<b>US</b>	: United States
<b>VACLAV/ NEAC:</b>	A modelling platform
<b>WFD</b>	: Water Framework Directive
<b>WTO</b>	: World Tourism Organization
<b>WWF</b>	: World Wildlife Fund

## **1. INTRODUCTION**

On the global level, coasts form 20% of the Earth's surface and approximately 50% of the entire human population lives within 200 km of a coast. Coastal ecosystems are very highly productive containing rich fishery resources, biological diversity and significant seabed minerals.

Coasts also support a diverse array of related industries (fisheries, aquaculture, tourism, shipping, oil and gas industries), which provide enormous economic productivity.

Because of the shared demands placed by densely populated coastal regions, they impose stresses on finite coastal systems and resources. For example, water quality is affected by pollution from both ships and from land-based sources, with the latter having the more significant impact on coastal ecosystems.

At the global level, 48% of fish stocks are fully exploited and 28% are depleted, overexploited or recovering. Also the growing dependence on fossil fuels continues to aggravate global climate change with several consequences for coastal ecosystems and inhabitants.

The multitude of activities associated with these industries can also create conflicts of use among stakeholders.

Furthermore, the marine environment is a diverse, dynamic, complex area with major environmental issues. There is a continuing pressure on marine environment from conflicting activities including aquaculture, agriculture, fisheries, urbanization, industrial developments, shipping, conservation and tourism. The scale and public opinion on individual development projects is unprecedented and there are increasing legal challenges (IAIA, 2008).

In terms of coastal management, in the beginning of industrialization, countries were just looking to develop their economies. But after experiencing the negative effects of this rapid development on their coasts, without preserving nature and its resources, they realized that unplanned development without environmental protection can be more harmful to economies than its growth.

So all these factors led countries to use their coastlines as effectively as they can because these coastal environments are very sensitive and the effects of a pollution incident like the Deep Water Horizon, Prestige or the Erika accidents are very detrimental to the economies and lead social failure of society.

Also most of the countries' coasts belong to the public so everyone who is a citizen of this state has a common right to use the coasts. Over three decades, these factors have led the academic world to formulate a new concept called Integrated Coastal Zone Management (ICZM).

In the first chapter of this dissertation; the term ICZM, the legal basis for this concept, management tools, methodologies, process, measures, benefits, bottlenecks and barriers to ICZM along with reasons for failure and success in its implementation will be discussed.

In chapter two, the current situation of coastal management in Turkey with its shore facilities: ports, shipyards, marinas, fishing quarries and special areas including tourism areas, military areas and forests will be defined.

Further the author will analyze the structure of ICZM in Turkey, and outline the responsibilities of coastal zones and coastal facilities, previous studies on Turkish coasts, proprietorship of the public on coasts and the legal concept of ICZM and coasts on a national level.

In chapter three “An Integrated Coastal Zone Management Action Plan for Turkey” will be offered with its Outline, Preparation Stage, Structure of Plan (Committees, Councils), Entry into Force and Implementation and Updating Procedures.

In the literature there are many studies on Integrated Coastal Zone Management but they mostly focus on the implementation of this concept from a theoretical basis. Also most of the studies are so general that they cannot be used as a road map because the Integrated Coastal Zone Management process is implemented on a national basis and every country has its own dynamics. Therefore, the author will research the practical implementation aspects that are often not deeply researched in the academic world.

The purpose of the research is to find out why the Integrated Coastal Zone Management concept has not been effectively implemented in many countries and regions of all over the world for decades, and to find a suitable methodology to implement ICZM in Turkey.

In this concept, the objective is to find out why various plans have not been implemented and identify the obstacles faced through the different studies across the world and Turkey. And also to study countries in which Integrated Coastal Zone



Management could not be implemented properly and to find out whether there is a problem in means of integration or not.

Country-based case studies which can be found in the World Bank and European Union data bases and other resources will be used and integrated into this concept. And whilst taking into consideration several examples of failures, the author will also examine successful cases.

Therefore, this study will be unique as it mainly concentrates on reasons for failure and success in ICZM implementation and will examine the lessons learned that can be applied to Turkey.

It is obvious that although ICZM has been studied for three decades, it still has a long way to go for many countries in the world to implement it in an effective manner.

## **2. CHAPTER II**

### **2.1. ICZM Concept**

#### **2.1.1. Defining the terms ICOM, IOM, ICM and ICZM**

ICOM (Integrated Coastal and Ocean Management), IOM (Integrated Ocean Management) or ICM (Integrated Coastal Management) or ICZM (Integrated Coastal Zone Management) are like the different coasts of the same sea. The important factor is which of the terms you will deal with more in the study, coasts or oceans or both.

What is now widely recognized in the literature as ICZM was conceived in the early 1970s as Coastal Zone Management (CZM). The concept was consolidated in the USA in 1972, when the Coastal Zone Management Act was passed, as an attempt to resolve the increasing anthropogenic pressures on coastal resources (Millemann, 1995).

In the 1980s, the term “integrated” was added when it became clear that the effective management of coastal areas requires an inter-sectorial and governmental approach. The main difference between ICZM and the earlier CZM is that the former attempts a more comprehensive approach – taking account of all of the sectorial activities that affect the coast and its resources and deals with economic and social issues as well as environmental/ecological concerns (World Bank, 1993).

The inclusion of ICZM as one of the principal recommendations of Agenda 21, at the United Nations Conference on Environment and Development (UNCED) – the Earth Summit - in Rio de Janeiro, 1992 gave the concept both international prominence and political legitimacy.

There is no shortage of definitions for ICZM but a comprehensive one is: “A dynamic and continuous process of administering the use, development and protection of the coastal zone and its resources towards common objectives of national and local authorities and the aspiration of different resource user groups” (Knecht and Archer, 1993).

The main principals of ICZM as identified by the European Union include (Evaluation of ICZM in Europe, Final Report, 2006):

- Adopting a wide ranging view of inter-related problems;
- Decision making based on good data and information;
- Working with natural forces;
- Involving all stakeholders and all relevant parts of the administration;
- Using a range of instruments (laws, plans, economic instruments, information campaigns, voluntary agreements, promotion of good practices, etc.) for coastal management.

### **2.1.2. The Strategic Importance of Coasts and Necessity of ICZM**

Coasts are home to a large percentage of world citizens, a major source of food and raw materials, a vital link for transport and trade, the location of some of our most valuable habitats and the most favored destinations for leisure time.

However, the attractiveness of coastal zones is under increasing pressure: coastal resources are depleted beyond their carrying capacity; scarcity of space leads to conflicts between uses, there are large seasonal variations in population and employment, and the natural ecosystems that support the coastal zones suffer from degradation.

Also the coastal areas are particularly exposed to risks by the possible impacts of climate change. In addition, conflicts of interest arise from demand for coastal space and resources. (Evaluation of ICZM In Europe, Final Report, 2006).

### **2.1.3. Objectives of ICZM**

As summarized from the Evaluation of ICZM in Europe Final Report, (2006) ICZM Processes should focus on specifying objectives such as:

- Strengthening sectorial management, for instance through training, legislation, and staffing,
- Preserving and protecting the productivity and biological diversity of coastal ecosystems, mainly through prevention of habitat destruction, pollution, and overexploitation
- Promoting rational development and sustainable utilization of coastal resources.
- Promoting sustainable coastal development in regional seas basins,
- Ensuring a sustainable future for local coastal communities,
- Protecting the coastal environmental and natural resources,
- Ensuring a balance between coastal development and the need to protect the coastal environment and its natural resources,
- Ensuring a balanced spatial development in land and sea parts of coastal zone,
- Improving the governance and resilience of coastal zones to climate changes,

- Enhancing the prevention of natural and technological risks in coastal zones,
- Stimulating sustainable economic growth in coastal areas.

#### **2.1.4. Elements of the ICZM Process**

Coasts are not uniform by nature; they are shaped by differing physical, social, economic, biological and cultural factors. As a result, there is no one standard for implementing an ICZM solution.

In general though, the implementation of an ICZM policy, program or project in a region usually requires a number of iterative stages, which form part of a typical policy or project development cycle. Cummins (2003) suggests that these stages can be broken down into five steps as follows.

##### **2.1.4.1. Identification of issues**

The first stage of the ICZM process involves the definition and assessment of the issues relating to these problems. This usually involves a comprehensive evaluation of the current status of the physical, social and economic, engineering and management fabric of the coastal environment, bringing together information to produce a coastal profile.

##### **2.1.4.2. Plan preparation Stages**

This stage consists of 3 steps:

- Outlining the objectives of the ICZM program,
- Defining directions and levels of integration and
- Planning institutional arrangements.

#### **2.1.4.2. a. Outlining the objectives of the ICZM program**

A fundamental component of any programme is a clear statement of its objectives. The objectives to be achieved within an ICZM programme can become clear following the coastal profile which should reveal the extent of coastal problems and the inefficiencies of the current management regime.

Programme objectives should be accompanied with a vision of when and how these objectives are to be achieved, including plans for proposed institutional arrangements and funding mechanisms.

Widespread consultation should accompany this phase of plan preparation to ensure that the plan will be endorsed by all decision makers and supported by stakeholders.

#### **2.1.4.2. b. Defining directions and levels of integration**

There are several types of integration that can be achieved by the ICZM process. The expressions ‘vertical integration’ (across levels) and ‘horizontal integration’ (across sectors) are commonly used to describe two primary types of integration perceived as important for effective ICZM.

Other types of integration include international integration, which is particularly relevant across shared borders; integration of government and non-government organizations; and the integration of science and management.

Various options for institutional reorganization can provide improved integration within predefined structures such as government bodies.

While bureaucracy and administration can hinder the direction and advancement of integration in these types of organizations, an even greater challenge exists to integrate coastal communities within the ICZM process.

#### **2.1.4.2. c. Planning institutional arrangements**

It is necessary to institutionalize ICZM to sustain ICZM efforts, strengthen integration and co-ordination, and streamline budget and human resources. This stage of the plan preparation involves defining the roles of institutions that will participate in the ICZM process at all levels – at the national, regional and local level.

It is necessary to specify the relationships between the institutions and to establish structures for enhanced integration between them. These arrangements can be legal or otherwise.

The introduction of radical institutional change is often less favored than the gradual introduction of mechanisms for strengthening institutional communication and integrated decision-making.

#### **2.1.4.3. Formal adoption and funding**

The potential benefits to be gained from a project-based approach to ICZM are often overshadowed by the need to secure more funding to ensure continuation of the ICZM project process (the ‘hamster wheel’).

Innovative ICZM financing mechanisms that can be utilized are:

- **Public Private Sector Partnerships:** This approach involves cooperative ventures between local government and the private sector,
- **Revolving Funds:** A pay back mechanism that can be useful for supporting environmental improvement projects or services. It increases responsibility on behalf of participants at the national or sub-national level. It also ensures sustainable use of financial resources.
- **Private Sector Funds:** Involving co-financing from coastal users. This approach can enhance responsibility and increase cost effectiveness,
- **Investment Funds:** This financing approach involves the identification of investment opportunities to generate capital.

#### **2.1.4.4. Implementation**

ICZM programs can be implemented at a number of levels including at national, regional and local levels. The level of implementation should be selected according to the geographical scope of the problems to be managed.

National programmes ensure that a plan exists for the entire coastline. Regional programmes are appropriate for stretches of coastline with common coastal issues and characteristics, (e.g. rural coastlines).

Local ICZM programmes are suitable where particular problems exist within a clearly delineated geographic area. Separate programmes for determined zones may also be solely near shore (coastal) or offshore (ocean) or a blend of both.



#### **2.1.4.5. Monitoring and evaluation**

The final stage of the ICZM process involves monitoring and evaluation of the programme once it has been implemented. The success of ICZM programmes can be evaluated according to: performance evaluations, evaluation of management capacity and outcome evaluations.

#### **2.1.5. The Benefits of ICZM**

One of the objectives of ICZM is to reduce or eliminate problems that encountered in the ICZM implementation process, resulting in ethical and economic benefits which are:

- Better understanding between stakeholders and authorities in the coastal zone,
- Improved governance of the coastal zone and coastal environment,
- More efficient use of coastal resources and more transparent planning and management of the coastal zone,
- Improved quality of life for coastal communities and increased resilience to coastal risks and impacts of climate change,
- Better coastal defense solutions - opportunities for sustainable economic growth,
- Improving water quality by various means to reduce water intake treatment costs,
- By sustainable development plans and environmental protection, increase water species productivity and increase availability of areas for swimming,
- Increasing the output of some products or (ecological) services by, e.g. constructing artificial reefs to provide habitat for fisheries thereby increasing fish output,
- Reducing conflicts among or between various users of the coastal resources.

Because of these factors it is beneficial for every coastal nation to consider implementing an ICZM Process.

However, from a practical sense, for coastal nations with smaller coastal zones, or overlapping zonal claims, the ICZM process may require bilateral or multilateral cooperation, which may or may not be possible depending upon the strength of relationships between the neighboring coastal states. (European Commission, 2000)

#### **2.1.6. Strengths in Implementing National ICZM Processes**

There is no international convention or regulation concerning the implementation of ICZM as a mandatory instrument like IMO conventions.

So it is necessary to check national ICZM Policies and some of the key factors inhibiting ICZM implementation from national to local levels in order to understand the strengths in implementing this concept on a national level. As suggested by Shipman and Stojanovic (2007) these factors are as follows.

##### **2.1.6.1. The Complexity of Responsibilities**

Local authorities and other agencies suffer due to the degree of confusion as to the division of responsibilities on the coast. This is exacerbated by sectorial management below the mean low water mark and the division of responsibilities in which the local authority does not have a clear mandate.

#### **2.1.6.2. Information Blocks, Gaps, and Obstacles**

There can be an information gap between the real needs of the coastal community and the substantial amount of coastal research and data collection carried out at every level.

The lack of interaction between administrative and sectorial layers cannot be overcome by technology alone, but by tighter coupling and an ongoing dialogue between the research community and those with practical responsibilities for the coast.

Without a general coordinating role played by a regional or local ICZM initiative, data and information is likely to continue to be collected and stored on an ad-hoc, project-by-project basis. This limits sharing of data between interested stakeholders and the publication of data to general public.

#### **2.1.6.3. The National Policy Vacuum**

Another strength is a national policy vacuum that leaves local authorities with little or no effective guidance on how to deal with many complex issues in an integrated manner. Local authorities in particular are frequently left acting as adjudicators between different competing interests that are often outside local authority jurisdiction.

