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INTEGRATED COASTAL ZONE MANAGEMENT: REVIEW OF PROGRESS IN SELECTED OECD COUNTRIES

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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This paper is also available in French.

FOREWORD

This publication examines the degree to which OECD countries have implemented the concept of "integrated coastal zone management" (ICZM), as contained in an OECD Council Recommendation adopted on 23 July 1992.

It is based on a questionnaire survey of OECD countries, carried out in late 1995/early 1996. An earlier draft was discussed at an Ad Hoc meeting of Experts on Coastal Zone Management, held at OECD Headquarters on 9-10 July 1996. The text has also been reviewed by the OECD Environment Policy Committee, and approved for derestriction under the "written procedure" on January 31, 1997. As a result, it now contains somewhat broader (and more detailed) information than was provided by the original responses to the questionnaire.

Dr. Frank Rijsberman (Resource Analysis Consulting, the Netherlands) drafted the original text. The contribution of various coastal zone management experts in OECD countries is also gratefully acknowledged.

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1. Introduction

Although the coastal zone covers less than 15 per cent of the earth's land surface, this is where the majority of the world's population lives and works [IPCC (1994)]. The global importance of coastal areas in terms of both ecological and socio-economic values is widely recognised. Still, trends over the past 20 years reveal increasing coastal pollution, accelerated destruction of coastal marine habitats and, in many areas, a declining catch of marine fish species that have been affected by over-fishing and pollution [WRI (1992)].

For this reason, the OECD conducted a study of integrated coastal zone management in Member countries over the period 1988-1991. Sixteen countries participated in this study (Australia, Canada, Finland, France, Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Sweden, Switzerland, Turkey, the United Kingdom, and the United States).

That study resulted in a synthesis report [OECD (1993*a*)] and several case studies [OECD (1993*b*)]. Some of the case studies were chosen to be geographically-specific (i.e. to investigate particular coastal zone management issues), while others analysed regional coastal problems or specific instruments or institutional mechanisms. The case studies carried out were (those marked with an asterisk were subsequently published in OECD (1993*b*):

- The Lenka Project and Coastal Zone Management in Norway *
- The Messolonghi-Aitolikon Coastal Wetland Area, Greece
- The Eastern Scheldt Estuary Study, Netherlands
- The Lagoon of Venice, Italy *
- The Effectiveness of the Helsinki Convention as a Tool for the Integrated Coastal Zone Management of the Baltic Sea (Denmark, Sweden, Finland, Germany)*
- Sustainable Development of the Fraser River Estuary, Canada: Success Amidst Failure *
- Integrating Environmental Considerations into the Management of Lake Geneva, Switzerland * (The definition of the coastal zone was interpreted to include the management of large international fresh-water zones, such as Lake Geneva, or the Great Lakes in North America.)
- Integration of Environmental Considerations into Coastal Zone Management: Izmir Bay, Turkey *
- Lagoon Ria de Aveiro, Portugal *
- The Chesapeake Bay, US
- South-East Tasmania Case Study, Australia *
- The Seine Estuary, France
- Kastela Bay, Yugoslavia
- The Seto Inland Sea, Japan *
- Coastal Zone Protection on the South Coast of the United Kingdom *
- An Institutional Response to Coastal Zone Management Problems in New Zealand

Based on the synthesis report and its related case studies, the OECD Council approved a Recommendation on Integrated Coastal Zone Management (23 July 1992). This Recommendation was accompanied by Guidelines (which provided further details on the Recommendation), and by the final report of the project (which provided guidance to Member countries for implementing the Recommendation).

The final section of the Recommendation requested reviews of progress: (i) in the *establishment of mechanisms* for integrated coastal zone management in Member countries, within two years of the Recommendation; and (ii) in the *effectiveness of these actions*, within five years. The OECD Secretariat subsequently decided that carrying out a review two years after the Recommendation had been adopted was not likely to demonstrate enough progress to justify the effort, and therefore decided to combine the two reviews into a single activity, five years later. This review was implemented largely through a questionnaire survey, to which 19 OECD countries, plus the European Commission, eventually responded. This report contains a summary of those responses, as well as additional material provided by some respondents. A draft of the report was reviewed by an *ad hoc* group of OECD ICZM experts in July 1996, and has since been revised to reflect that input.

2. The OECD Council Recommendation

The 1992 Council Recommendation contained the following essential elements (see also Annex 1):

- A Recommendation to set specific policy objectives for the coasts and their resources, to enhance co-ordination of government strategies, and to strengthen the integration of sectoral policies.
- Recommendations on instruments for coastal zone management that Member Countries should employ.
- Specific recommendations focusing on fisheries, tourism and international waters.

More specifically, the Recommendation stated that:

I. Policy objectives and integration

> ...”to achieve the goals of ecologically sustainable development and integrated resource management, strategic planning and integrated management of coastal zones should be developed, and implemented by Member countries, through:

i) Defining policy objectives specific for the coasts and their resources to provide guidance to and enhance co-ordination of national, regional and local government strategies/plans for coastal zones;

ii) Strengthening the integration and harmonisation of sectoral policies affecting coastal zone management and resource usage”.

This Recommendation was made because analysis of available material available suggested that the serious problems in the coastal zone could be attributed to three types of problems: (i) policy deficiency; (ii) intervention deficiency; and (iii) market failure [OECD (1993*a*)]. *Policy deficiency* (i.e. where policies are either absent or contradictory, leading to sub-optimal results and reduced net social benefits) was concluded to be a major source of coastal zone problems. Conversely, there were indications that there is a strong positive relationship between a well-organised, integrated, institutional mechanism, and efficient policy development.

II. Policy instruments

... "Member countries should employ the following policy instruments, individually or in combination:

i) Collection and updating of relevant information, and development of coastal environment indicators to guide planning and monitoring of coastal zone activities and processes;

ii) Establishment of environmental objectives for: land-use planning and zoning, coastal waters planning, ... conservation requirements, ecosystem protection and restoration, discharge limits, water quality for receiving waters and waters flowing into the coastal zone, and control and reduction of inputs from polluting and hazardous substances;

iii) Establishment and maintenance of monitoring and enforcement procedures for environmental objectives and targets;

iv) Environmental assessment incorporating economic and social criteria;

v) Public education and participation in decision-making at an early stage of policy formulation and project assessment, and adoption of wider public participation procedures;

vi) Application of regulations and economic instruments within the framework of the Polluter-Pays-Principle, and pricing coastal zone resources to reflect social costs of use and depletion".

The arguments that led to this Recommendation were partly related to *intervention deficiency* (i.e. where governments have decided to intervene through government-led coastal zone management, but where this intervention fails to achieve some of the objectives that have been set, for a variety of reasons). Some of these reasons included: (i) absence or inadequacy of information; (ii) lack of co-ordination among the many stakeholders operating in the coastal zone; (iii) poor demarcation of responsibilities between administrative agencies; (iv) lack of accurate targeting of the appropriate instrument; (v) poor implementation of policies; and (vi) lack of evaluation and monitoring.

Other arguments for the recommended instruments are derived from *market failure*, resulting from imperfect or non-valuation of resources, goods and services that occur at the coast, which can lead to inefficient allocation of coastal resources and degraded environments.