#### **2.1.6.4. The Democratic Deficit**

Beyond the jurisdiction of local authorities, many decisions in the coastal zone continue to be made without the opportunity for public comment or local democratic accountability.

These extend from the allocation of natural resources, such as fisheries, the exploitation of hydrocarbons and aggregates, and the regulation of major pollution risks that are primarily land-based sources, through to the licensing of physical construction. There is little opportunity for local authorities to have an influential role or to reflect the concerns of the coastal community, as authorities can on land community. This is maybe because of the feeling of freedom that seas give to human being.

#### **2.1.6.5. Durable Funding**

The emphasis on the need for long term funding seems to exclude yet more short-term project funding from government or other sources such as a lottery.

Two key options may be proposed: firstly, through use of the complex “Standard Spending Assessments” (SSA’s) for local authorities by which the central government distributes funding to local authorities.

Secondly, and less complex, is for direct funding for core costs on a contractual period linked to the preparation of management plans and their implementation.

#### **2.1.6.6. Aligning Policies**

A comprehensive regional or national marine strategy could identify the need and criteria for the identification of coastal areas of national, regional and local importance.

A range of environmental legislation will continue to drive planning and management at the coasts and programs like the Marine Thematic Strategy, Marine Spatial Planning; Spatial Development Perspective.

## **2.1.7. Legal Basis of ICZM**

### **2.1.7.1. International Policies/Conventions Supporting ICZM**

A number of international conventions exist which are of relevance to the coastal area. These conventions address issues such as biodiversity, marine pollution, fishing and maritime safety.

The inclusion of ICZM as one of the principal recommendations of Agenda 21, at the United Nations' Earth Summit in Rio de Janeiro has already been discussed but there is no mandatory international convention in force for ICZM.

However, the European Union (EU) and some developed countries like the United States have their national ICZM Regulations in force and also ICZM Plans and Processes are utilized. (Evaluation of ICZM In Europe, Final Report, 2006).

Also there are strong collaborations such as Jakarta Mandate on Marine and Coastal Biological Diversity in 1995, which is a global consensus on the importance of marine and coastal biological diversity and is a part of the Ministerial Declaration on the implementation of the Convention on Biological Diversity.

The programme of the Jakarta Mandate covering the five themes namely Integrated Marine and Coastal Area Management, Marine and Coastal Living Resources, Marine and Coastal Protected Areas, Mariculture and Alien Species is developed to assist in mitigating the problems faced by marine and coastal ecosystems. Also it outlines the importance of marine and coastal biological diversity and status of the marine and coastal resources in the East Asia Seas region. (Pranato&Arifin, 2001)

Other international conventions of significance are:

- United Nations International Convention on Laws on the Seas (UNCLOS), 1982;
- International Convention for the Prevention of Pollution by ships (MARPOL), 1978;
- The UN and Food & Agriculture Organization (FAO) Conference on a Voluntary Code of Conduct for Sustainable Fishing, 1995;
- Ramsar Convention on Wetlands of International Importance, 1971;
- UN Framework Convention on Climatic Change, 1992;
- Washington Global Program of Action for the Protection of the Marine Environment from Land-based Activities (United Nations Environment Program [UNEP]), 1995;
- Bonn Convention on the Conservation of Migratory Species, 1979;
- Bern Convention on the Conservation of European Wildlife and Natural Habitats, 1979.

#### **2.1.7.2. Regional Seas Policies**

While some of the threats to ocean and coastal area environments can be approached more effectively on a global scale, their individual characteristics and relevance tend to vary from region to region, and from sea to sea. The regional seas focus is based on periodically revised action plans adopted at high-level intergovernmental meetings. In most cases these action plans are implemented within the framework of legally binding regional conventions, under authority of signatories. The regional seas approach to management allows for greater collaboration between signatory nations and for the transfer of technology, information and experience in ICZM.

On a regional policy basis, the conventions between countries regarding mainly co-operation for protection of the marine environment are as follows.

- Barcelona Convention: The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean; adopted on 16th February 1976, in force 12th February 1978; revised in Barcelona, Spain, 9-10th June 1995 as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.
- OSPAR Convention: The Convention for the Protection of the Marine Environment of the North-East Atlantic - Oslo and Paris Conventions; adopted 1974, revised and combined into OSPAR Convention 1992, in force 1998.
- Helsinki Convention: Convention on the Protection of the Marine Environment of the Baltic Sea Area; adopted 1974, in force 1980, revised 1992, in force 2000.
- Bucharest Convention: Convention on the Protection of the Black Sea Against Pollution; adopted 1992, in force 1994. (Evaluation of ICZM In Europe, Final Report, 2006)

### **2.1.7.3. National policies**

In today`s world, with the existence of the United Nations, the European Union and other international unions, most of the national policies are directly related to some international or regional conventions and regulations. But concerning ICZM implementation there is not such a mandatory convention or international regulation, so countries are more independent regarding ICZM implementation.

Most of the developed countries have put the ICZM concept into their national legislation and are implementing it properly. Some developing countries are aware of the importance of ICZM while many are not. For undeveloped countries, they are dealing with coastal planning because their economies are dependent on the coastal regions and they are aiming for sustainable development of these resources.

## **2.2. ICZM Implementation**

### **2.2.1. Bottlenecks for ICZM**

The term bottleneck refers to the shape of a bottle and the fact that the bottle's neck is the narrowest point, and thus the most likely place for congestion to occur, slowing down the flow of liquid from the bottle (Investopedia, 2011).

The major bottlenecks for the implementation of ICZM are as follows.

To ensure public participation in the planning processes of ICZM is a major subject, and maybe one of the most important. Access to information, a voice in decision-making, transparency, post-project analysis and monitoring are tools for public participation.

Sustainability of natural resources is another important factor. Because, natural resources are important for both economic and social reasons.

The reduction of vulnerabilities of people living in the coastal zone is an important objective of ICZM and these vulnerabilities are an important bottleneck in the sustainability of livelihoods and socio-economic development of the coastal zone.

Education, awareness and information programs on coastal zone management, coordinated implementation of policies and legislation, inadequate capacity, research and insufficient human resources to address coastal zone management issues are other noteworthy subjects as bottlenecks for sustainable coastal development and ICZM.



### **2.2.2. Reasons for Failure or Success in the Implementation of ICZM**

There are several important factors which individually, in conjunction or in conflict with each other, either support or hamper progress of ICZM, which will be evaluated below as major success or failure factors. As summarized from the 'Evaluation of ICZM In Europe, Final Report, 2006' the main success and failure factors for progress in ICZM are discussed in the following two sections.

#### **2.2.2.1. Factors for the success of ICZM Programs**

One obvious important point is the size of a country in relation to the length of its coastline. For those countries that are small, especially those that are islands, almost all land area is influenced by the sea and thus forms a coastal zone.

Usually strong pressures from the tourism industry and other industries related to coastal zones exacerbate the need to organize the country in such a way that negative developments along the coast are addressed.

The role which the central government can and must fulfill is to stimulate the development of ICZM, even if implementation in such countries is at the heart of regional and local governments. The setting-up of a national institution fulfilling a sort of a caretaker- or guardianship role thus seems very important.

In many instances ICZM has been perceived as a complex and difficult matter that various stakeholders do not understand and, thus, have problems supporting.

Therefore, in such instances preceding or on-going ICZM projects have not only been very useful in collecting technical experiences but also in introducing the idea and

propelling the local and national discourse. Implementing area planning and management projects with strong ICZM components are essential for progressing ICZM. This will augment discourse, experiences, and skills.

Regional seas conventions and their resulting strategies and activities are also of paramount importance to support the advancement of ICZM in the respective countries by sharing experiences in the implementation of ICZM as best practices and lessons learned.

The importance of civil society should also be underlined. In many instances non-governmental organizations (NGOs) serve as advocates for healthy environments and express the views of large parts of the civil society. They have also been instrumental in promoting and progressing ICZM in many regions.

The factors influencing the success of ICZM Programs in a country can be summarized as;

- Small size and high importance of the coast in relation to total size of the country,
- A proper allocation of competences, functions and tasks between central and lower state levels,
- Leadership or at least a dedicated caretaker role (“political will”) at the national level driving and/or coordinating ICZM,
- Connecting on-going administrative and governance changes within Member States with necessities of ICZM,
- Utilizing and strengthening existing territorial planning and management institutions (e.g. from spatial planning) for ICZM,
- National, regional and local levels working in connection with regional seas initiatives,

- ICZM projects, programs and initiatives showing benefits to and increasing communication among stakeholders,
- Reliable funding for ICZM initiatives with a medium- to long term time frame,
- Qualified personnel and management on all levels conversant with ICZM,
- Strong civil society organizations promoting environmental affairs.

#### **2.2.2.2. Factors for the failure of ICZM Programs**

In large countries with important coastlines it seems that the way a state functions can be distributed between central and lower levels. Usually the lower tiers are responsible for executing spatial and development planning while the higher levels give guidance, technical support, sometimes additional funding and control. Who is responsible and doing what and how the various levels communicate and link with each other horizontally and vertically are crucial questions.

In this respect highly decentralized countries have more problems in preparing a national ICZM strategy. In some cases they may not even feel that it is “their” mandate.

Where ICZM is not the mandate of the national level – or where the mandate is comparably weak – a strong “caretakership” is needed and can be filled by the national level. This caretakership is very much needed to coordinate between the direct lower levels of regional governments and to mediate between them. And in centralized countries, it must be the central government who leads in the care taking role.

Also there is the question as to which institution should be the leading institution or caretaker of ICZM, and whether if it is sufficiently covered by ministries and agencies concerned with spatial planning or should it be a function of a ministry of environment or similar new entity.

Important administrative and legislative changes within countries and major structural reform processes like regional governments or conflicts with municipalities can be taken as potential failure factors as well.

Apart from an insufficient understanding by many stakeholders, there is often also a lack of qualified personnel sufficiently conversant with ICZM. Without a capacity building/education process, ICZM will often fail due to a limited stakeholder knowledge base.

While demonstration projects and initiatives have been supportive of ICZM they are usually of a short or medium-term nature only. So unreliable and discontinuous funding can be noteworthy as an important failure factor hampering the ICZM progress.

The factors influencing the failure of an ICZM Program in a country can be summarized as;

- Unclear distribution of functions between national and lower levels of government with national government not feeling “in charge” of ICZM,
- ICZM introduction coming at the wrong time (when the respective country is undergoing major reforms that organize the larger structure),
- Countries (purportedly) claiming that ICZM is sufficiently being taken care of by spatial planning institutions,
- Insufficient time, unqualified manpower and insufficient funds provided to introduce the complex idea of ICZM through awareness, education and demonstration projects.

### **2.2.3. Case Studies for ICZM Implementation in the European Context**

The recommendation of the European Union in 2002 for Integrated Coastal Zone Management (ICZM) asks member states to formulate a national strategy and to report on its implementation. The recommendation also puts into effect the agreements that were already made in 1992 during the UN Summit in Rio de Janeiro as part of 'Agenda 21'. The main idea of Agenda 21 is to support sustainable development. It is a comprehensive blueprint of action to be taken globally, nationally and locally by organizations of the UN, governments, and major groups in every area in which humans have an impact on the environment.

In 2006, all the EU member states reported on the implementation of the recommendation in late 2006; the European Commission presented the results of the evaluation of the EU ICZM recommendation on the basis of the national reports. The evaluation has shown that the recommendation has had a positive impact in encouraging progress towards the more integrated planning and management of coastal zones in Europe.

The future EU Integrated Maritime Policy and its environmental pillar, the EU Marine Strategy, are intended to give new impetus to the ICZM policy and further improve its implementation in the years to come. (Centre for Water Management, 2010)

On examining this study on a regional basis from the Baltic Sea to the Mediterranean Sea, it consists of 24 members and accession countries including Turkey which have varying degrees of ICZM implementation progress. The following discussion regarding the implementation of ICZM in the Baltic and North Sea and Atlantic, Mediterranean and Black Sea regions is summarized from The Evaluation of ICZM in Europe (2006).

### **2.2.3.1. Baltic Sea**

The countries under evaluation (Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden) show varied development of actual strategies for ICZM implementation, ranging from developed, formulated strategies, in the case of Germany and Finland, to Poland, which is still in the process of formulating its plan. Denmark has delivered a short report on its stocktaking activities, but states that the present legal framework seems to override the need to develop an ICZM-specific strategy.

Most countries base their strategies for ICZM implementation on their formal spatial planning or environmental protection/ecologically-driven systems. It is often claimed that a spatial planning framework (albeit its strong sectorial nature) provides a well-established, functioning legal framework for the increased protection of natural resources in the coastal zone into the existing administrative processes.

Participation from all sectors of the economy should be further encouraged, coupled with increased training, education and public awareness programmes. ICZM is not widely known by the respective administrations at local and regional levels.

But on the international platform these countries plus Russia founded a commission called Helsinki Commission or HELCOM which works to protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental co-operation between Denmark, Estonia, the European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. HELCOM is the governing body of the "Convention on the Protection of the Marine Environment of the Baltic Sea Area" - more usually known as the Helsinki Convention.

HELCOM's vision for the future is a healthy Baltic Sea environment with diverse biological components functioning in balance, resulting in a good ecological status and supporting a wide range of sustainable economic and social activities (HELCOM, 2012).

The legal and regulatory framework for ICZM in the Baltic Sea countries displays an array of different laws, measures and authorities relevant to the coastal area management.

Although legislation may show a relatively high protection level, with regards to coastal landscapes and management practices, this does not necessarily imply an integrated coastal zone management approach.

It is perceived that the frameworks that have been or are being formulated will be adequate to manage the challenges to secure a proper balance between conservation and development of the coastal zone. Weaknesses and gaps are dealt with currently by adjusting existing laws and fine-tuning the governance structures, as well as implementing EU directives and policies.

#### **2.2.3.2. North Sea**

All six EU States (Belgium, Denmark, Germany Netherlands, Sweden, and the United Kingdom) that border (to some extent) the North Sea delivered a national report on the National ICZM efforts which have been assessed.

One of the key obstacles to ICZM is the current strong legislative separation between land and sea based activities in many of the North Sea countries.

National coastal forums that have a permanent structure, more funding and long-term staff should be established. They should report on a regular basis to the respective national government but also link national activities and foster regional sea communication and exchange. Regional sea partnerships of key bodies such as national coastal forums could have a role by facilitating stakeholder participation and dialogue in any future system of marine spatial planning. Voluntary partnerships should be given a specific role and also financial and political support.

There is a critical need for; supporting the progress on international agreements such as the OSPAR Convention which is the Convention for the Protection of the Marine Environment of the North-East Atlantic and the very first example of not directly but indirectly ICZM related regional agreement.

Promotion of training, education and awareness programmes on the Regional Sea level (EU programme on communication and exchange between Member States of a Regional Sea, e.g. exchange of practitioners, facilitating interregional and trans-national co-operation on coastal issues), addressing the problems of consistency, compatibility and accessibility of data collection and storage methods, as well as agreements on cross-border sharing of information in a Regional Seas context is also required.

The EU status of the North Sea should develop a set of sustainability indicators that is regularly assessed on the basis of careful monitoring of the coastline and other information that could provide the basis for a regular national reporting system to the EU, based as far as possible on data which is simple and inexpensive to collect.

There is a necessity to use synergies between ICZM and the Water Framework Directive (WFD) principles (e.g. public participation as key to ICZM and a requirement to the WFD and the use of existing coastal observations).



### **2.2.3.3. Atlantic Coastal Region**

No ICZM strategy has been implemented formally in the five countries of United Kingdom, Ireland, France, Spain and Portugal. Only first steps have been taken. Spain has targeted the full implementation for 2008.

Developed strategies are originating in most cases from spatial planning and have been converted into ICZM with more or less conviction, suffering the historically founded sectorial perspective of the planning authorities.

Most strategy papers show clearly that the horizontal and vertical flow of information and participation has been neglected in former policies. There is a gap between theory and practice in meeting the principles of good ICZM in these countries strategies.

Several countries state the principles as goals for their ICZM, but the reports show that especially participation and communication have not been applied during the development of the ICZM plan.

For most of the Atlantic coastline, a holistic thematic and geographic perspective is in progress. The local specific context is well represented along the Atlantic coast and relevant administrative bodies are involved. Respecting and working with natural processes requires a paradigm shift from elaborate technical solutions to less invasive methods to support natural regulating processes.

All Atlantic coastal countries have used a holistic and integrative approach to develop their strategy. Sustainable development is defined as a central goal. Compared to other European seas, the Atlantic coast is lacking a common regional policy to discuss and analyze problems and concerns on a regional basis.

#### **2.2.3.4. Mediterranean Region**

From nine countries the following six: Cyprus, France, Greece, Malta, Slovenia and Spain delivered a national ICZM report to the EU that has been assessed, while Croatia, Italy and Turkey did not do so. The most pronounced problem of the majority of the countries along the Mediterranean is the artificialization of the coast driven by an ever expanding tourism: urban sprawl, building up of secondary homes and sealing of soils.

Other common issues are: the change of coastal dynamics; a dwindling of the traditional fishery industry; the degradation of ecosystems and habitats; environmental risks along the coast; the loss and degradation of landscape; and environmental problems due to aquaculture, water sports activities and maritime transport.

There is a multitude of laws; however, a consistent set of laws directing coastal governance and management is usually lacking. The main legislative and policy frameworks governing the development of the coast are usually planning instruments that have a physical preponderance and little room for needs of integration of different sectors and participation of stakeholders.

There are five major groups of stakeholders: government institutions, private sector actors, non-governmental organizations, researchers and experts, and finally coastal citizens. The interests of these groups vary to a great extent, between groups as well as within groups. Some are very much focused towards coastal environmental and social goals; others want to achieve economic growth, often neglecting long-term considerations. Interregional organizations and cooperation structures do not yet feature high in the reports of these countries.

Like the Helsinki Convention there is an international and regional programme between the Mediterranean countries called the Barcelona Convention which is the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean; but the ext of the Barcelona Convention is still under ratification.

Implementation of national ICZM strategies or equivalent has been ongoing for a few years in Malta and Slovenia, while it started in 2006 in France and Spain. The observance of principles of good ICZM varies a great deal amongst Mediterranean countries.

Long-term sustainable development intentions, local-specific orientation and a holistic approach are incorporated in quite a number of national strategies or equivalent, at least nominally. Many more problems appear in these countries when dealing with the participation of stakeholders, application of adaptive planning and management procedures, working with natural processes, proper integration of various administrative bodies and the use of a balanced combination of instruments in planning and management.

#### **2.2.3.5. Black Sea Region**

The Black Sea (Bulgaria, Romania, and Turkey) coastal zone is recognized as a highly vulnerable resource due to increasing human population, and the backbone of the national economies of the Black Sea in competition with various stakeholders, which may result in conflicts and destruction of the functional integrity of the resource system.

The most common problems in the Black Sea region are coastal erosion, over-urbanization, lack of law enforcement and unsustainable tourism.

Currently, the benefits related to environmental conservation and protection may rank lower than those that can be attributed to tourism and industry. ICZM-related actions in the region are leading to the setting up, for the first time, of appropriate cross-sectorial management and legal frameworks to address the EU ICZM recommendation and other regional and international frameworks.

As for the Black Sea region; the Convention on the Protection of the Black Sea Against Pollution was signed in Bucharest in April 1992, and ratified by all six legislative assemblies of the Black Sea countries (Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine) in the beginning of 1994.

Also referred to as the "Bucharest Convention", it is the basic framework of agreement and three specific Protocols, which are; the control of land-based sources of pollution, dumping of waste; and joint action in the case of accidents (such as oil spills).

The implementation of the Convention is managed by the Commission for the Protection of the Black Sea against Pollution (also sometimes referred to as the Istanbul Commission), and its Permanent Secretariat in Istanbul, Turkey. (Black Sea Commission, 2009)

The participation of the civil society and stakeholders in nationally-recognized ICZM working groups is becoming common at least in some aspects such as the identification of problems.

Consensus-building and conflict resolution mechanisms between competing stakeholders are improving. Identification of priority coastal areas requiring immediate conservation and rehabilitation actions is undertaken in support of dedicated action-oriented projects.

### **2.3. Conclusion**

As a conclusion for Chapter II, it can be said that Integrated Coastal Zone Management is very important for every country which has a coastline. If the coastline is not too long then its importance is usually higher to that particular coastal state.

Because more than half of world population is living along the coasts and the value of coasts is so high, most countries have some laws or regulations regarding their coasts to ensure some level of public ownership.

The increasing attention to environmental protection by coastal states underscores the global warming or climate change is a consequence of the actions of mankind. In this respect a question that arises is what about the effective and sustainable usage of coasts? How can coasts be used more effectively in a sustainable way?

Simply, the basic aim of an ICZM process is to find an answer to this question and to achieve this basic aim, especially in developed countries and countries that have special and rare marine habitats, and tend to implement ICZM to both protect their marine environment and decrease and mitigate conflicts among stakeholders.

For developing countries, it seems very difficult to implement this ICZM concept in the near future, because they are so busy with economic development that they tend to avoid or delay the protection of the environment or give it secondary consideration in the development of their national economies.

Unfortunately, although three decades have passed since the introduction of this concept, countries which successfully implement ICZM are quite rare. Also even in the European context, the efforts for implementing national strategies for ICZM are still underway.

So after analyses of best practices and worst examples via the continuing ICZM process across the world, it is noted that the factors of complexity of responsibilities, information blocks and non-durable funding are complicating the implementation of ICZM.

The factors affecting the failure of ICZM include unclear distribution of functions, timing of introduction of ICZM, leaving spatial planning institutions alone, insufficient time, unqualified human resources and insufficient funds.

And in the case of the countries that are relatively more successful in the implementation of ICZM, small and important coastlines, proper allocation of competences, political leadership, connection of local and central authorities and of course reliable funding are important factors leading to a successful ICZM regime.

### **3. CHAPTER III**

#### **3.1. Current Situation and Management of Coastal Marine Facilities in Turkey**

Due to its central geographical location between Europe and Asia and a fast growing economy, Turkey has become an important trade hub between the two continents.

Also the Turkish Straits, consisting of the Istanbul and Çanakkale Straits and the Sea of Marmara as well, is one of the regions that have the highest concentration of maritime traffic in the World.

With a coast line of more than 8,400 km. and a strategic position between Europe and Asia, Turkey has over 400 marine facilities on coastal regions including ports, marinas, fishing quarries, shipyards, ship recycling facilities and others.

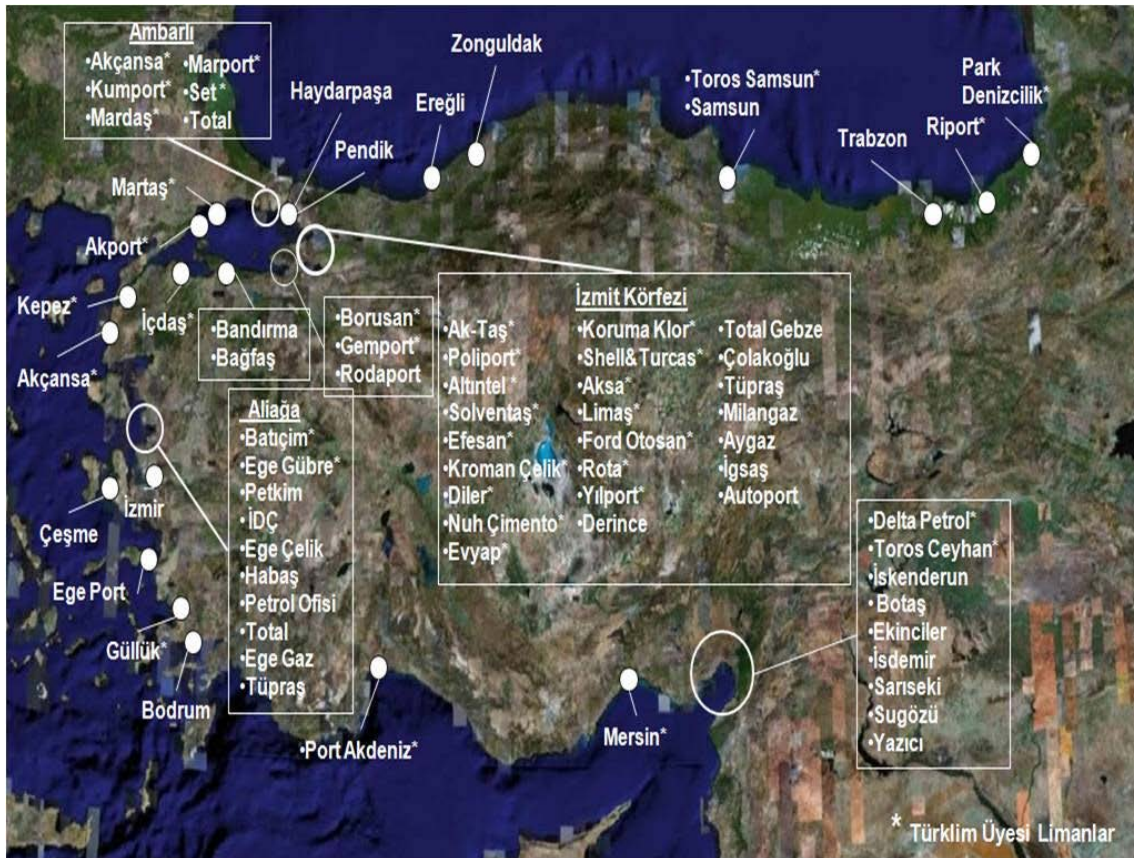
In this section an overview of these facilities will be undertaken.

##### **3.1.1. Ports**

In Turkey there are three types of port operators; ports run by the central or local government and privately owned ports. There are 178 ports of which 13 are operated by the central government, 13 by municipalities, and 152 are privately operated/owned ports. (Karabiyik, 2010)

Of all the goods handled through the ports operating in Turkey about ninety percent are handled by private port operators regarding container, cruise passenger and ro-ro traffic. But in the case of liquid cargo traffic, this percentage is decreasing due to the existence of public corporations and ports which are operating in the petroleum refinery and products sector. Geographically, the area around Istanbul has the largest concentration of ports (79) followed by the Canakkale region (24) and Izmir (22). The smallest concentration of ports in Turkey can be found in the region around Antalya (7).

**Figure 3.1. Turkish Ports**



(TUKLİM, 2011)



The most significant examples of major ports in Turkey that serve different cargo types are; Ambarli port which meets approximately 40 per cent of Turkey's annual container traffic; Pendik Ro-Ro Terminal, which meets approximately 50 per cent of ro-ro traffic and Autoport (Izmit), which is expected to meet 25-30 per cent of total car handling. Moreover, Aliaga, Samsun and Ceyhan regions meet the traffic of oil and its derivatives; Kusadasi, Istanbul, Izmir and Marmaris ports meet a large portion of the cruise passenger traffic (Karabiyik, 2010).

Turkish ports hold a very strategic position within the East Mediterranean and Black Sea Shipping Lines and at the intersection point of East-West and North-South directional international transport corridors. They are in an advantageous position to attract transshipment/transit cargoes.

Ports in all regions of Turkey are so located that they can serve different transportation nets. Mediterranean and Aegean ports are located with higher distances than Marmara ports and have ability to attract Asian-European main shipping lines cargoes passing through the Mediterranean.

Especially, the Mediterranean ports are in a position to operate as transshipment/transit ports for delivering cargo coming from main shipping lines to the Middle East and Central Asian countries. Meanwhile, ports in the Marmara Region are important in terms of the Turkish connection of Trans-European and Pan-European transport corridors formed by the EU and extending those corridors to the East.

As a result of growing trade and transport volume in the Black Sea, which is the most important means of access for trading among the landlocked Central Asian countries with Europe, the importance of Turkish ports has increased. (Arola Comercio Internacional, 2012)

Cargo handled at Turkish ports in 2011, totalled 363.360.736 tons.

22,5 % of handling is export with	81,779,528 tons.
47,8 % of handling is import with	173,555,184 tons.
12 % of handling is cabotage with	43,646,763 tons.
17,7 % of handling is transit with	64,379,261 tons.

(Ministry of Transport, Maritime and Communications, 2012)

In terms of container handling, the major ports are Ambarlı, Mersin and İzmir. Total throughput in 2011 reached 6,5 million TEU.

In the maritime transport sector, Turkey's investment and policy priorities are structured by the objective of ensuring improvement in the following fields: Turkish merchant fleet, Turkish ports, cabotage, financial policy, safety and security, protection of the environment, maritime education and training, new maritime trade links.

In parallel to the developments in the maritime transportation sector in the world and to meet the needs of the Turkish maritime sector, three hub-ports on the three sides of the Anatolian peninsula namely Filyos Port on the Black Sea, Çandarlı Port on the Aegean Sea and the Mersin Container Port on the Mediterranean Sea, are planned.