In addition to the above-mentioned recommendations on *policies* and *instruments*, the OECD Recommendation also included sections on three issues of special interest: (i) *fisheries*, for which there was considerable concern that both impacts of pollution and over-exploitation of resources had already created an unsustainable situation in a number of areas; (ii) *tourism*, which is a major industry, strongly linked to coastal resources, which is still rapidly growing, and for which there is concern that preventive action will be required to assure sustainable development; and (iii) *international* waters, for which it was felt that there was particular scope for improvement through international action. More specifically, the Council recommended that:

III. Fisheries

... “particular attention be given to achieving sustainable management and conservation of fishing resources at the local, national and international levels...”.

IV. Tourism

... “a designated co-ordination authority should ensure that a proper balance is found between tourism development and the carrying capacity of the coastal zone”.

V. International waters

... “international co-operation for the management of shared or common coastal areas should be enhanced by existing or extended international coastal zone management bodies preparing, implementing and monitoring an integrated action plan that is consistent with other relevant coastal zone management initiatives”.

3. The OECD ICZM Questionnaire

As noted above, a questionnaire survey was carried out, in order to provide information on which to base a review of: (i) progress towards establishment of mechanisms for ICZM; and (ii) effectiveness of actions taken in accordance with the original Recommendation. In practice, ICZM means different things in different countries, and a generalised review of either the development or the progress or effectiveness of policies is therefore not easily accomplished. The questionnaire was therefore developed in a format that allowed for different levels of input. The survey assumed that respondents would be familiar with the ICZM terminology as used by the OECD. Respondents were asked to give replies to essentially multiple-choice-type questions. For all questions, respondents were then asked to provide additional information concerning their answers, wherever appropriate. Finally, respondents were invited to provide any additional supporting documents that were available. The responses received are summarised in Annex 2.

The questionnaire started with several general introductory questions. These related to:

- the responsibility for ICZM in the country of the respondent, and the function of the respondent’s organisation in ICZM;
- the familiarity of the respondent with the OECD Council Recommendation (as well as with other international ICZM work), and the influence of this international work on ICZM policy in the country of the respondent;
- major recent initiatives related to ICZM in the country of the respondent, if any.

The second part of the questionnaire closely followed the structure and elements of the OECD Council Recommendation. For all questions, respondents were first asked to answer in a yes/no format. Wherever they answered “yes”, they were asked a follow-up question to provide details, and were then asked to provide supporting documents. Thirteen questions related to the specific issues dealt with in the Recommendation.

In an optional third part of the questionnaire, respondents were then asked to provide supplementary information on additional subjects of interest, such as: the use of economic instruments; assessment of vulnerability to sea level rise; international co-operation; and experience with institutional cross-sectoral linking mechanisms. Some countries provided such information — others did not.

Nineteen OECD countries, plus the European Commission, completed the questionnaire: Australia, Belgium, Canada, Finland, France, Denmark, Germany, Greece, Ireland, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Turkey, United Kingdom, and the United States. Ten countries, plus the European Commission, also provided additional reference material. This material has been used to compile Section 5.

Given that not all Member countries (not even all of the "coastal" countries) responded to the questionnaire, the results presented here are not necessarily representative for all OECD countries. In the following sections, therefore, the analysis refers only to the 19 countries listed above. Conclusions concerning the positions of, for instance, "most countries" therefore relate to answers given by at least 10 countries.

4. Country Responses

4.1 Background questions

In most countries, responsibility for promoting integrated coastal zone management is shared among national and sub-national government authorities (Table 1). The national level usually sets the broad objectives for ICZM, and may be involved in administering specific sectoral projects where these exist. The sub-national level normally plays a key role in the implementation of ICZM-related initiatives. The sub-national level also plays an increasingly strong role in the design of these programmes in the first place. In federal states (e.g. Australia, Canada, Germany, US), the level of sub-national responsibility tends to be higher than in non-federal countries. However, this phenomenon is not limited to federal countries -- France, for example, makes extensive use of regional/local resources in its ICZM activities.

All countries emphasise the "partnership" nature of the ICZM process. It is noteworthy in this respect that the responses to the questionnaire have generally been provided by *national* government agencies, but occasionally also by *organisations* acting on behalf of national government agencies. It must also be noted that the replies given to each of the questions asked will partly depend on the particular perspective of the specific government department that provided the answers (i.e. they probably contain some sectoral bias).

All responding countries indicate (Table 2) that they are familiar with the OECD Council Recommendation. Nine of the nineteen countries also state that this Recommendation has had some recent influence on their national ICZM policies. For example, it seems that the Recommendation has influenced the development of new legislation (Turkey), assisted in the development of new policy (UK), or supported the direction of new policy (US). Ten countries state that the Recommendation has not influenced policy in their country at all. There were no replies indicating that the Recommendation has had a *significant* influence.

Fifteen countries indicate (Table 3) some involvement in other international ICZM work, through a host of organisations and initiatives. Twelve countries indicate that this international work

has had an influence on ICZM at the national level. Of these, two (Ireland and Spain) report that this international work has had some influence on their ICZM activities, even though their country has not participated in it itself. Most countries indicate that the international work has had *some* influence, but Japan and Finland also report that it has had a *significant* influence.

One of the more interesting results of the evaluation is that 14 of the 19 respondents (with the exceptions of Belgium, Germany, Japan, Spain and Sweden) indicate that there have been major initiatives taken in their country related to the coastal zone in the last three years (Table 4). In most cases, this relates either to new coastal legislation or to a significant redirection of coastal policy that had either been recently adopted, or was under consideration at the time of responding to the questionnaire (late '95 to early '96). These major new developments in the large majority of countries clearly show that coastal zone management policy is undergoing significant and rather rapid change.

On the other hand, only one country (Greece) reports the establishment of an actual new institutional mechanism as a significant change that has occurred over the last few years (establishment of a National Commission for the Sustainable Use of the Coastal Zone). Nor does any country attempt to assess the effectiveness of these policy changes. This is probably because 10 of the 14 major changes reported are *new* national policies (currently under preparation or adopted only recently). Thus, it is not yet possible to say very much about the *effectiveness* of these new mechanisms.

4.2 Questions specifically related to the Recommendation

I. Policy objectives and integration

All but three countries (Finland, Japan and Spain) indicate (Table 5) that policy objectives for the coasts and their resources have been identified, or are currently under development (Greece and Ireland). In Germany, for example, the federal Nature Conservation Act protects several coastal biotope types; the Lande may then expand or reduce this list, to reflect local circumstances. All but six countries (Finland, Germany, Japan, Spain, Sweden, Turkey) indicate that some form of institutional mechanism has been designated to co-ordinate coastal policy across national, regional and local agencies. In Ireland, this involves *ad hoc* co-operation between three national government departments (not yet formalised).

In most cases, the authorities or mechanisms that have this responsibility are either a national government sectoral organisation or a generic — as opposed to ICZM-focused — government policy co-ordination committee. This appears to be essentially the same situation that led the OECD Programme to conclude in 1992 that there *is* a real policy deficiency in the coastal zone (i.e. where policies are either absent or contradictory). It must be noted, however, that there may be situations where co-ordination mechanisms *do* exist (e.g. in a land-use planning context), without these mechanisms being explicitly labelled as "coastal zone management" activities.