Çandarlı Port, one of the major port projects, will serve container transport as a hub port and will increase its capacity to 12 million TEU/year by the revisions which will be made gradually. With regard to Mediterranean-Asia Access, Çandarlı Port has a much more advantageous position than the Port of Piraeus. Another port project; Filyos Port Project, which is expected to take the pressure off the Turkish Straits, will serve a variety of cargo types such as ore, container and fuel. Its capacity will be 25 million tons/year.

Mersin Container Terminal Project, which will be the container transshipment centre, is planned to meet future demand from Central Asia and the Middle East.

It is expected that by 2023 one of the ports of Turkey will be among the top 10 ports in the world with respect to handling capacity. It is expected that through the necessary investments, the total container handling capacity of all Turkish ports will be 32 Million TEU/year. Fifteen million passengers/year for the year of 2023, are anticipated in cruise ship tourism. Seven new cruise ship ports are planned to be constructed by 2023. (Transportation in Turkey, 2011)

As mentioned before, there are 178 ports in Turkey that are open to international traffic. Most of them are operated by the private sector, but coasts belong to the public so operators lease land from government for 29 or 49 years. The biggest problem with this situation is there are no port areas that are determined by the government as port zones. After the rapid development period starting from 1980`s, governments could not control these areas. Ports need huge back areas for extensions and hinterlands as well as logistic connections to highways or railways.

But because of lack of planned development, most Turkish ports have no railway connections and they have no room for extensions. Even the largest container terminal of Turkey, Ambarli, has no railway connection and in the back yard of the port there are houses so there is no place for extension and the port is working over its limits. Also the port is constructed on an earthquake zone. These issues are clear signs of unplanned development.

Regarding operation licences, they were previously given by the Undersecretariat for Maritime Affairs but they are now given by the Ministry of Transport, Maritime and Communications under the authority of Harbours Law.

### **3.1.2. Shipyards**

The shipbuilding industry is a branch of heavy industry which provides;

- Progress in sub-industry
- Increase in employment and the population of the neighbourhood
- Increase in the standards of quality of sub-industry
- Increase of qualified productive power
- Progress in growth and strength of regional trade
- Increase in the living circumstances and educational level of workers,
- Employment in ratio 1 to 7 including sub-industry.

Traditional shipbuilding skills combined with modern techniques and education have enabled the Turkish shipbuilding industry to develop into an internationally known industry since the early 1990's. Turkey is a growing force within the international maritime sector. The Turkish shipbuilding industry has modern, technologically developed and quality certified shipyards, together with a well-experienced work force. The industry has rapidly achieved significant development in a short period of time. In the last five years Turkey has improved its shipbuilding industry rapidly and has become the fifth largest shipbuilding country in the world. A high expectation of development in the shipbuilding industry brings parallel investments.

The number of shipyards has increased to 87 (3 military and 84 private). In Turkey's shipyards brand new ships, yachts, mega-yachts and sailing boats are being manufactured. In addition to these, repair and maintenance services are provided. Turkish shipyards are located in Tuzla, Marmara, Black Sea and Mediterranean regions. and have 1 million DWT (Deadweight ton) new ship building capacity, 14.6 million DWT repair and maintenance capacity, 600,000 ton steel processing capacity and an

80,000 DWT new ship building capacity. Turkish shipyards have 15 floating docks of different sizes and one dry dock.

The Turkish shipbuilding industry makes a considerable contribution to the Turkish economy with US\$ 1.5 billion from new ship building, and US\$ 1 billion from repair and maintenance activities.

Sector development also helps the domestic production of materials and equipment which are used in shipbuilding. Furthermore, the industry creates an employment opportunities for approximately 25,000 people directly and 63,000 people in total with related industries. Seventy two ships with a total of 550,000 DWT had been delivered as of November 2009.

The types and tonnage capacities of these Turkish and foreign flag ships vary and include: petrol tankers, chemical tankers, fishing boats, container ships, bulk carriers, yachts, tug boats, tankers, sailing boats, general cargo ships, oil tankers, intervention crafts, coast guards, speed boats, multi and special purpose ships, military vessels, servicing tankers, bunker barges, tugboats, mega yachts and other types of sailing and motor boats. Ships produced in Turkey are manufactured in accordance with international standards (ISO9000 and AQAP Quality Certificates) and under the supervision of specific societies. Being the top manufacturer of low-tonnage chemical tankers in Europe, Turkish shipyards receive many orders for petrol and chemical tankers, sailing and fishing boats.

Mega-yacht manufacturing is another important production area of Turkish shipyards. In recent years Turkey has shown great progress in building and equipping boats, yachts and mega yachts. Turkey has been number four on the world list of mega-yacht (yachts longer than 25m.) manufacturers.

In addition, repair and maintenance services for ships are provided. Many ships were revamped or repaired, including their petrol platforms. Among the services provided by Turkish shipyards, repair/maintenance plays an important role. In 2008 Turkey's repair maintenance operations reached 5.5 m. DWT.

The Turkish shipbuilding industry has important export potential with increasing production capacity. Exports realized US\$ 1.1 billion in 2010 with a 39% decrease compared to the previous year. In 2011 sector exports increased to US\$ 1.2 billion with a 14.9 % increase compared to 2010. In 2011, exports of cruise ships, excursion boats, ferry-boats, cargo ships, barges and similar vessels for the transport of persons or goods ranked first with a value of US\$ 822 million. Yachts and other vessels for pleasure or sports; rowing boats and canoes exports realized US\$ 251 million and ranked second in the overall shipbuilding industry exports. The major markets for the Turkish shipbuilding industry are Malta, Marshall Islands, Panama and the United Kingdom (Shipbuilding Industry, 2011).

Shipyards locations and settlement is a bit different from ports. The number will be more than a hundred in a few years but they are located in a more planned way by the government. After the 1980's most of the shipyards and ship repair facilities were located in Tuzla in the Marmara Sea but now Yalova has arranged a huge area for shipyards and almost 50 shipyards will operate there. There are other shipyards located in different areas of Turkey but the main two locations for shipyards are Tuzla and Yalova, which are both in the Marmara region.

Like ports, operation licences were previously given before by the Undersecretariat for Maritime Affairs but they are now given by the Ministry of Transport, Maritime and Communications under the authority of Law on Improvement of maritime trade fleet and Promotion of ship building facilities.

### 3.1.3. Ship Recycling Facilities

Ship breaking is also an important part of the Turkish maritime sector. The ship scrapping sector is a technological process involving demolition of old and/or decommissioned ships which are out of service, respecting the environment and safety concerns. There are 21 ship recycling companies operating in Turkey. The ship recycling capacity of these companies is one million metric tons/year which equates to the fifth largest recycling tonnage in the world. Turkey is one of the five major ship recycling countries in the world. Ship recycling and dismantling takes place in İzmir Aliğa located in the Aegean Region in Turkey. In 2002, 83 ships and 190,648 LDT were dismantled in Turkey whereas 229 ships and 410.380 LDT were dismantled in 2010 with an increase of 275 per cent (“Shipbuilding Industry”, 2011).

**Figure 3.2. Turkish Ship Building and Ship Recycling Facilities**



(Ministry of Transport, Maritime and Communications, 2011)

Ship recycling facilities have been mainly located in the Aliaga, Izmir region for many years and they are the most planned and well organized coastal facility group in Turkey. Licences are issued by the Ministry of Transport, Maritime and Communications under the authority of Regulation on Rules and Guidelines Regarding Construction, Alterations, Maintenance and Repair of Ships and Sea Vessels.

#### **3.1.4. Marinas**

Turkey has been the world's third fastest growing travel destination, behind China and Russia, throughout the past two decades, according to the World Tourism Organization (WTO). The number of tourists visiting Turkey swelled 15-fold in the past two decades, from 1,523,000 in 1979 to a record 23.3 million in 2007 and by 2013, Turkey aims to attract 38 million tourists annually and earn US\$ 34.4 billion a year from tourism, according to the State Planning Organization's Ninth Five Year Economic Development Plan. (Tourism Sector Report, 2008)

Marine tourism takes a great share of the general tourism activities. Turkey has enormous marine tourism potential thanks to its climate, coasts and historical sites. Despite the absence of infrastructure and delayed legislation, marine tourism has continued to develop in Turkey. Yachting tourism is a major component of marine tourism.

Developed countries in tourism such as Spain and Italy have covered their coasts with massive concrete structures such as hotels. In Turkey, there is a similar trend but travel opportunities are getting better day by day and tourists have started to look for more quiet and uninhabited places. In light of this situation, tourists tend to go to more remote exotic island countries. Therefore, Turkey should be extremely careful not to repeat the same mistakes other countries have inevitably made before (Dogan, 1990).

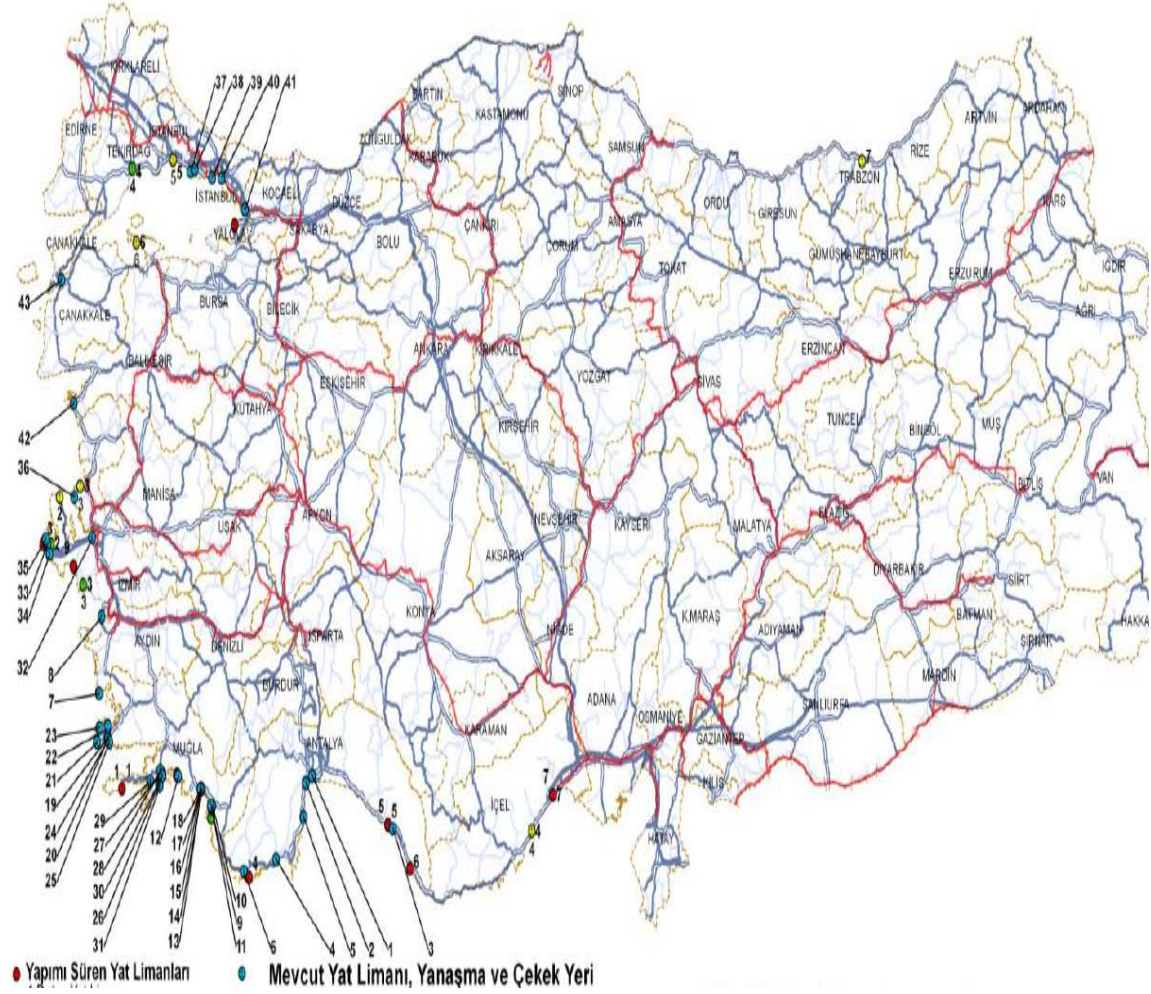


After the Tourism Promoting Law, in the 1980s, marinas of equal and high quality have been established in regions between Çeşme and Antalya where yacht tourism is predominant, in mostly natural bays. Yacht Tourism in Turkey increased through both domestic and especially foreign demand in the second half of 1980s. The first motion of yachting in Turkey has been provided by the appropriate foundation of Aegean and Mediterranean coasts for yacht tourism. This region is chosen because of hygiene, intensity and habitats. (Karanci, A., 2011)

Marine tourism revenues constitute 25 per cent of Turkey's total tourism revenues. The Mediterranean basin is one of the most important regions in the world and yacht tourism increases its attractiveness for both commercial and amateur yachtsmen day by day. There were 25 marinas on Turkish coasts by the end of 2002, whereas this figure increased to 36 marinas by the end of 2009. Thus, there has been an increase of 44 per cent in 7 years. Turkey ranked fifth with a share of 6 per cent in the world list of yacht building (Transportation in Turkey, 2011).

Cruise ship tourism is the fastest growing sector of the travel industry. Its annual growth rate has been 8 per cent since 1980. Cruise ships which grow rapidly have 3,000-3,500 tourists capacity. Today's cruise industry gives an opportunity to its clients to visit the cities of many countries for short (3-4 days) and long-term (15 days and more) trips. In recent years, 14 million people have travelled by cruise ships worldwide. Most of these people are from the USA (nearly 10 million) and from Europe and other countries (4 million). The cruise ships usually sail to the Caribbean. However, there is an increase in European ports in terms of cruise tourism. Turkish ports cumulatively received over one million tourists by cruise ships. Although Turkey has a share of 3.1 percent in terms of tourist arrivals and 2.6 percent in terms of tourism receipts in the world tourism market, Turkey only gets a share of 0,5 per cent as port of calls from cruise ship tourism (Transportation in Turkey, 2011).

**Figure 3.3. Turkish Marinas and Yacht Berthing Facilities**



(Ministry of Transport, Maritime and Communications, 2011)

As seen in Figure 3.3., marinas and berthing facilities in Turkey are mostly located in the Aegean and Mediterranean Regions (especially in Muğla province). There are no marinas or related facilities in operation in the Eastern Mediterranean or Black Sea coasts. However, there are several facilities that are in the construction phase and facilities whose construction has been completed or are in the tender phase.

As of 2010, yacht mooring capacity in Turkey is about 16,000, of which 9,000 are in marinas, while those numbers for France, Spain and Italy are approximately 227,000 thousand, 107,000 and 128,000, respectively.

Total yacht mooring capacity of marinas and yacht mooring facilities in the Mediterranean Basin is about 500,000 and the capacity of Turkey constitutes approximately 4% of total capacity in the Mediterranean Basin. Marina capacity of Turkey will reach 25,000 with these facilities that will commence operation within the short to medium term (Karanci, A., 2011).

Operation licenses of marinas are issued by the Ministry of Transport, Maritime and Communications under authority of Regulation on Yacht Tourism. Marinas are located in mainly Marmara and Aegean region. But there are efforts by the government to operate some useless fishing quarries as small yacht marinas.

### **3.1.5. Fishery Quarries**

Despite Turkey's long coastline, fishing is not an important contributor to the economy. The fishing industry is concentrated on the coasts of the Black Sea and the Sea of Marmara, where output has been cut by pollution and over-fishing (Library of Congress – Federal Research Division, 2008).

In 2006, total reported fisheries production, including aquaculture reached 661,991 tonnes, an increase of 117,218 tonnes from 2005 (24 per cent increase year on year). Of this, 533,000 tonnes came from capture fisheries (80%) and 129,000 tonnes came from aquaculture (20%). Total fisheries production has remained stable over the last decade. However, aquaculture production has increased rapidly.

Over the past 5 years the volume of aquaculture production has increased by 110 per cent, reaching 129 000 t. Fishery production in 2006 consisted of marine fisheries (62%), aquaculture (20%) and inland fisheries (11%), with the balance (7%) being other marine products, such as crustaceans and molluscs. Turkey produces approximately 0.6 per cent of total world fishery production. (Food and Agriculture Organization of the United Nations, 2008)

There are 18 396 vessels in the Turkish marine fishing fleet licensed by the Ministry of Agriculture and Rural Affairs, and a further 3 000 in inland waters. As much as 85 per cent of the Turkish fleet are small boats under 10 m in length. Their combined fishing capacity is large, and bearing in mind that they focus on inshore waters, is likely to have a great impact on species that frequent inshore waters, e.g. mullet and goatfishes. These smaller boats are operated by a mixture of professional (full-time), subsistence (part-time) and recreational fishermen. There are basically four kinds of fishing operations in the Aegean and Mediterranean waters of Turkey. By far the largest numbers of fishermen are employed in the small-scale fishery sector.

Boats normally return to home ports within a day, and the catch is marketed locally. Government policy towards the fisheries and aquaculture sector has traditionally focused on stimulating production and has included both fisheries and aquaculture management and development measures. These management measures have focused on the control of fishing effort via restrictions on gear and equipment and the enforcement of fishing seasons (Food and Agriculture Organization of the United Nations, 2008).

Fishing activities are managed and operational licences of fishing quarries are given by the Ministry of Food, Agriculture and Livestock under authority of Regulation on Fishery Quarries. Fishing quarries are mainly operated by municipalities or local fisher unions or co-operatives and the number of quarries reached 211 in 2011.

They are located mainly in the Black Sea and Marmara region but on all of the Turkish coasts, these fishery quarries can be seen. Because of low profits the private sector does not involve itself in operating fishing quarries and the support of municipalities and government is not sufficient. As a result, there are problems regarding the viability of operations and effective management.

**Figure 3.4. Fishery Quarries and Their Capacities in Turkey**



(Ministry of Transport, Maritime and Communication, 2011)

### 3.1.6. Marine and Coastal Protected Areas

Within the framework of 2873 – National Parks Law, which identifies areas that possess national and international importance and manages these areas without degrading their values and characteristics Turkish Marine and Coastal Protected Areas are listed below:

**Table 3.1. National Parks and Nature Conservation Areas in Turkey**

Protected Area	Status of the Area	Region	Province/Provinces/ District	Length coastline (km)	Declaration date	Date of Approval for Long Term Development Plan
Coastal National Park of Olimpos-Beydağları	National Park	Mediterranean	Antalya	105	1972	31.03.2010
National Park of Marmaris	National Park	Aegean	Muğla	73.5	1996	05.08.2002
National Park of Dilek Semi island-Büyük Menderes Delta	National Park	Aegean	Aydın/Kuşadası and Söke	63	1966	19.06.1997
National Park of Kazdağı	National Park	Aegean and Marmara	Balıkesir/Edremit	1.48	1993	1995
Historical National Park of Gelibolu Semi island	National Park	Marmara	Çanakkale/ Eceabat	88	1973	23.12.2003
Historical National Park of Troya	National Park	Marmara	Çanakkale/Ezine	20.9	1996	14.07.2010
Lagoon of Yumurtalık	Nature Conservation Area	Mediterranean	Adana/ Yumurtalık	45	08.07.1994	-
Ölüdeniz-Kıdrak Nature Conservation Area	Nature Conservation Area	Aegean	Muğla/Fethiye	12.8	01.12.1983	Planning is ongoing
İncekum Nature Conservation Area	Nature Conservation Area	Mediterranean	Antalya/Alanya	1.55	08.12.2006	12.08.2010
Ayvalık Islands Nature Conservation Area	Nature Conservation Area	Aegean	Balıkesir/Ayvalık	110.550	21.04.1995	20.08.2009

(Ministry of Environment and Forestry, 2011)

### 3.1.7. Special Environmental Protection Areas (SEPA)

Special Environmental Protection Areas are regulated by the Institute for Special Environmental Protection which is under the Ministry of Environment and Forests.

There are 8 Special Environmental Protection Areas in Turkey and, in addition, a new marine and coastal SEPA is planned to be established in the Saroz Bay and the marine boundaries of the Gökova SEPA are planned to be expanded.

The main distinction point of Special Environmental Protection Areas from Marine and Coastal Protected Areas is the area that they focus on. SEPA focuses on marine areas surface while MPA's focus is on coastlines.

**Table 3.2. Special Environmental Protection Areas in Turkey**

Protected Area	Status of the Area	Marine area surface (km <sup>2</sup> )
Datça- Bozburun	Special Environmental Protection Area	736.63
Kas-Kekova	Special Environmental Protection Area	165.91
Fethiye- Göcek	Special Environmental Protection Area	340.11
Foça	Special Environmental Protection Area	51.78
Gökova	Special Environmental Protection Area	299.35
Göksu Deltası	Special Environmental Protection Area	80.78
Köyceğiz- Dalyan	Special Environmental Protection Area	40.8
Patara	Special Environmental Protection Area	49.94

(Ministry of Environment and Forestry, 2011)

### **3.1.8. Other Special Areas (Tourism areas, Military areas, Forest areas)**

According to some national special laws, Turkish coastal areas are divided into several groups of zones like tourism, military or forest areas. Tourism areas are determined by the Ministry of Culture and Tourism, military areas are determined by General Staff and forest areas or zones are determined by the Ministry of Environment and Forests, and some of them need the approval of the Council of Ministers. Also there are some zones that are owned by the Ministry of Finance and rented to private owners to operate coastal facilities such as ports and shipyards.

These zones are managed according to these laws and because they are protected by law, they have some independence from the regulations of other government institutions or in case of a conflict. Setting up special areas for different purposes and regulating these zones according to special laws is not the best way but it is obvious that it is the fastest way because of bureaucracy.

For example, if marinas and other coastal facilities are located in tourism zones, the Ministry of Transport and its regulations do not apply to them because they have some special laws that implemented by the Ministry of Culture and Tourism although they require less investment than high capacity shipping ports and cargo terminals.

But when it comes to shipping ports, there is no special law that allows the creation of port zones. Maybe this is the main reason for the wedged small quays and ports which are in the middle of a city with no rail connection or extension area. This situation also applies to fishing quarries and, in some regions, shipyards too.

There is no special integrated map that shows all coastal zones and facilities but there are efforts by different government institutions to make such a map available.



### **3.2. Why ICZM Is Needed In Turkey**

The improvement and preservation of coasts and their usage for public benefit is the crucial problem. Coastal law and other regulations about the status of coasts mention that coasts are public goods. According to these regulations, coasts are open to everyone to use and are subject to the principles of public law by virtue of attribution as a national good. These principles are;

- Coasts are under the State's authority and possession,
- Coasts cannot be transferred and law cession,
- Coasts cannot be sequestered,
- Coasts are not open to acquisitive prescription,
- Coasts cannot be nationalized,
- Coasts are protected distinctly from private goods.

High Seas is a definition made under United Nations Convention on the Law of the Sea (UNCLOS) and basically says high seas are the common heritage of mankind which no one can own. But because it has no owner it does not mean that the high seas should not be regulated. When there is no regulation, there is often conflict. So in international platforms states get together and make efforts to regulate seas by conventions such as SOLAS, MARPOL and others. In the same manner, coasts should be regulated even if they have no owner. In order to regulate coasts, government institutions make some regulations but the problem is, what will happen if there is a conflict between these institutions or regulations?

Turkey is not the only country that has such conflicts so governmental institutions should not find a solution in creating their own zones, but learn to share coasts. And this sharing can be through a national ICZM Plan which is organized and supported by the central government.

### 3.2.1. Key Players in Turkish Coastal Management

Main public authorities in charge of marine legislation which can also be defined as key players in coastal management and their roles in this concept are presented below:

**Table 3.3.: Key Players in Turkish Coastal Management**

<b>Main public authority in charge</b>	<b>Related legislation</b>	<b>Role</b>
Ministry of Environment and Urban Planning	Shore Law, Settlements Law, Environment Law, M.D. for SEPAs	Planning implementations in coastal zones and monitoring Implementation plans
Ministry of Trans., Maritime and Com.	Harbour Law, Harbour Construction Law	Maritime Transport Master Plans, regulating ports
Ministry of Forestry and Water Affairs	National Parks Law, Forest Law	Nature protection, protected areas and high scale planning, Setting up and regulating forest zones
Ministry of Domestic Affairs	Coastal Security Force Law, Municipal Law	Coastal security, co-ordination with municipalities
Ministry Of Food, Agric. and Livestock	Fisheries Law, Fishing Quarries Law	Regulating Fish farming and Fishery Quarries
Ministry of Tourism and Culture	Law for the Conservation of Cultural and Natural Wealth Tourism Incentives Law	Tourism planning, cultural heritage, Setting up and regulating tourism zones
The Min. of Energy and Natural Resour.	Energy Law	Energy lines, off-shore oil drilling
Municipalities	Municipal Law	Spatial Planning implementations and monitoring

(Karabiyik, 2012)

### **3.2.2. Legal Status of Turkish Coasts**

There is no specific law in Turkey to regulate ICZM implementation or marine spatial planning that directly addresses the preparation of marine spatial plans. Article 43 of the Turkish Constitution describes the use of shores and shore strips.

This article states:

Shores are under the jurisdiction and responsibility of the State. In benefiting from the sea, lake and river shores, and from shore strips bordering sea and lakeshores, benefit to the public is primarily sought. The widths of shores and shore strips, in relation to purposes of use, possibilities and conditions for people to benefit from these places are established by law.

Any kind and scale of spatial planning activity that effects and/or describes the human, for the use of sea falls under the scope of “Shore Law” number 3621. If these activities or constructions are more strictly regulated by different specific legislation (National Parks Law, Environmental Law) then this legislation is used for the area.

Therefore, Coastal Law is in use as the main legislative structure in Turkey and it does not make a separation between landward and seaward planning; both of them are in the scope of this law.

The characteristics and detailed information for Shore Law and other specific legislation related with sea use is presented below and is summarized from the “Report on the Situation Regarding Marine Spatial Planning in Turkey” (Aydin, 2007).

### **3.2.2. a. Coastal Law**

The purpose of this Coastal Law is stated (Art. 1) as “to set out the principles for protection of the sea, natural and artificial lakes, and rivers shores, and the shore strips, which are extensions of these places and are under their influence, by paying attention to their natural and cultural characteristics, and for their utilization towards the public interest, and access for the benefit of society”.

The Law gives definitions of the “shore line” and the “shore”. The “shoreline” is defined as: “the line along which water touches the land at the shores of seas, natural or artificial lakes, and rivers, excluding the inundation periods”.

The “shore” is the area between the shoreline and the “shore edge line”, which is defined as “the natural limit of the sand beach, gravel beach, rock, boulder, marsh, wetland and similar areas, which are created by water motions in the direction of land starting from the shoreline”.

It is observed that, although the location of the shore edge line is very important for managing development at the shore, its definition is far from clear and precise. The “shore strip” is set to have a minimum of 100 m width horizontally, starting from the “shore edge line”, according to the amendment-dated 1<sup>st</sup> of July 1992.

The shore is “open to benefit of all, equally and freely” (Art. 6). It is illegal “to excavate the shore, and to mine sand, gravel etc. at scales which may cause changes at the shore”. It is forbidden to dump excavated soil, furnace ballast, debris, or wastes along the shore and the shore strip.

On the shore, subject to a land use planning permit;

- Infrastructural and other facilities such as pier, port, harbour, berthing structure, quay, breakwater, bridge, seawall, lighthouse and storage facility, salt production plant, fishery installations, treatment plant and pumping station, which aim to either provide shore protection or enhance the utilization of the shore for the public interest;
- Buildings and facilities such as shipyards, ship dismantling plants, fish farming-agriculture facilities, which cannot be located inland due to the nature of the activity; can be built.

Along the first 50m width of the shore strip (Zone A), apart from those which can also be built on the shore as described above, no building of any kind is allowed. This area can only be planned and used “for pedestrian access, walking, relaxing, sightseeing and recreational purposes”.

On the remaining part of the shore strip (at least 50 m wide), roads, recreational and tourism facilities (other than those which offer boarding) open to public use, and public waste treatment plants can be built, subject to land use planning permit. Across the shore and the shore strip, building of barriers that hinder free access, such as walls, fences (wooden or wire), ditches, piles, or similar, are prohibited.

### **3.2.2. b. Harbour Law**

Management, cleaning, deepening, enlargement, dredging, placement of buoys, and protection, and all related harbour works are the responsibility of the Government.