There are a few examples reported of dedicated coastal zone management co-ordination mechanisms, but it is difficult to assess the effectiveness of this — or any other — institutional change, due to the fact that it is not possible to assess what would have happened had the institution not been created. Australia reports the existence of a Commonwealth Coastal Co-ordinating Committee, with equivalent committees at the state level. The UK has an Interdepartmental Group on Coastal Policy, and the Netherlands has an Interdepartmental Committee on North Sea Affairs

(ICONA). Greece has recently established a National Commission for the sustainable use of coastal resources. Typically, these are co-ordinating committees, without executive power. Canada has a similar mechanism, now that its new Oceans Act has been enacted. In the USA, there is no formal, federal level co-ordinating mechanism, but the Coastal States of America organisation is an effective lobby-group of state level representatives that acts as an unofficial national co-ordinating body. Canada and the USA have also set up joint mechanisms for integrated planning of the Gulf of Maine (Gulf of Maine Council on Environmental Management), and for Puget Sound/Strait of Georgia (Washington State/Province of British Columbia Agreement).

II. Policy instruments

Coastal indicators and monitoring

Most countries are actively monitoring a range of environmental quality parameters in the coastal zone. These environmental indicators tend to be physical or biological in nature (e.g. related to bathing water quality), rather than being oriented towards management processes. There is evidence, however, that many countries are now putting more effort into the development of indicators that would, for example, allow an assessment of whether current or planned uses of the coastal zone are actually sustainable.

The Netherlands reports (Table 6) that coastal environmental indicators have been established and are being routinely monitored in that country. Examples of indicators being monitored include: (i) basis coastline; (ii) water quality criteria; (iii) functional areas in dune ecosystems; (iv) bathing water quality standards; (v) shellfish water quality standards; and (vi) the AMOEBE (an index of relative population sizes for reference species, as an indicator of biodiversity). There is also considerable indicator development being reported in other countries (e.g., Canada, France, Turkey and the US). All Member countries of the European Union are required by EU Directives to monitor at least bathing water and shellfish water quality. Most countries also report that they include coastal resources or the coastal zone in regularly published state-of-the-environment reports (fourteen of the nineteen respondents).

Environmental objectives for ICZM aspects and their enforcement

All countries that answered this question indicate (Table 7) that environmental objectives have been developed for a range of ICZM *sectoral* aspects, such as land-use planning and zoning, coastal waters planning, conservation requirements, ecosystem protection and restoration, discharge limits, water quality, and discharges of hazardous substances.

For example, Germany promotes the protection and restoration of ecosystems through various nature conservation and “protected areas” legislation. Discharge limits also exist for several hazardous substances; others are completely banned (e.g. DDT). Several Directives at the EU level, as well as National and sub-national Water Acts also limit the amount of discharge to coastal waters, or provide guidance on how to control these problems.

All but three countries which have sectoral CZM objectives also report having monitoring and enforcement procedures in place (except Belgium, Portugal and Spain), although their implementation is reported to be weak (Turkey) or partial (i.e. focusing largely on water quality — France and the US). In the European Union, the legal basis for environmental objectives for bathing water quality, shellfish water quality and conservation areas is provided by binding EU Directives.

Environmental impact assessment and public participation

All countries report (Table 8) that environmental impact assessment (EIA) procedures have been established, usually via legislation, which apply to the coastal zone, and which include economic and social criteria. Most countries also report that public participation procedures are an integral part of the EIA process. The disadvantage of this approach is that, at this late stage in the policy development process, the possible modifications of project, policy, or programme design are often rather limited. Examples of public participation in decision-making at an earlier stage of policy formulation and project assessment — as recommended in the OECD Recommendation — are more rare. For example, the US reports that public participation for both EIA and ICZM takes the form of "public comment" periods.

Even though basic EIA procedures have been widely established, there appears to be a consensus that these procedures do not apply in as many cases as would be desirable. In addition, the current procedures are not always felt to be effective. The EIA procedures currently in place often focus more on technical, physical, or biological factors, and less on socio-economic factors, than would be desirable. To remedy these problems, many countries have recently acted to reinforce their EIA procedures. For example, the European Union is currently preparing a new Directive on EIA activities.

Public participation in the preparation of coastal policies is generally seen to be a critical factor in their successful implementation. Thus, in countries where coastal policies are relatively well-established, public participation is normally an integral part (e.g. US and UK) of the planning process.

Polluter Pays Principle and resource pricing

Most countries indicate (Table 9) that the Polluter Pays Principle has been formally adopted as a basis for dealing with pollution. In the Netherlands, for example, the Law on Surface Water Pollution (WVO) provides the basis for charging polluters for discharges. Turkey also reports the planned establishment of an Environmental Fund that will receive pollution charges from industry on the basis of the pollution hazard they represent. Water charges are an integral part of the financing of Water Basin Management Agencies in France.

Rather fewer countries report the use of the User Pays Principle at a level where prices reflect the full socio-economic cost of resource use. However, the recent Australian CZM policy has adopted the User Pays Principle as one of its guiding principles. In New Zealand, there is a proposal to let regional authorities collect rental fees from users of coastal resources, at price levels which ensure sustainable development and use. The Netherlands and the US indicate that, for specific cases, social costs are included in prices, and that these approaches are being further developed. The examples given for the Netherlands are: (i) compensation paid by shipping interests for the environmental costs of dredging navigation channels in the Scheldt estuary; and (ii) compensation paid by the oil and gas industry, if demonstrable negative environmental effects occur as a result of drilling in the Wadden Sea. The Netherlands Government has adopted (in 1996) the principle that environmental impacts of major infrastructure projects will have to be compensated, preferably by development or rehabilitation of environmental values in the project area, and otherwise in monetary terms. The US reports that natural resource economic valuation studies have recently become accepted practice, but that these are used more as a basis for awareness-raising, rather than for resource pricing

per se. A similar response comes from France, which points out that estimates of environmental costs remain a rather imprecise foundation on which to base specific PPP policies.

It must therefore generally be concluded that, although Member countries support the general principle of pricing resources at levels that reflect social costs of use and depletion, both the economic tools and the scientific understanding of ecosystems necessary to implement this Recommendation are still lacking. In a number of cases, economic instruments are being used in conjunction with regulatory tools, but not enough is yet known about the complementarity of these tools to allow for their optimal use.

Legally-enforced ICZM objectives

Only about half of the responding countries indicate (Table 10) that specific legislation has been enacted, or is being proposed, to promote and/or enforce coastal zone management objectives (Canada, Denmark, France, Greece, New Zealand, Norway, Spain, Sweden, Turkey and the USA). In many cases, however, other legislation which does not refer explicitly to the coastal zone is used to achieve what are, *de facto*, ICZM objectives.

III. Fisheries

In 1995, the UNFAO adopted a Code of Conduct on Responsible Fisheries, a key part of which is an Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas. Also in 1995, the UN adopted an Agreement for the Implementation of Provisions of the UN Law of the Sea Relating to the Conservation and Management of Straddling and Highly Migratory Fish Stocks. The 4th North Sea Conference (June 1995) also adopted several recommendations for management action by the competent authorities (the European Commission and Norway, in this case) to put fisheries management in the North Sea on a sustainable basis.

At the level of the European Union, and in the context of the Common Fisheries Policy, proposals on EU fisheries management objectives and strategies are currently under consideration. Work is also underway to try to reduce fishing fleet capacities. For the first time, a Regulation was adopted (1995) that set mesh sizes for static nets. The Commission has also recently presented detailed proposals for the technical conservation of fisheries resources.

At the national level, all but three OECD countries indicate (Table 11) that a pro-active policy to achieve sustainable management and conservation of fisheries resources has been established. Two of the three other countries may have intended to reply that their country did not have its own fisheries policy because they are EU members (Spain and Sweden).

Despite these changes, many fish stocks are still being exploited at (or beyond) their capacities. Recent technological developments also mean that fish are becoming easier to catch. Not surprisingly, therefore, three countries report that the environmental effectiveness of their fisheries management policies varies (Australia, Finland and US), while about half of respondents did not answer this question at all. The UK has recently introduced new powers to allow fisheries to be managed for the benefit of the marine environment in general, and reports that these measures *have* been effective in achieving their objectives. It is also useful to distinguish here between *sedentary* fish species (generally perceived to be well-managed in a number of locations) and international *migratory*

stocks (where management is often regarded as being less than totally successful). One concrete example that is reported of a successful policy for the former is the re-opening of the striped bass fishery to restricted fishing in the Chesapeake Bay in the US. France is experimenting with both quota and licensing arrangements for several inshore resources, such as scallops and crabs. These arrangements are developed and implemented in co-operation with the professional organisations involved in exploiting these resources.

IV. Tourism

Only five of the nineteen responding countries report having established national level co-ordination mechanisms to ensure sustainable development of tourism (Denmark, Greece, Netherlands, Sweden, UK, and US) (Table 12). In the Netherlands, this is a task for the provincial co-ordinating committees for the coast (POK). In the UK, the British Tourist Authority and Tourist Board are charged with this responsibility. In the US, the sustainable development of tourism is one of the goals addressed by the State CZM plans. A number of OECD Member countries feel that tourism development and the necessary associated environmental co-ordination and regulation can only be dealt with effectively at the *local* level. Spain, for example, does not have a national co-ordination mechanism, but feels that this is not necessary, as long as plans are well co-ordinated at the local level.

V. International waters

All but two (Japan and New Zealand) of the responding eighteen countries indicate that they are contracting party to some form of international agreements for the management of shared coastal waters (Table 13). In Canada, for example, this involves bilateral agreements with the US, as well as participation in Arctic Environmental Protection Strategy (AEPS), involving the eight circumpolar nations. Several other countries (e.g. Australia, the Netherlands, Turkey, and the US) also participate in various regional agreements. For Denmark, Finland, Germany, and Sweden, a key regional agreement is the Helsinki Convention on the Baltic Sea. The Paris and Oslo Conventions for the Protection of the Marine Environment in the North-East Atlantic (OSPAR) and the Conferences of Ministers Responsible for the Protection of the North Sea (North Sea Ministers' Conference) are two other key coastal management agreements involving several OECD countries.

5. Overview of Recent ICZM-Related Initiatives

5.1 Multilateral activities

5.1.1 General developments

There does not appear to be much disagreement that the coastal zone, world-wide, is under considerable pressure. The large majority of coastal problems are local or regional problems, however, that do not lend themselves as easily to concerted international action on a global scale, such as has been undertaken for issues related to the ozone layer, biodiversity or climate change. The regional approach to solving coastal and marine issues has therefore long been advocated by UNEP through its Regional Seas Programme as the most appropriate scale for solving coastal zone issues [WRI (1992)].

Following the 1972 Stockholm Environment Conference, a number of international agreements were concluded that focused on marine pollution. The Oslo Convention for the Prevention

of Marine Pollution by Dumping from Ships and Aircraft, for example, was also signed in 1972. The Paris Convention for the Prevention of Marine Pollution from Land-based Sources was signed in 1974. The renewed interest in the environment in the late 1980s to early 1990s, helped along by the Brundtland Report, and culminating in the 1992 Rio Conference on Environment and Development, also spurred new interest in on coastal matters. The Oslo and Paris Conventions, for example, were replaced in 1992 by a new Oslo and Paris (OSPAR) Convention for the Protection of the Marine Environment of the North-East Atlantic. The OSPAR Convention recognises the need for a more integrated approach to the issue of safeguarding the marine environment than the earlier separate Oslo and Paris Conventions had done.

Similarly, regional seas agreements have also moved towards a more integrated approach to coastal zone management and away from a more narrow pollution control approach. The Helsinki Convention on the Baltic Sea, for example, although quite comprehensive in its formal objectives, initially focused almost exclusively on pollution control issues. Following a number of recommendations adopted by the Helsinki Commission in 1994, however, a Committee for Spatial Development in the Baltic Sea Region has been established, which has prepared Common Guidelines for Spatial Planning of the Coastal Zone in the Baltic Sea Region.

World-wide, the 1990s have seen a rapid increase of international coastal zone management programmes and initiatives. In addition to UNEP's long-standing Regional Seas Programme, many other UN Agencies and international lending agencies (e.g. World Bank, ADB) now have ICZM-related projects and programmes. In Central and Eastern Europe, there are major programmes for the Aral Sea, Black Sea and Danube Delta, all of which involve concerted efforts by the international donor community. The Capacity 21 offices (UN action programme based on Agenda 21, adopted at UNCED) are setting up various coastal zone management demonstration projects. The GEF International Waters component also has a range of ICZM-related projects. From a scientific perspective, the Land-Ocean Interactions in the Coastal Zone (LOICZ) project of the International Geosphere Biosphere programme also fulfils an important co-ordinating role.

The International Oceanographic Commission (IOC) has taken several recent initiatives toward improved ICZM, particularly with regard to "capacity-building" in small island developing nations. The IOC is also the sponsoring body for the Global Ocean Observing System (GOOS), the Coastal Zone Module of which may provide useful information to support regional ICZM initiatives, especially in the less developed countries.

A good example of the multitude of ICZM-related activities in a specific region comes from South-East Asia. Here, the World Bank and Asian Development Bank are lending to countries for a range of ICZM-related investment and management projects (e.g. a major coral reef management project in Indonesia). The United States Agency for International Development (USAID) also sponsors the ASEAN-USAID programme on integrated coastal zone management in the Region. The Co-ordinating Committee for Coastal and Offshore Geoscience Programmes in East and Southeast Asia (CCOP, in Bangkok) conducts the regional COASTPLAN programme. UNDP has a "capacity building" programme related to the coastal zone under the "umbrella" of Capacity 21. There are also several other international ICZM activities — often training courses and case studies — sponsored by a host of UN agencies (e.g. the UN Economic and Social Commission for Asia and the Pacific [ESCAP], UNEP, and the International Maritime Organisation [IMO].

Some valuable coastal habitats under stress are also receiving special attention. Wetlands, mangroves and coral reefs, in particular, have many projects and initiatives focused on them. For wetlands, the RAMSAR Convention on wetlands of international importance is a major focus of attention. For coral

reefs, the International Coral Reef Initiative (ICRI) was established in 1993, following earlier programs by UNEP, IOC, WMO, WWF and IUCN [IUCN (1993)]. In 1997, there will be a series of activities under the "Year of the Reef" initiative as well.

There is also considerable and increasing attention being paid to coastal zone issues from NGOs and academia. For example, IUCN has long had a marine and coastal areas programme, and has recently published its own ICZM guidelines (Pernetta and Elder [1993]). In Europe, for example, there are several organisations that bring together stakeholders and experts on coastal zone issues and organise conferences (e.g. the European Union for Coastal Conservation [EUCC], EUROCOAST, COASTWATCH and MEDCOAST). In recent years, many workshops and major international conferences have been held to focus specifically on coastal zone management, as well as numerous specialised conferences, such as the well-known Coastal Engineering Conference series. Examples include:

- SeaChange, 1993, organised by UNESCO/IHP;
- the World Coast Conference 1993, organised by the Netherlands (under IPCC auspices);
- Littoral '94 and '96, organised by EUROCOAST;
- Coastal Zone Canada '94, '96, and (scheduled) '98;
- International Conference on Land-based Sources of Marine Pollution (1995), organised by the US (under UNEP auspices);
- Coastal Zone '95, biennial conference organised by ASCE;
- Coastlines '95, organised by the European Union for Coastal Conservation (EUCC);
- Coastal Conference '96: Coastal and Marine Pollution: Solutions and Action, organised by EUCC.