The government agency, which carries out this responsibility, is the Ministry of Transport, Maritime and Communication. “Without obtaining an official permit from the harbour master, pier, quay, boat-shelter, repair shop, factory, recreational facility, warehouse, shop and public sea baths (this term is probably used to indicate public beaches) cannot be constructed on sea shores; debris, excavation material, ballast, wastes and similar substances cannot be dumped in places which are prohibited by the harbour master” (Art. 4).

The relevant articles of the Environmental Law superseded this article. “At places in harbours, specified and restricted by the Government, it is forbidden to drill piles at the sea shore; to occupy sea area by reclamation; to build restaurants, boarding houses, or similar facilities; and to restrict the size of the harbour in any way” (Art. 5).

Diving activities in coastal waters are subject to permits from the harbour master (Art.6). Other items covered by the Harbour Law include the removal of shipwrecks and other objects that disrupt the safety of navigation in harbour areas and regulations on ship sheltering and loading and unloading in harbours.

### **3.2.2. c. The Environmental Law**

This Law administered by the Ministry of Environment and Urban Planning covers environmental issues generally. Several by-laws that have been passed under the Environmental Law deal with issues such as air pollution, noise, water quality, solid waste management and environmental impact assessment (EIA), and provide the rules and regulations for environmental management Art. 8, entitled the “prohibition of pollution”, referred to as laws that cover various issues related to pollution of coastal waters.

The law on “Water Pollution Control” classifies lake waters according to their quality (Art. 9), and coastal and seawaters according to their dominant use (Art.14).

For the purpose of establishing the necessary set up for securing the transfer of the natural beauty of areas which have ecological significance at national and international levels and which are sensitive to degradation, to future generations, the Council of Ministers is authorized to identify and declare “Specially Protected Areas”, to determine the principles of protection and utilization within these areas, and to decide which ministry is going to prepare and implement the plans and projects (Art. 9).

“Organizations, companies and establishments that may cause environmental problems through activities which they plan to carry out, are required to prepare an environmental impact assessment report” (Art. 10).

The EIA by laws (passed on 7.2.1993 for the first time, and revised twice on 23.6.1997 and 6.6.2002) provide the list of projects for which environmental impact assessment reports are required, outline the contents of the report, and describe the authority and procedure for their review and approval.

#### **3.2.2.d. The Fisheries Law**

The scope of this law is the “protection, exploitation, production and control of living resources” (Art. 1). The responsible government unit is the Ministry of Food, Agriculture and Livestock. The Law prohibits the dumping of substances into inland waters and into the production areas in seas and their neighbouring areas, which may cause harm to living resources, or to people who catch or consume them, or to the vehicles, gears and tools that are used to catch them.

### **3.2.2.e. National Parks Law and Regulation for SPA`s**

The Ministry of Environment and Forestry is responsible for the management of the areas covered by this Law.

The purpose of this Law is specified as the “identification of areas which possess values of national and international importance, as national park, nature park, nature monument, and nature protection area, and the protection, enhancement and management of these areas without degrading their values and characteristics” (Art. 1).

National parks are declared by a decree of the Council of Ministers, following a proposal of the Ministry of Forestry (renamed the Ministry of Forestry and Water Affairs in 2011), which is supported by earlier reports from the Ministries of National Defence, Public Works and Settlements, Culture, and Tourism, and other ministries if deemed necessary (Art. 3).

Special Protected Areas are regulated by The Council of Ministers Decree for the establishment of an Agency for Specially Protected Areas. The Agency was initially set up under the Prime Minister’s Office. It was transferred to the auspices of the Ministry of Forestry and Water Affairs.

The Council of Ministers Decree for the establishment of an Agency for Specially Protected Areas aims to set up an Agency for Special Protected Areas, which has duties and responsibilities “in special protected areas already declared or yet to be declared, to take all kinds of measures to solve environmental problems and to protect environmental wealth, to establish principles of protection and utilization in these areas, to prepare land use plans, to revise and approve plans of all scales and planning decisions” (Art. 1).




### 3.2.3. Previous Studies and Projects for the Turkish Coasts

#### 3.2.3. a. Coastal Area Management Programme (CAMP) for the bay of Izmir

The government of Turkey was involved in a Coastal Area Management Programme (CAMP) for the Bay of Izmir in the period 1994 – 1998. The details of this programme are presented below.

**Table 3.4. Coastal Area Management Programme (CAMP) for the bay of Izmir**

<i>Area covered:</i>	<ul style="list-style-type: none"> <li>The bay of IZMIR</li> </ul> 
<i>Major problems and issues:</i>	<ul style="list-style-type: none"> <li>Natural systems are no longer able to accommodate the pressures of human activities</li> <li>Port facilities and navigating vessels are a constant threat to the bay's ecosystems</li> <li>Insufficient cross-sectoral (horizontal) and institutional (vertical) coordination and integration of activities at various institutional levels</li> <li>Absence of an adequate system of integrated planning and management</li> </ul>
<i>Project activities:</i>	<ul style="list-style-type: none"> <li>Country Pilot Project (1987 – 1989) <ul style="list-style-type: none"> <li>Identify and propose urgent measures towards the improvement of the Izmir Bay</li> <li>Create appropriate conditions for carrying out actions in the field of liquid waste collection, treatment and disposal</li> <li>Organise training and preparatory activities leading to the preparation of an integrated plan for the Municipality of Izmir</li> </ul> </li> <li>CAMP (1990 – 1993) <ul style="list-style-type: none"> <li>Implementation of protocols, signed by the Mediterranean countries</li> <li>Activities relative tot the recovery of the Izmir Bay</li> <li>Establishment of ICZM</li> </ul> </li> </ul>
<i>Timeframe:</i>	February 1994 – November 1998

(Policy Research Corporation based PAP/RAC, 1998)

### **3.2.3. b. European Union Funded or Organized Projects**

Some of the EU-funded projects that Turkey is involved in regarding ICZM or Marine Spatial Planning are listed below (European Commission study, 2011):

#### **The HERMES (Hotspot Ecosystems Research on the Margins of European Seas) project:**

HERMES is an international, multidisciplinary research programme investigating Europe's deep marine ecosystems and their environment.

HERMES is funded by the European Commission and brought together expertise in biodiversity, geology, sedimentology, physical oceanography, microbiology and biogeochemistry so to better understand the relationships between biodiversity and ecosystem functioning.

HERMES study sites extend from the Arctic to the Black Sea and include biodiversity hotspots such as cold seeps, cold-water coral mounds and reefs, canyons and anoxic environments, and communities found on open slopes. These important systems were chosen as a focus for research due to their possible biological fragility, unique genetic resources, global relevance to carbon cycling and susceptibility to global change and human impact.

The countries involved in the project are Belgium, France, Germany, Greece, Ireland, Italy, Kenya, Morocco, the Netherlands, Norway, Portugal, Romania, Russia, Spain, Sweden, Turkey, the United Kingdom and Ukraine. ([www.eu-hermes.net](http://www.eu-hermes.net))

**The MedPAN (Network of managers of marine protected areas in the Mediterranean) project:**

MedPAN is the network of managers of marine protected areas in the Mediterranean. The objective of the network is to improve the effectiveness of marine protected areas management in the Mediterranean.

The MedPAN network today counts over 40 members, mainly managers of marine protected areas from the entire Mediterranean basin, and 23 partners that are keen to contribute to the strengthening of the network. These partners manage more than 30 marine protected areas and are working towards the creation of several new sites.

Since 1990, the MedPAN network has sought to bring together the managers of Mediterranean marine protected areas (MPAs) and to support them in their management activities. A legally independent structure since the end of 2008, MedPAN has recently staffed its permanent secretariat and established it in Hyères, France.

The countries involved in project are Algeria, Croatia, France, Greece, Italy, Morocco, Malta, Slovenia, Spain, Tunisia and Turkey. ([www.medpan.org](http://www.medpan.org))

**The PEGASO (People for Ecosystem-based Governance in Assessing Sustainable development) project:**

The main objective of PEGASO is to build on existing capacities and develop common novel approaches to support integrated policies for the coastal, marine and maritime realms of the Mediterranean and Black Sea Basins in ways that are consistent with and relevant to the implementation of the ICZM Protocol for the Mediterranean.

PEGASO will use the model of the existing ICZM Protocol for the Mediterranean and adjust it to the needs of the Black Sea through three innovative actions. Constructing an ICZM governance platform as a bridge between scientist and end user communities, going far beyond a conventional bridging, refining and further developing efficient and easy to use tools for making sustainability assessments in the coastal zone (indicators, accounting methods, models and scenarios).

They will be tested and validated in a multi scale approach for integrated regional assessment through a number of relevant pilot sites. A Spatial Data Infrastructure (SDI), will be implemented following the INSPIRE Directive, to organize and standardize spatial data to support information sharing on an interactive visor, to make it available to the ICZM Platform, and to disseminate all results of the project to the end users and interested parties.

The countries involved in this project are Algeria, Belgium, Egypt, France, Greece, Croatia, Italy, Lebanon, Morocco, Romania, Spain, Switzerland, Tunisia, Turkey, the United Kingdom and Ukraine. ([www.pegasoproject.eu](http://www.pegasoproject.eu))

**The SAFEMED (Euromed Co-Operation on Maritime Safety and Prevention of Pollution from Ships) project:**

The SafeMed Project is a response to the interest of the European Union (EU) to develop Euro-Mediterranean co-operation in the field of maritime safety and security, prevention of pollution from ships and marine environmental issues by providing technical advice and support to the non-EU Mediterranean countries identified in the 1995 Barcelona Process.

The objective is to mitigate the existing imbalance in the application of maritime legislation in the region between the EU Member States and the Mediterranean partner countries through promoting a coherent, effective and uniform implementation of the relevant international conventions and rules aimed at better protecting the marine environment in the Mediterranean region by preventing pollution from ships.

With the intention to tackle the problem, a first SafeMed project (SafeMed I), developed in co-operation with the Euro-Mediterranean Transport Forum (EUROMED), ran from 2006 until 2008.

In view of the achievements of SafeMed I, the European Commission's EuropeAid Cooperation Office and the Mediterranean partner countries agreed on the idea to launch a second SafeMed project (SafeMed II), which covers the years 2009-2011.

As was the case for SafeMed I, the Project is implemented by the IMO's Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), operating within the framework of the Mediterranean Action Plan (MAP) of the Regional Seas Programme of the United Nations Environment Programme (UNEP).

The SafeMed II Project assists the Mediterranean partner countries with the further implementation of the 2007 adopted Regional Transport Action Plan (RTAP) for the Mediterranean 2007-2013.

The countries involved in project are Algeria, Egypt, Israel, Jordanian, Lebanon, Morocco, Palestinian Authority, Syria, Tunisia and Turkey. ([www.safemedproject.org](http://www.safemedproject.org))

### **3.2.3. c. Strengthening Protected Area Network of Turkey: Catalysing Sustainability of Marine and Coastal Protected Areas (May 2009 – October 2013)**

The project's implementing agency is the United Nations Development Program (UNDP). The project aims to facilitate expansion of the national system of marine and coastal protected areas and improve its management effectiveness.

The Kas-Kekova pilot project is part of the MedPAN South project that aims to enhance the effective conservation of regionally important coastal and marine biodiversity features by assisting eligible countries, in the southern and eastern parts of the Mediterranean, to improve the management of their MPAs and to promote the establishment of new MPAs.

It involves collaboration between EPASA (The Turkish Environmental Protection Agency for Special Areas) and WWF-Turkey for the MedPAN South Project and collaboration with the Global Environment Fund (GEF) for EPASA's project on the marine Specially Protected Areas (SPAs) of Turkey (European Commission study, 2011).

### **3.2.3. d. Integrated Coastal and Marine Management Planning of the Gökova SEPA and development of Model Management Planning in Turkey (January 2009 to November 2010)**

Partners involved in the project are the Rubicon Foundation (within the BBI Matra Program of the Netherlands Agriculture Ministry), SADAFAG (Turkish NGO), Environmental Protection Agency for Special Areas, Ministry of Agriculture and Rural Affairs.

The project aims to protect the Gökova Bay and its biodiversity by developing sustainable marine and coastal management planning and integration with socio-economic activities.

### **3.2.3. e. Technical Assistance to Transportation Infrastructure Needs Assessment**

The project to provide “Technical Assistance to Transportation Infrastructure Needs Assessment (TINA)” was funded by the European Union and the Central Finance & Contracts Unit in Ankara.

The objective of the TINA Turkey project (carried out within the period 2005-2007) was to identify a core multi-modal transport network within the Republic of Turkey and to extend the European Union's Trans-European Transport Networks to Turkey.

Following parts of the transport infrastructure were in the scope of the analyses: road and railway network, as well as seaports and airports.

The project is divided into three main activities. First, the development of a traffic forecasting model and the projection of traffic flows for 2020. This task was achieved by an extension of the existing VACLAV/ NEAC modelling platform to Turkey.

Second, a multimodal core network was defined and analysed, and, subsequently, potential network investments were prioritised by means of a Multi-Criteria Analysis. Third, a common database was developed using GIS technology.

The results of the project form the basis for the negotiations between the Turkish government and the European Commission on Chapter 21 – Trans-European networks.

Institut für Wirtschaftspolitik und Wirtschaftsforschung (IWW) was responsible for the computation of a passenger O/D matrix for the modes road, rail and air and the generation of passenger demand forecasts for each of the infrastructure scenarios. Furthermore, the traffic assignment for the modes of road, rail and air were in the scope of IWW's tasks.

**Figure 3.5. TINA Project 2020 Network for Airport-Seaports Turkey**



(Ministry of Transport, 2007)



### **3.2.3. f. Master Plans Funded by Ministry of Public Works&Settlements**

The Project of Integrated Planning and Management for Coastal Zones of Izmit Bay (Kocaeli – Yalova) was funded by the Ministry of Public Works & Settlements in late 2009 and finished in 2 years' time. The same Ministry has delivered two projects for Iskenderun Bay, Antalya Bay and Samsun and Sinop regions.

These projects are all local projects and do not cover all the coasts of Turkey, but they are busy coastal regions. In these projects all the covered coastal zones were divided into tourism, recreation, coastal facilities such as ports and others and cultural areas or urban.

It was expected for the Ministry to give construction licences to entrepreneurs according to these plans. However the structure of the Ministry has been changed by the government and has been renamed the Ministry of Environment and Urban Planning.

When trying to obtain permission to construct a coastal facility it took 2-3 years and one of the most time consuming steps was the Environmental Impact Assessment. Today, all construction permissions on coasts are being issued by the Ministry of Environment and Urban Planning except for some special areas such as tourism, forest or military zones.