Another vector for increased attention and concerted international action related to the coastal zones has been the concern over climate change-induced sea level rise. The IPCC Subcommittee on Coastal Zone Management has mobilised a significant number of countries to participate in various assessments of the vulnerability of national coastal zones to accelerated sea level rise [IPCC (1994)]. Because the definition of "vulnerability" (as used by the IPCC), includes the capability to respond to (i.e. to adapt) to the impacts of climate change, these assessments inevitably relate to the country's coastal zone management capability as well. Through this route, the IPCC CZM work led to the World Coast Conference '93, hosted by the Netherlands, which focused largely on the climate change issues associated with coastal zone management [IPCC (1994); CZM Centre (1994)]. The most recent IPCC report, which confirmed the likelihood of anthroprogenically-accelerated sea level rise, will probably add even further to this interest in climate change questions.

A large number of international CZM initiatives have also been developed, usually (but not always) related to North-South co-operation. The interests of the North (i.e. OECD countries) generally appear to be more focused on environmental concerns, pollution control (through water quality programmes such as for the North Sea, Mediterranean Sea, Baltic Sea), and the conservation or rehabilitation of nature areas. The interests of the South, on the other hand, appear to be more often based on concerns related to the development of tourism or fisheries resources.

It is striking that a very large proportion of the activities outlined above focuses on *preparatory* activities (i.e. research, training courses, example projects and planning), rather than on *implementation* — as far as integrated coastal zone management is concerned. Investment projects often involve traditional sectoral investments in the coastal zone, such as harbours or tourism developments. There are still very few successful examples of, for example, institutional mechanisms

actually being established to bring about integrated coastal zone management across sectoral interests, or of coastal resources that are priced to reflect the social costs of resource use and/or depletion.

Coastal zone management itself is an area that is undergoing rapid changes due to developments in information technology. The Internet, particularly the World Wide Web, is changing the ease with which information becomes accessible to stakeholder groups around the world. There are also a number of coastal-zone-related Newsgroups on the Internet designed to answer questions from net users that might otherwise have required comprehensive library searches, or simply would never have unearthed the "grey literature" to which the Internet provides relatively easy access. The Netherlands, for example, is sponsoring a WWW-site, under the name of NETCOAST, for the purpose of increasing communication among the ICZM community.

Other related information technology developments are:

- breakthroughs in computing power that are likely to enable oceanographers and water quality modellers to do for water quality what meteorologists have been able to do for weather modelling (i.e. to show the impacts of far-off human activities on water quality and ecosystems in international waters); and
- development of computer-based Decision Support Systems that revolutionise the interaction among stakeholder groups over alternative management strategies, and the impacts thereof on coastal systems.

There has also been less emphasis so far at the international level on programmes whose aim is the *integrated* management of coastal regions. One example of a programme that *does* attempt to take such an integrated approach is the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities.

5.1.2 European Union

Coastal zone management in the Member countries of the European Union (EU) is influenced by several EU Directives. Water quality monitoring in the coastal zone, for example, is influenced by EU Directives that require the monitoring of shellfish water and bathing water quality (issued in the 1970s). The EU also compiles environmental indicator information for the EU territory, and publishes regular environmental status reports. The work programme of the European Environment Agency includes the supply of information to the EU demonstration programme on integrated management of coastal zones (see below). This information will be based on indicators of the state of the environment, and of pressures on these zones.

Fisheries is another area of coastal zone management in which the Member states have agreed to abide by a common policy. The Common Fisheries Policy of the European Union includes conservation measures designed to protect fishery resources, and structural measures to reach a balance between fishery efforts and available resources, in the interests of protecting marine ecosystems. Thus, any new *structural* measures covered in the Policy must include provisions to limit the environmental impact of intensive aquaculture (and to encourage the development of extensive aquaculture), as well as investments to improve hygiene and human and animal health. The Policy also contains several *conservation* measures (basic regulation, TAC and quotas, technical measures, inspection, limitation of fishing capacities) aimed at protecting fishery resources, and therefore at enhancing the environment. Examples include:

- Regulation (3760/92), which provides the basis for the conservation of fishery resources in a context of protecting of marine ecosystems;
- annual Regulations which fix the total allowable catch (TAC) of the principal marketable species in Community waters of the North-East Atlantic, and distributing these quotas among Member States;
- various Regulations designed to achieve a balance between fishery capacities and available resources (4028/86, 3690/93, 1627/94), or which place restrictions on the technical characteristics of fishing gear (3094/86: the Atlantic and the North Sea; 1866/86: the Baltic; and 1626/94: the Mediterranean).

Nature conservation and the safeguarding of biodiversity are also covered by other common initiatives within the EU. One major programme that is currently underway is an inventory of EU protected areas which have been proposed by the Member States (NATURA 2000).

On 31 October 1995, the Commission also adopted a Communication on Integrated Management of Coastal Zones (COM(95)511), which:

- reviewed the current situation of the European coasts and summarised relevant European legislation and policies;
- recalled the justifications for Community-wide action;
- launched a 3-year demonstration programme on the integrated management of coastal zones.

This programme is a joint initiative from three EU policy areas — environment, regional policies, and fisheries — and will be implemented in a co-ordinated fashion, within the framework of an inter-service group. It will provide solid technical information concerning the conditions which will have to be met, so that sustainable development can occur more quickly in the diverse situations comprising the European coastline. It will also stimulate a debate between the principal parties involved in the development of the coastal zones on the measures to be taken at both the European and other levels of competence.

The programme will run from mid-1996 to mid-1999, and will consist of three complementary modules:

- a set of demonstration projects on areas representative of the diversity of the territory of the European Union, as well as of the different levels of territorial competence. Past experience in integrated coastal management will be a key selection criterion;
- a series of thematic analyses will complement and illustrate the demonstration programme, and will allow each to structure its output around integrated management issues (e.g. concertation mechanisms and tools, role of public participation, nature of the information required);
- a wide discussion of results during the third year of the programme, associating each of the main parties concerned about the use and evolution of coastal zones.

5.2 National activities

In this section, significant recent ICZM-related developments in several OECD Member countries are discussed in more detail. The section is based largely on the supporting material that countries provided with their responses to the original questionnaire.

5.2.1 Australia

In Australia, a major Inquiry into the Coastal Zone was completed in 1993. This was followed in May 1995 with the release of a *Commonwealth Coastal Policy* and a co-operative programme involving all three levels of government — the *Coasts and Clean Seas Initiative*. The necessity of sustainable development of the coastal zone in Australia is aptly illustrated by the fact that 17 per cent of the country's landmass is classified as "coastal zone", which nevertheless supports about 86 per cent of the population [DEST (1995)].

The objective of the *Coastal Zone Inquiry* was to examine and report on the future of Australia's coastal zone resources with particular reference to the integrated management of building, tourism, mariculture, and associated developments in Australia's coastal zone [RAC (1993)]. The *Inquiry* was also designed to examine and report on the use (including *potential* use) of regulatory and economic instruments and institutional arrangements to promote integrated coastal zone management. The *Inquiry* — the most recent and comprehensive of many conducted into coastal issues in Australia — was conducted by the Resources Assessment Commission (RAC), which was itself established by Act in 1989. The *Inquiry* was conducted as an "open" process, with hearings organised on the basis of a conceptual framework paper, initially, followed later by a draft report. The RAC received 734 submissions from individuals and organisations during course of the preparing its final report.

The main conclusions of the *Inquiry*, as summarised in DEST (1995) pertain to:

- the need for increased community participation in ICZM;
- the need to provide more integrated solutions to particular management issues;
- the need to increase the capacity and knowledge of those with coastal management responsibilities to discharge them more effectively;
- the need to develop appropriate links with regional neighbours.

These conclusions are now being addressed through both the *Commonwealth Coastal Policy* and the *Coasts and Clean Seas Initiative*. The *Coastal Policy* is focused strongly on achieving better integration, along the same lines as advocated by the OECD Recommendation. Some of its guiding principles are:

- adoption of the User Pays Principle, on the grounds that resources ought to be priced at full social cost levels;
- wider adoption of the use of economic instruments for coastal zone management;
- embracing the principle of comprehensive resource conservation;
- requiring public participation, not only in EIA, but in planning *before* decision-making; local communities are also encouraged to take direct responsibility for the management of local coastal areas.

The *Coasts and Clean Seas Initiative* will address pollution problems, significant threats to biodiversity, and environmental protection needs in Australia's coastal areas,along three primary axes:

- it will target coastal pollution "hot spots" and significant threats to coastal water quality by focusing on previously-neglected areas of policy, including ocean outfalls, stormwater pollution, marine research, oil spills, and the development of an Oceans Policy;
- the environmental impact of sewage and stormwater in coastal and marine environments

will be ameliorated by providing (in collaboration with state and local governments) funds for capital works, as well as for improved technologies and management approaches; and
- the introduction of exotic marine pests into Australian waters through ships' ballast water will be addressed through research into on-board processing, safe mid-ocean exchanges, and improved ship design.

The specific initiatives developed to support the new *Coastal Policy* focus on better integration and co-ordination among Commonwealth, State and local government agencies, as well as with private organisations and industry. It also focuses on improving management of the coastal zone through community participation, awareness-raising, and capacity-building.

Another milestone in the management of Australia's marine environment was the production of the first State of the Marine Environment Report, SOMER [Zann (1995)]. SOMER is an independent scientific report based on 83 commissioned, peer-reviewed, technical papers. The report concluded that Australia's marine environment is still very incompletely described. Long-term scientific information about the marine environment — necessary to assess its environmental condition — is either very scattered or is lacking altogether.

An important initiative to develop an *Oceans Policy* for Australia is also presently underway. This Policy will include a co-ordinated planning and management framework for the conservation and sustainable use of waters of the Australian Exclusive Economic Zone (EEZ) into the next century. The Policy will be developed through consultation with governments, industry, and the public, and will encompass marine environmental issues, fisheries, offshore oil and gas exploration and extraction, navigation, ship safety, and marine science.

5.2.2 Canada

Canada has the longest coastline of any country in the world, but a much smaller percentage of its population living in that coastal zone [Fraser (1996)] (i.e. less than 25 per cent lives within 60 km of the coast, compared to Denmark's 80 per cent, or Greece's 33 per cent of the population within 2 km of the coast). This may explain why the coastal zone has not had a very prominent place on the political agenda in Canada. In fact, Canada is one of the few industrialised coastal nations that does not yet have a comprehensive policy or approach to its coastal zone [Hildebrand (1995)].

This has not been for lack of trying, however. After twenty years of emphasis on the *fisheries* aspects of oceans management, in late 1994, Canada shifted its attention to the broader *oceans management* issues, including a strong focus on the coastal zone. Some observers saw this as an almost complete reversal of priorities [Hildebrand (1995)]. The result was the new Canada Oceans Act. This new Act has three main parts [Fraser (1996)]:

- it defines Canada's sovereign rights and responsibilities, consistent with the UN Convention on the Law of the Sea;
- it defines the Canada Oceans Management Strategy, within the framework of which will ultimately be developed a nationally-consistent Coastal Zone Policy;
- it sets out the powers, duties and functions of the Minister, and makes provisions for the harmonisation of current legislative powers that now exists within 15 federal agencies

and departments.

Part II of the Act not only provides for a nationally-consistent policy on ICZM, it also provides for a national framework governing Marine Protected Areas, and for Marine Environmental Quality Guidelines. Under the Canadian Environmental Protection Act (CEPA), amendments at the proposal stage would also add a new focus on land-based sources of marine pollution.

The lack of a national policy has not hindered a large number of community-based local and regional initiatives from flourishing. There are working coastal zone management models already in place for the coastal bay or county level (e.g. Mahone Bay, Shelbourne and Guysborough Counties in Nova Scotia), and in the estuaries of major river basins (e.g. Fraser River Estuary Management Plan in British Columbia) [Fraser (1996)]. Some coastal provinces, such as Nova Scotia, have also developed their own policies. Largely due to the absence of a national policy, as well as the success achieved in establishing "bottom-up" planning initiatives, the Canadian conclusion had been that any new initiative to establish a national ICZM policy would have to be built on the framework of existing provincial, regional and local mechanisms, and firmly based on the needs of coastal communities themselves [Fraser (1996)].

5.2.3 Denmark

The Danish coastal zone is highly developed, with one-third of it being already built-up or planned for new development. Eighty per cent of the population lives in the coastal zone, and 56 per cent lives in coastal cities and towns [MEE (1994*a*)]. An important and typical aspect of coastal uses in Denmark is the prevalence of summer cottages. Coastal zone management in Denmark therefore focuses to a large extent on protection of the open coasts as an important natural and landscape resource.

Coastal zone management in Denmark has been made an integral part of spatial planning and nature conservation. Spatial planning is based on three basic elements — a *national* framework; *regional* plans which provide guidelines; and *municipal* plans, in which structural and land-use planning measures are worked out in more detail. Regional and municipal plans are revised every four years. The first Conservation of Nature Act of 1973 had already set up a 100 m protection zone, in which altering the state of the zone, as well as erection of structures (including fences) prohibited. The protection zone preserves nature and landscape values and maintains public access.

With the development of comprehensive spatial planning in the 1970s — largely in response to rapid developments in the coastal zone — a moratorium on new summer cottages and larger leisure facilities was proclaimed in a 3 km wide coastal strip. In 1981, this moratorium was replaced by a national planning directive banning new summer cottages and demanding comprehensive, strategic planning for tourism and recreation facilities. Structures higher than 8.5 m now require special permission from the Minister of the Environment.

Apparently due to unsatisfactory experiences with the implementation of the 1981 Planning Directive at the local level, the Minister of the Environment proposed to strengthen the Planning Act, so as to improve protection and management of coastal areas. The new Planning Act, adopted in 1994 [MEE (1994*b*)], states that one of its purposes is to secure that the open coasts shall remain important nature and landscape resources. The key provisions of this Act stipulate that regional and local

authorities shall take the following principles into account in their regional and local plans, affecting a 3 km-wide coastal strip:

- the designation of new urban zones, or construction in rural zones, will only be allowed when there are specific arguments related to function or planning that require their proximity to the coast;
- new summer cottage areas may not be designated in regional or municipal plans (i.e. new construction of summer cottages can only take place in locations previously zoned for the construction of summer cottages);
- construction for leisure and tourism purposes has to be located in accordance with comprehensive strategic tourism plans, and only connected to (or located behind) existing towns or leisure areas. Structures may not be taller than 8.5 m without special permission;
- public access to the coast shall be secured and improved, especially in built-up areas, where public access is currently often blocked by private property.