Environmental affairs and urban planning will be examined by the same Ministry, so it is expected for permission periods to get shorter by decreasing bureaucratic steps and there will be a more coordinated process of permission.

Figure 3.6. shows the Project of Integrated Planning and Management for Antalya Bay and it shows all the different zones like tourism, public, cultural, forest, and coastal facilities zones determined by different public institutions.

**Figure 3.6. Project of Integrated Planning and Management for Antalya Bay**

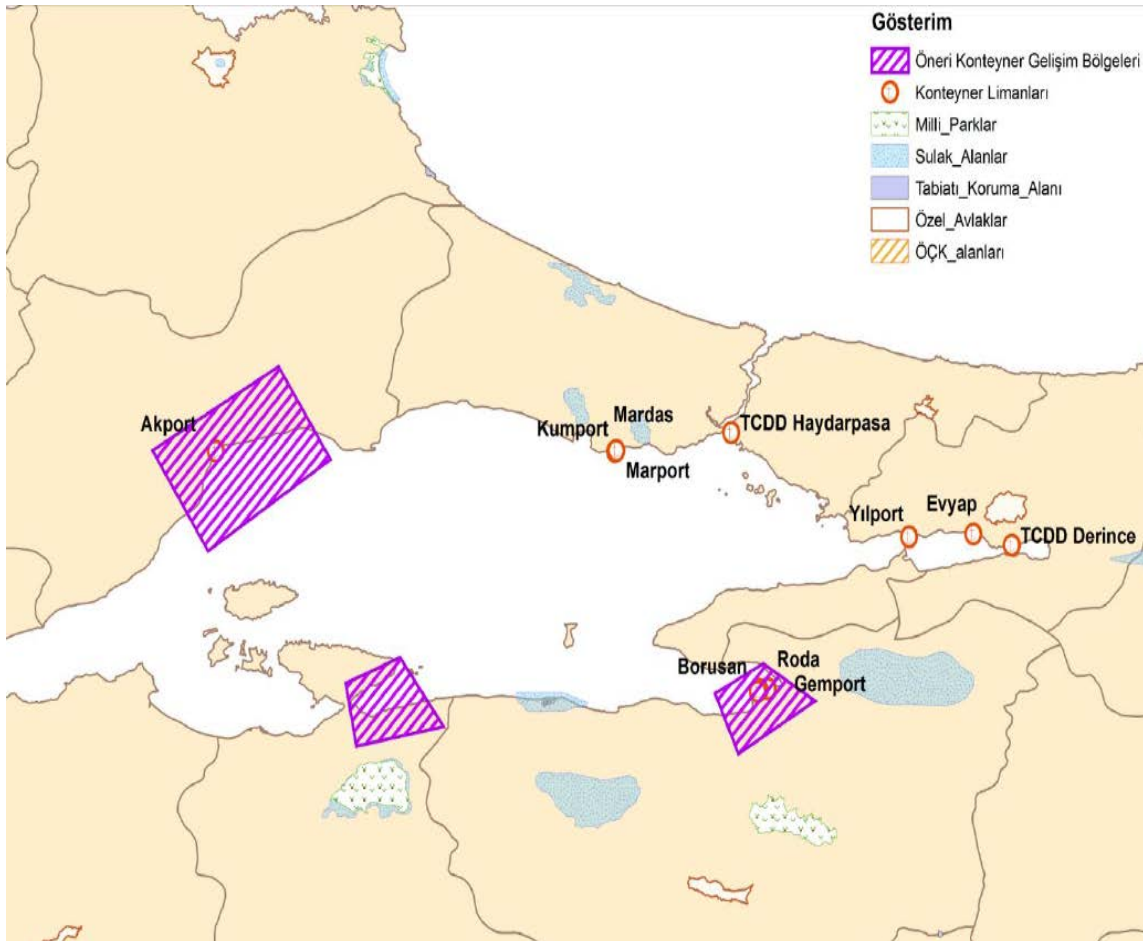


(Ministry of Public Works and Settlement, 2010)

### 3.2.3. g. Master Plans Funded by Ministry of Transport, Maritime and Communication

In 2009, the Ministry of Transport, Maritime and Communication started 3 new projects for Turkish Coasts called the Master Plan of Coastal Facilities for Transport, Master Plan of Coastal Facilities for Tourism and Master Plan of Coastal Facilities for Fishery. Figure 3.7 shows the Master Plan of Coastal Facilities for Transport for the Marmara Region which has the heaviest volume of sea traffic in Turkey and the purple zones show proposed areas for new container terminals.

**Figure 3.7. Master Plan of Coastal Facilities for Transport**



(Ministry of Transport, Maritime and Communication, 2011)

### **3.2.4. European Union Report for ICZM Implementation in Turkey**

According to the Final Report for Exploring the potential of Maritime Spatial Planning in the Mediterranean Sea (Consisting of 22 countries (Albania, Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Monaco, Montenegro, Morocco, Slovenia, Spain, Syria, Tunisia, Turkey, UK (Gibraltar))) prepared for the European Commission Directorate-General for Maritime Affairs and Fisheries in 2011, the evaluations made for Turkey regarding ICZM implementation are presented below:

- Turkey has not reported officially to the EU on the ICZM Recommendation,
- Holistic legal frameworks for ICZM and institutional mechanisms have not yet been established in Turkey. The legal framework offers neither a wide scope ICZM law nor a special institutional development in this area and therefore efforts do not go far beyond the project level,
- Since there is neither a law that covers all respects related to coastal zones, nor a special institutional structure for this purpose, various organizations have authority which overlap and create gaps or conflicts in management,
- Increasing coastal problems led to the establishment of a number of units at the central governmental level, such as the 'Coastal Inventory Agency' within the Ministry of Public Works and Housing (charged with determining the coastal shoreline and developing inventories with regard to the implementation of the Coastal Law) and the National Committee on Turkish Coastal Zone Management (KAY) in 1993 (serves an important role in the ICZM approach at the national level through the organization of seminars, courses and projects),

- Uncoordinated policy/management as regards coastal planning,
- Turkey has mainly committed itself to the implementation of integrated coastal zone management by taking part in the development of and signing of several international agreements and conventions (European Commission Study, 2011),
- For access to data and scientific knowledge based on desk research and the information received by stakeholders, it could not be examined to what extent the country has sufficient marine data available or the scientific knowledge to map marine activities; such information has not been identified;
- For institutional framework for marine policy and/or coastal planning various organizations have responsibilities in planning and/or coastal management resulting in overlap as well as gaps; institutional frameworks for ICZM have not yet been established; and ICZM efforts do not go beyond the project level,
- For openness to cross-border or international cooperation, with regard to MSP disputes with Cyprus, EEZ boundaries and the delimitation agreements Cyprus established with its neighboring countries; this dispute hinders potential oil and gas exploitation in this area,
- Turkey has not ratified UNCLOS due to problems between Greece and Turkey regarding limits of territorial waters.

According to the report, the main achievements of Turkey in terms of ICZM implementation are as follows.

- Turkey has adopted a number of policies aimed at sustainable development that respect the balance between economic development and environmental protection and the use of necessary tools for these purposes.
- In 1993 the National Committee on Turkish Coastal Zone Management (KAY) was established.
- Several project proposals have been submitted to the World Bank and have been found appropriate for implementation and in line with ICZM methodologies.
- Civil society participation features low, but NGOs and public consciousness are developing rapidly and becoming widespread.

### **3.3. Conclusions**

Due to its central geographical location between Europe and Asia and a fast growing economy, Turkey has become an important trade hub between the two continents.

With a coast line of more than 8.400 km. and a strategic position between Europe and Asia, Turkey has over 400 marine facilities in coastal regions including ports, marinas, fishing quarries, shipyards, ship recycling facilities and others.

In Turkish coastal zones, in terms of traffic and number, maybe the most significant coastal facilities are ports. Ports need huge back areas for extensions and hinterlands as well as logistic connections to highways or railways.

But after the rapid development period starting in the 1980`s, effectiveness problems regarding public ports led private companies to construct their own ports or terminals in the areas they could find and governments could not control this rapid development. The main reason for this uncontrolled port number is lack of planned development. Thirty years ago there was no planning process by any Ministry.

But now Turkey has many national and local master plans but when governments change, all things that have been done for the coasts is forgotten and thrown to the back of shelves. Even the governments that make master plans in their governance period usually abstain from implementing these plans.

Actually the Ministry of Public Works and Settlement which is now called the Ministry of Environment and Urban Planning is in charge of giving the final decision about zoning plan approval and construction licenses on coasts but the Ministry of Transport is on the operation side.

Thus, all the operational licenses for ports and ship yards are issued by the Ministry of Transport but sometimes there may be problems regarding the chosen place for construction like in Ambarli Port.

Also for tourism facilities that will be constructed on coastal zones, the only authorized institution for construction and operation licenses is the Ministry of Culture and Tourism.

Another example of coastal facilities, fishery quarries, which will be constructed on coastal zones, the only authorized institution for construction and operation licenses is the Ministry of Food, Agriculture and Livestock.

So the Ministry of Transport, Maritime and Communication has no authority with regard to approval of zoning plans and operations of tourism, forest or military zone facilities; however, it has the authority for operation licenses for ports and shipyards, and it has the most detailed master plan for all Turkish coasts.

The main problem starts with the question of, which plan will be used, the Ministry that has zoning plan approval authority for coastal facilities in coastal zones except tourism, forest or military zones or the Ministry that has the best master plan but who has no authority or the Ministry that has both authority for approval of zoning plans and giving operation licenses but which is available only in tourism areas?

Another problem is almost all Ministries have some authority by their own institutional laws on coastal zones especially for ports, yet this situation leads to a lot of bureaucracy and conflicts, delays and most importantly an ineffective usage of national resources.



Also there is no definition of ICZM in regulations. The definition of ICZM and implementation procedures including responsible institution for implementation must be in regulation by decree of law.

There are no local or regional governments in Turkey. The central government cannot reach every place and this situation leads local authorities to stay far away from the decision making process or even thinking or offering a solution for the problems that exist in their region because this can cause the central government to consider their proposals as criticisms.

Another important point is about financial resources. Since governments do not pay much attention to coastal zone management, financial resources are very limited.

Also because it is the last priority of governments, public officers have little knowledge or awareness about ICZM implementation. However, this is like “Which came first, the chicken or the egg?”. Should officers make politicians aware of an issue or should politicians direct officers?

We can see the effect of these problems in the report prepared for the Mediterranean region by the European Union regarding ICZM implementation. In the report there are some criticisms such as uncoordinated policy/management as regards coastal planning and the lack of institutional mechanisms and regulations for ICZM implementation.

These factors can be counted as major problems for the implementation process of ICZM, but these factors can all be mitigated with political stability for implementation and successful regulations that will be defined in the last chapter. So politicians and officers must work together with public participation and awareness.

## **4. CHAPTER IV**

### **4.1. Outline of Integrated Coastal Zone Management Action Plan for Turkey**

#### **4.1.1. Vision**

Turkey's vision is for a coastal zone which is owned by no one but appropriated by everyone and serves for a sustainable environmental, economic and social development.

#### **4.1.2. Purpose of Plan**

The purpose of the Integrated Coastal Zone Management Plan for Turkey is to determine the actions for utilizing every meter of the Turkish coastline in an effective and sustainable way.

#### **4.1.3. Implementation Area and Period**

The plan shall be available for the 5 years period of 2014-2018 and for all the coasts of Turkey.

#### **4.1.4. Strategic Objectives**

4.1.4.1. Establish effective institutional and legal frameworks for ICZM implementation.

4.1.4.2. Promote integrated planning and development of coordination between related institutions.

4.1.4.3. Increase capacity building, information and public participation.

4.1.4.4.Preserve coastal and marine resources and environment and manage environmental risks.

4.1.4.5.Promote sustainable development of social and economic benefits of coastal zones.

#### **4.1.5. Entry into force and Updating Procedure**

The plan will enter into force when approved by the ICZM High Committee and shall be reviewed after 2,5 years of approval and renewed after 5 years of approval.

### **4.2. Implementation of Action Plan**

#### **4.2.1. Establish effective institutional and legal basis for ICZM implementation process.**

Addressing conflicts of interest arising from different sectors in the coastal zone through integration and coordination of sectorial efforts and decision making processes is essential but in order to achieve this integration a legal framework and institutional capacities should allow this via laws and regulations.

In Turkey, there are special zones protected and operated by law by different ministries but ports, shipyards, ship recycling facilities and fishery quarries have special laws for construction and operation but do not have special zones like in the tourism areas or forest areas.

So the first thing to do is make a law for the implementation of ICZM in Turkey. This law will be the umbrella for other special areas placed in coastal zones and other related coastal law.

Then laws for setting up port areas, shipyards and ship recycling areas and fishery quarry areas must be made and it is required to harmonize these laws concerning special areas and include some points for ICZM implementation. The main expected result of this strategic objective is a strong institutional and legal basis for ICZM via two strategies.

**Table 4.1. Strategies and Actions Regarding Strategic Objective-1**

Strategies	Actions
<p><b>1.</b> Setting up legal basis for the implementation of ICZM by law</p>	<p><b>a)</b> Develop ICZM law which includes responsible institutions and implementation process of ICZM plan,</p> <p><b>b)</b> Review and harmonize other sectorial laws such as harbour law, shipyard law, tourism area law, marine park law and so on,</p> <p><b>c)</b> Become a party to the “Protocol on ICZM in the Mediterranean” of the Barcelona Convention,</p>

<p><b>2. Strengthen institutional basis for supporting implementation of ICZM</b></p>	<p><b>a)</b> Finance the operations of the ICZM institutional framework,</p> <p><b>b)</b> Put in place institutional framework in support of ICZM implementation process,</p> <p><b>c)</b> Directing a ministry or other special institution for the preparation of ICZM Plan and implementation of ICZM process.</p>
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#### **4.2.2. Promote integrated planning and development of coordination between related institutions.**

Development activities in the coastal zone have occurred unplanned and uncoordinated in Turkey. The rapid developments of the economy, ineffectiveness of the public maritime sector and problems regarding privatization process have invited this situation.

Coastline planning and management of development activities has always been sectorial so different sectorial facilities have been directed to different institutions and this has led to uncoordinated mechanism of coastal management.

This has a led to changes in land use patterns, affecting negatively both environmental quality and economic stability for the local community. The main expected result of this strategic objective is coordinated management of coastal zones via three strategies.