5.2.4 Finland

Finland combines an abundance of shorelines with a small population. From an international perspective, all of Finland could be considered as a sparsely populated forestry area [FME (1995*b*)]. Densely-built villages are not typical in Finland, and even cities can seem like built-up rural districts to outsiders. As a consequence, "land-use planning" in coastal zones is not a strong tradition in Finland. Even though shore planning provisions *were* included in the Building Act of 1968, landowners retain the right to build in coastal areas, and a strong tradition of public access has dominated the development process. Land-use plans have not yet been developed nation-wide, and only about ten per cent of (about 400,000) new holiday homes have been constructed in areas covered by shore planning provisions [FME (1995*a*)].

Although the traditional view of Finland's coasts as "empty" may still be valid for the north, where holiday homes provide the side-benefit of contributing to the economic viability of rural communities, the coastline in the southern part of the country has been rapidly developed in the last two decades. Here, easy access to shorelines is quickly disappearing [FME (1995*b)*]. This has necessitated the implementation of new planning procedures to prevent further degradation of these coastal resources. Master shore plans have been developed for about 100 areas in recent years, with 14 plans having been actually approved by 1995 [FME (1995*a*)]. The objective of the Ministry of the Environment is to have 80 per cent of all new construction sites covered by regional or master plans by the year 2000. At that time, master plans should be prepared for about half of Finland's shorelines. In 1996, a new Nature Conservation Act is being debated in Parliament. If passed, this Act will require compulsory land-use planning for a 100-200 meter wide coastal strip.

In Finland as elsewhere in the OECD, the use of economic instruments for environmental management has been limited, compared with the use of "command and control" measures. However, economic instruments *are* being used to some extent [FME (1995*a*)]. For example, Finland has had a carbon dioxide tax since 1990. It has also introduced a water protection charge, a waste oil charge, an oil pollution charge, an environment-based graded fuel tax, and deposits on soft drink and alcoholic beverage packages. The success of these economic instruments has varied [FME (1995*a*)]. For example, a tax on phosphorous and nitrogen content of fertilisers had to be abolished in 1994. Finland expects to soon introduce a compensation system for environmental damages, and its long-term objective is to create a fund for this compensation. Research is also expected to be launched soon into

concerning fiscal charges for the use of natural resources, but the further implementation of economic instruments will probably be taken up through international co-operation at the EU or OECD levels, as well as regionally, around the Baltic Sea.

5.2.5 Greece

Greece is the Mediterranean country with the most extensive coastline, with about 33 per cent of its population being located in coastal municipalities. Domestic as well as international tourism, together with sprawling urban development along the coastline, has led to increasing congestion and environmental deterioration in specific parts of the country, although the overall condition of Greek coasts is still relatively good [Coccossis and Mexa (1996)].

There is no specific legislation in Greece for coastal zone management, although various elements can be found in general spatial or sectoral policies, and in the general provisions of the Environmental Law. The broad guidelines of the latter, however, have not been developed into operational mechanisms for implementation, or explicitly specified as rules with a binding character. A part of land development control policies, or zoning regulations, have either never been implemented at all, or have become inactive early in the implementation stage [Coccossis and Mexa (1996)].

In order to overcome the above-noted obstacles, the Ministry of the Environment, Physical Planning and Public Works has established a high-level National Committee for the Management of Coastal Areas and Islands. This initiative is intended to lead to the elaboration of a strategy for the sustainable development of the coastal zone, and to the development of an action programme. The new Coastal Zone Management Policy will include [Coccossis and Mexa (1996)]:

- definition of goals and objectives;
- delineation of national heritage and nature protection areas;
- identification of a coastal zone, in which development of human functions will be balanced with preservation of ecosystems, including areas where ecosystem rehabilitation is necessary;
- zoning of desirable and permitted uses and safe-guarding of public access;
- definition of an approval process, which is foreseen to be a refinement of existing EIA procedures.

5.2.6 Netherlands

In the Netherlands, the management of the coastal zone has traditionally been dominated by the fight against the intrusion of the sea. The responsibility for coastal management has therefore developed as a national-level task (aimed at reducing the risk of flooding) for the Ministry of Transport, Public Works and Water Management. The guiding principle has long been that all coastal erosion, weak sections in dikes, etc., *have to be* resisted. The focus of coastal management has almost exclusively, therefore, been on engineering and financial considerations.

The Netherlands Coastal Defence Policy (adopted in 1990) initiated a change in thinking by adopting “dynamic maintenance of a reference coastline” as a guiding principle [RWS (1995)]. This meant that, in areas where there are still wide dune areas, coastal erosion would not necessarily be stopped altogether, but the coastline would be permitted to “breathe” (through erosion and accretion) within the limits defined by the reference coastline. Sand suppletion, pumped to shore from seabeds deeper than 20 m, has been adopted as the only structural — dynamic — solution to prevent or reduce

coastal erosion. In the period 1991-1994, an average 7 million m^3 annually has been moved to the beach in this manner, at a cost 60 million guilders per year [Ruig (1995)].

A new coastal policy was adopted in 1996 [Ruig (1995); RWS (1995) and (1996)]. The stated objectives of the new Policy are to broaden coastal zone management objectives. Rather than focusing only on coastal defence, it will include an integrated coastal zone management objective, in which the perspective of multiple use resource management will have a role to play.

At the same time, sectoral policies related to coastal *waters* (as opposed to the coastal *zone*) for the North Sea are co-ordinated — or "harmonised" — by the Interdepartmental Committee for North Sea Affairs (ICONA). At the regional and local levels, there is also considerable attention being paid to more integrated coastal zone planning and management, with the increased participation of national level Ministries in the process. Integrated policies have been developed for a number of areas, e.g. the Western Scheldt, the Eastern Scheldt, the Grevelingen and the Haringvliet - Hollandsch Diep [see, for example, Ridgley and Rijsberman (1991)]. However, the coastal zone management plans for these estuaries do not have a statutory basis, but are based on voluntary agreements between the national sector agencies, the provinces, the local authorities and specialised agencies, such as the Water Boards.

It is envisaged that the new, more integrated, coastal policies now emerging in the Netherlands will have to be worked out and implemented at the *provincial* level, probably through the existing Provincial Co-ordination Committees for Coastal Defence (POK). The mandate of the POKs will then change from coastal *defence* to coastal zone *management*.

5.2.7 New Zealand

The purpose of the 1991 Resource Management Act of New Zealand is to promote the sustainable management of natural and physical resources (excluding minerals, defined to include sand). The Act refers to a number of matters of national importance that all persons exercising functions and powers under the Act are required to recognise in their activities. The first of these is "the preservation of the natural character of the coastal environment ... and the protection of [it] from inappropriate subdivision, use and development". The Act also requires that there shall be at all times at least one New Zealand Coastal Policy Statement (NZCPS) [Nugent and Solomon (1994)]. The first NZCPS was issued in 1994 [DOC (1994)].