**Table 4.2. Strategies and Actions Regarding Strategic Objective-2**

Strategies	Actions
<p><b>1.</b> Planning and management of coastal development;</p>	<p><b>a)</b> Prepare the first national ICZM Plan and put it into effect in harmonization with other studies made of Turkish coasts,</p> <p><b>b)</b> Put in place appropriate guidelines for managing development of different sectorial facilities in the coastal zone,</p>
<p><b>2.</b> Development of infrastructure based on ICZM planning;</p>	<p><b>a)</b> Promote and support the construction of infrastructure and operation of coastal facilities according to the ICZM Plan,</p> <p><b>b)</b> Promote private-public partnership for new and high capacity coastal facilities,</p>
<p><b>3.</b> Establish co-ordination and communication mechanisms within and between government institutions and other related stakeholders;</p>	<p><b>a)</b> Establish a High Coastal Committee responsible for approval of ICZM Plans and facilitating ICZM implementation via addressing coordination problems which consist of representatives of the top managers of related public institutions,</p>

	<p><b>b)</b> Establish a Coastal Support Committee responsible for monitoring and evaluation of the ICZM Process throughout the country via annual reports and supporting the decision making processes of responsible institutions by feedback and subject related reports which consist of representatives of the NGO`s, universities and municipalities.</p>
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#### **4.2.3. Building capacity with increasing public participation and information**

Inefficient capacity of education and inadequate research opportunities are the main causes of insufficient human resources for the implementation and awareness of the ICZM process. For sustainable development the basic element that is needed is well trained human resources.

In Turkey there is no efficient level of education in marine faculties regarding ICZM or coastal management. This is an issue that may be taken into hand at the post-graduate level but the post-graduate level is not so efficient either.

Without a proper education it is very hard to build public information and participation in ICZM implementation. So the main expected result of this strategic objective is capacity building regarding ICZM implementation via two strategies.

**Table 4.3. Strategies and Actions Regarding Strategic Objective-3**

<b>Strategies</b>	<b>Actions</b>
<p><b>1.</b> Increase education level in high school and university</p>	<p><b>a)</b> Preparing Public Awareness and Education Strategy for ICZM,</p> <p><b>b)</b> Cooperation with marine faculties to deliver some lectures about ICZM and coastal protection in their education programs,</p> <p><b>c)</b> Cooperation with the Ministry of Education to include some lectures for students beginning from the elementary level to inoculate them with the importance of coasts via field trips,</p> <p><b>d)</b> Preparation of some book for the elementary level and some videos that will be shown on television on public spot,</p>



<p><b>2. Establish and develop research and monitoring programs for the coastal zones</b></p>	<p><b>a) Harmonize and develop Geographical Information Systems (GIS) that are operated by different public institutions,</b></p> <p><b>b) Usage of data from GIS and other systems to support decision making processes for coasts via Coastal Information System that will be operated by the responsible institution for the ICZM plan.</b></p>
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#### **4.2.4. Preserve coastal and marine resources and manage environmental risks**

Coastal ecosystems consist of forests, mangroves, sea grass beds, deltas, sandy and rocky beaches and represent a home for the animals and plants living there so we have to take care of them. Also these areas have many economic and social benefits for mankind like tourism, fisheries and entertainment, such as diving.

However ineffective and over usage of these resources or destruction of these habitats will not only affect these animals and plants but also mankind in the long term. So it is beneficial for everyone to protect the environment.

Another thing to be mentioned and protected is the rich national cultural heritage of Turkey. Also climate change and global warming is threatening these habitats in a way that maybe we will not be able to control it one day. So it is better to take measures to protect nature before that day comes.

The main expected result of this strategic objective is to protect the marine environment in an efficient way via three strategies.

**Table 4.4. Strategies and Actions Regarding Strategic Objective-4**

<b>Strategies</b>	<b>Actions</b>
<b>1.</b> Protecting the marine and coastal environment	<p><b>a)</b> Preparing Marine and Coastal Protection Strategy for ICZM,</p> <p><b>b)</b> Improving the management of waste water and solid waste from cities to seas and rivers,</p> <p><b>c)</b> Providing potable water supplies,</p> <p><b>d)</b> Strengthening the regulations governing the protection of the coastal and marine environment in coordination with the Ministry of Environment and Urbanism,</p>
<b>2.</b> Preserve, protect and ensure the integrity of cultural and natural heritage	<p><b>a)</b> Prepare Turkish Coasts and Marine Environment Cultural Heritage Plan in coordination with Ministry of Culture and Tourism,</p>

	<p><b>b)</b> Establish Marine Cultural Heritage Information System,</p> <p><b>c)</b> Promote awareness and education targeting local communities and other stakeholders of the importance of cultural and natural heritage in socio-economic development,</p> <p><b>d)</b> Promote development of non-consumptive usage of natural marine heritage sites for the benefit of the community, such as cultural diving,</p>
<b>3. Get prepared for climate change</b>	<p><b>a)</b> Prepare a report on marine environmental risks resulting from climate change to see the possible effects,</p> <p><b>b)</b> Develop early warning systems for natural disasters such as tsunamis and sea-level rise and their effects and impacts on vulnerable areas.</p>

#### **4.2.5. Promote sustainable development of social & economic benefits of coastal zones.**

Natural resources of seas such as fishes, squids, octopus and seal are some of the resources for traditional coastal economic activities.

Destruction of mangroves and the marine environment or an oil spill or overfishing has detrimental effects on fish species and marine habitats and of course the benefits that mankind enjoys from the seas decreases.

Increasing tourism trends may cause decreases in fishing too but in most of the cases the value added potential of the tourism sector is much higher than that of fishing. Also declaration of marine national parks and protected areas limit areas for fishing but this is better for fish species and the fishing sector in the long term.

Another issue regarding economic benefits concerns the usage of coasts for facilities like ports, shipyards and so on. Rapid urbanization especially after the 1980`s has brought high levels of poverty and competition for coastal resources and space and this situation has resulted in the exertion of pressure on the coastal environment and many conflicts.

These conflicts and unplanned settlement of coastal facilities limits social benefits of the public from coasts. In most Turkish coastal cities, ports or ship yards which have huge areas are stranded in busy city centers. This situation leads to both congestion and traffic inside the city and limited social opportunities for public.

The main expected result of this strategic objective is to promote sustainable development of coasts via two strategies.

**Table 4.5. Strategies and Actions Regarding Strategic Objective-5**

Strategies	Actions
<p><b>1.</b> Promote sustainable social benefits of coastal zones</p>	<p><b>a)</b> Strengthen regulations regarding off-shore fisheries for the protection of the marine environment and coasts,</p> <p><b>b)</b> Promote shared responsibility with the private sector, NGOs and CBOs in the conservation and management of resources,</p> <p><b>c)</b> Promote municipalities by central government which increase social entertainment and usage of coastal zones for the public,</p> <p><b>d)</b> Ensure equity in access to land, and water space and use of coastal resources by increasing the number of public beaches and preventing hotels from blocking their frontal coasts,</p>

<p><b>2.</b> Promote sustainable economic benefits of coastal zones</p>	<p><b>a)</b> Promote off-shore fisheries for protection and support of sustainable development of fishery stocks,</p> <p><b>b)</b> With GIS systems which are open to every public institution involved in the decision making process for ICZM, decide on the usage of coasts in the most suitable way such as tourism, port, public area or other,</p> <p><b>c)</b> Promote a code of conduct for tourists and tourism operators that is sensitive to natural environmental resources which are important for economic benefits,</p> <p><b>d)</b> Provide information system for the effective usage of fishery stocks and other natural marine resources.</p>
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#### **4.2.6. Monitoring and Evaluation**

For the successful implementation of the ICZM process, monitoring and evaluation are essential. Assessment of planned activities according to the scheduled times, monitoring of outputs and ensuring the effective management of plans as well as continuous monitoring are the main purposes of this process.

##### **4.2.6.1. Institutional Basis for Monitoring and Evaluation**

A Coastal Support Committee will be responsible for monitoring and evaluation of the ICZM Process throughout the country via annual reports and supporting the decision making processes of responsible institutions with feedback and subject related reports.

This committee will have regular meetings at least once a year to discuss and evaluate the ongoing process of ICZM implementation. Other duties of this committee are to advise the High Coastal Committee on the implementation and facilitation of ICZM and also to highlight problems encountered by NGO`S, CBO`S, local management and other stakeholders.

##### **4.2.6.2. Data Collection, processing and storage**

Data will be collected through the Integrated GIS System and other information systems, also secondary sources such as field studies, workshops, surveys and investigations.

All collected data will be processed and analyzed through the use of computerized systems that will be set up by responsible institutions.

#### **4.2.6.3. Evaluation Reports**

Monitoring of the plan's implementation will be done on a continuous basis and an annual report will be prepared at the end of each financial year by the Coastal Support Committee.

The report shall have information on achievements made against set targets; documentation of best practices for the purpose of replication; challenges and recommendations on the way forward.

There will be a mid-term evaluation of the ICZM Action Plan and a review of the same after five years by the same committee.

#### **4.2.6.4. Communication and dissemination of information**

In order to ensure effective communication and information sharing, the Coastal Support Committee will organize forums, workshops and seminars with the participation of all stakeholders from different sectors.

Photos and videos will be shared through the official web site of the ICZM Plan and other methods of communication such as e-mail will be used efficiently.



### **4.3. Conclusions**

Planning is the most important part of not only the ICZM implementation process but of all long term works carrying strategic importance.

In the last chapter, the author proposed an Integrated Coastal Zone Management Action Plan for Turkey, prepared with the contribution of research into world-wide country based examples about ICZM plans.

The purpose of the action plan is to determine the actions for the utilization of every meter of the Turkish coastline in an effective and sustainable way. To achieve this purpose there are five strategic objectives as follows.

- Establish effective institutional and legal frameworks for ICZM implementation,
- Promote integrated planning and development of coordination between related institutions,
- Increase capacity building, information and public participation,
- Preserve coastal and marine resources and environment and manage environmental risks,
- Promote sustainable development of social & economic benefits of coastal zones.

Also strategies and actions to achieve these strategic objectives have been suggested along with a monitoring and evaluation process of the action plan.

## **5. OVERALL CONCLUSIONS&RECOMMENDATIONS**

As a general overview of the study;

Because more than half of world population is living along the coasts and the value of coasts is so high, most of the countries have some laws or regulations regarding their coasts to ensure some level of public property. And when it is a public issue then there must be plans, processes and strategies and so on like in the ICZM process.

As an analysis of best practices and worst examples via the continuing ICZM process across the world; it can be said that the factors of complexity of responsibilities, information blocks and non-durable funding are complicating the implementation of ICZM.

The issues related to public participation and awareness, sustainability of natural resources, livelihoods and socio-economic development of the coastal zone, education on coastal management, awareness and information programs on coastal zone management, coordinated implementation of policies and legislation, inadequate capacity, awareness and research in institutions and insufficient human resources to address coastal zone management issues are the major bottlenecks for the implementation of ICZM..

The factors affecting the failure of ICZM include unclear distribution of functions, timing of introduction of ICZM, leaving spatial planning institutions alone, insufficient time, unqualified manpower and insufficient funds.

From studying at the countries that are relatively more successful in the implementation of ICZM, it is clear that small and important coastline, proper allocation of competences, political leadership, and connection of local and central authorities and of course reliable funding are important factors leading to a successful ICZM regime.

ICZM is implemented by different institutions and actors from different levels such as the central government and local branches, municipalities, universities, NGO's, private companies, networking organizations, and scientific research centers.

Whether an ICZM strategy exists or not, the important thing is public awareness concerning coasts. If there is public awareness of an issue then governments will deal with it in a fast and proper way. Then this is the question: Are we aware enough of the importance of our coasts as citizens and if so, what are we doing to protect our coasts?

The general answer to this question will define the situation about coastal management. Governments cannot deal with every issue at the same time but in the author's view it is obvious that the issues that are most significant to the public are important to governments as well.

So the basic thing to do to increase the efficiency of ICZM implementation is to increase public awareness first. Eventually, pressure from the base of the community will lead the governments to take action.

With regard to Turkey's implementation of ICZM, Turkey has a coastline of over 8400 nm and over 400 coastal facilities such as ports, shipyards, fishery quarries, marinas and so on. Is this number too high?

I believe yes, and this is because of unplanned development beginning from the 1980's and lack of an ICZM strategy or plan during that period.

Turkey now has many national and local master plans but when governments change; all things that have been done for the coasts are forgotten and thrown to the back of the shelves. Even governments that make master plans in their governance period usually abstain from implementing these plans.

Uncoordinated mechanisms of coastal governance, distribution of different authorities to different institutions by laws, inefficiency and inadequacy of public and governmental awareness of coastal issues, lack of institutional mechanisms and regulations for ICZM implementation, limited financial and human resources are the other main problems or obstacles to the implementation process of ICZM in Turkey.

The effect of these problems can be seen in the report prepared for Mediterranean region by the European Union regarding ICZM implementation. In the report there are some criticisms which confirm the author's findings like; uncoordinated policy/management as regards coastal planning, lack of institutional mechanisms and regulations for ICZM implementation. However, all these factors can be achieved with efficient public awareness, political stability for the implementation of ICZM and with successful plans and regulations.

As a draft for the implementation of an ICZM Plan in Turkey, an action plan has been proposed including solutions to these problems in the last chapter of this study.

The purpose of the Integrated Coastal Zone Management Action Plan for Turkey is to determine the actions for utilizing every meter of the Turkish coastline in an effective and sustainable way.

To achieve this purpose, there are five strategic objectives as follows.

- Establish effective institutional and legal frameworks for ICZM implementation,
- Promote integrated planning and development of coordination between related institutions,
- Increase capacity building, information and public participation,
- Preserve coastal and marine resources and environment and manage environmental risks,
- Promote sustainable development of social and economic benefits of coastal zones.

Setting up a legal basis for the implementation of ICZM by law; strengthening the institutional basis for supporting implementation of ICZM; reviewing and harmonizing other sectorial laws such as harbour law, shipyard law, tourism area law, marine park law and so on; establishing co-ordination and communication mechanisms within and between government institutions and other related stakeholders; cooperating with marine faculties to prepare and deliver some lectures about ICZM and coastal protection in their education programmes; preserving, protecting and ensuring the integrity of cultural and natural heritage; and promoting municipalities which increase social entertainment and usage of coastal zones for public are some of the proposals and recommendations for strategies and actions for the Integrated Coastal Zone Management Action Plan for Turkey.

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