The NZCPS lists a series of policies which generally take the form of provisions to be made, factors to be taken into account, considerations to be made, etc., in regional and district spatial plans related to the coastal environment. The definition of "coastal environment" in the NZCPS is a bit different from that used in other national policy documents. Most CZM policies appear to rely on the definition of a coastal strip of a fixed width (e.g. 100-300 m wide; 3 km in the case of Denmark). In the NZCPS, however, the coastal environment is defined to depend on local physical characteristics (e.g. when there are hills behind the coast, then the coastal environment will generally extend to the dominant ridge from which the coast can be seen). Not included in the Policy Statement are issues covered by Acts other than the Resource Management Act, in particular fisheries issues and marine reserves [DOC (1995)]. The Policy Statement also contains a schedule of Restricted Coastal Activities (RCAs). The RCAs define the activities which the Minister of Conservation deems will have significant or irreversible adverse effects on the coastal marine area [Nugent and Solomon (1994)]. The clauses in the schedule create three categories of control [Nugent and Solomon (1994)]:

- activities of *minimum* scale, about which the schedule is silent;
- activities with *significant* effects, but for which decision-making is left in the hands of the *regional* councils, if the regional coastal plans provide for them in a certain manner; and
- activities with *significant* effects, of a magnitude or scale over which the *national* Minister wishes to retain decision-making power, classified as "Restricted Coastal Activities".

While the NZCPS largely focuses on preventing undesirable developments in the coastal zone, there are also currently ICZM proposals in New Zealand which would allow the regional councils to collect coastal rentals for all coastal resource uses, at their full social costs. A special feature of the NZCPS is its emphasis on safeguarding Maori traditional coastal values and practices. The Maori assign spiritual and cultural values to certain locations and to landscape elements that cannot be easily identified by outsiders. The NZCPS has numerous provisions to integrate these values into the ICZM planning system.

5.2.8 Norway

The Oslofjord Region is the part of Norway with the greatest concentration of economic activity and settlement, even though the fjord and its coastal zone comprise the most intensively-used area of open-air recreation in the country, in addition to containing important natural and cultural values worthy of preservation [Ministry of Environment (1993)]. In spite of a "set-back" policy that forbids building within 100 metres from the shoreline (in effect since the 1950s), extensive building has recently taken place in this zone. The purpose of the National Policy Guidelines that were laid down by Royal Decree in 1993 was to underline the need to weigh development objectives against the need for strong resource planning in the Oslofjord Region [Ministry of Environment (1993)]. The Guidelines derive their authority from the (1985) Planning and Building Act.

The essence of the Guidelines is that municipalities and national sector authorities are now expected to consider the national objectives laid down in the Guidelines when considering individual development proposals in connection with their administration of the Planning and Building Act.

The primary objective defined in the National Policy Guidelines is that valuable elements of the natural environment and cultural heritage, as well as recreation values, shall be managed as resources of national importance, to the benefit of current and future populations. Subsidiary conservation objectives are also formulated concerning the natural resource base, historic monuments and sites, and recreation areas. A subsidiary objective for land-use patterns is also included, stating that further building should be concentrated, as far as possible, in existing urban areas.

In 1995, the Ministry for Environment carried out a review of the application of the National Policy Guidelines in the five counties in the Oslofjord region. It was found at that time that there was a large variation in the application of the Guidelines in county and local planning [Ministry of Environment (1995)]. In practice, the attention of the Ministry and the counties appears to be focused mainly on preventing building in the coastal zone. The conclusion of the review was that there appears to be agreement on the need to occasionally prohibit new building in the coastal zone, but that the general policies on the expansion of existing buildings, or on the granting of exemptions, still vary considerably.

5.2.9 United Kingdom

The UK Government believes that a sectoral approach is the most effective basis for coastal management, and has therefore taken a wide range of initiatives in various sectors. These include zoning, flood and coastal defence works, marine dredging, shipping, fisheries, water quality, habitat protection, leisure, and amenity measures. In parallel, it has also acted to improve co-ordination and dialogues in the coastal zone, as well as to promote an integrated approach to resolving competing demands.

Other initiatives include the setting up of an inter-departmental group on coastal policy; the creation of Coastal Forums for England, Wales, and Northern Ireland (one has also been proposed for Scotland); the publication of a keynote digest Policy Guidelines for the Coast. It has also encouraged the preparation of non-statutory coastal management plans at the local level for estuaries, and where appropriate, for short stretches of the coast itself — enabling local authorities and other interested parties to liaise closely with each other in the resolution of local problems.

The Government's strategic aim is to promote the sustainable use of the coast. To help achieve this goal, it stresses the responsibility of local authorities and other coastal bodies, agencies and interest groups to work together on a voluntary basis. Only in the case of marine sites, designated as Special Areas of Conservation (SACs) or Special Protection Areas (SPCs), does the Government make statutory provision to require the relevant bodies to work together. In the UK, the process of implementing the EU Habitats Directive, through regulations approved in 1994, has now been initiated (described in DOE *et al*. [1995]).

English Nature — the statutory advisor to the Government on nature conservation in England — launched its "Campaign for a Living Coast" in 1992. This campaign includes a strategy for the sustainable management of estuaries (English Nature, 1993). It outlines a process for conflict resolution and decision-making, as well as the means by which local communities can become involved in preparing and implementing effective (and agreed) policies for their region. Both the strategy itself, and the resulting management plans, have been the outcome of extensive consultations with interested bodies and organisations. This reflects the importance that the Government and its agencies attach to promoting a broad and balanced approach to coastal issues — an approach that seeks to balance the needs of economic and social interests (commerce, industry, sport, leisure and recreation, etc.) with those of the coastal zone itself. In Scotland, the "Firths Initiative" has also encouraged the preparation of similar plans covering key estuaries.

5.2.10 United States

The Coastal Zone Management Act of 1972 is primarily intended to change how federal, state and local agencies and officials manage coastal resources, and to help allocate these resources among competing users [NSC (1993)]. The Act encourages States to produce and enforce their own coastal zone management programme. States must submit their programmes to the federal government for approval (National Oceans and Atmosphere Administration (NOAA) of the Department of Commerce). Once approved, the federal government is responsible for ensuring that federal activities conform to the state programme. The federal government provides financial assistance to states with approved programmes and can also withhold federal funds from states which do not meet federal standards. In 1990, the national ICZM programme was strengthened and modernised [NOAA (1992)]. This established the Coastal Non-point Pollution Control Program (CNCP) and a new Coastal Zone Enhancement Grants Program, to encourage states to address several issues of national importance:

- protection, restoration or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands;
- preventing or significantly reducing threats to life and destruction of property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing effects of potential sea level rise;
- attaining increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological or cultural values;
- reducing marine debris entering the Nation's coastal and ocean environment, by managing uses and activities that contribute to the entry of such debris;
- development and adoption of procedures to assess, consider and control cumulative and secondary impacts of coastal growth and development, including the collective effects of individual activities on coastal resources, such as coastal wetlands and fishery resources;
- preparing and implementing special area management plans for important coastal areas;
- planning for the use of ocean resources; and
- adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities, as well as energy-related activities and Government activities which may be of greater than local significance.

The second major US ICZM-related programme is the National Estuary Program, established in 1987 as part of the Clean water Act Amendments [EPA (1992*b*)]. This Program identifies nationally-significant estuaries that are threatened by pollution, development, or overuse. The Program's final goal is to develop Comprehensive Conservation and Management Plans (CCMPs). There were 17 estuaries covered by this Program in 1992, increasing to 28 estuaries by 1995. The CCMPs are developed through Management Conferences that include representatives of all interested parties, including citizen and user groups. A major responsibility of the Management Conference is to build and sustain public support [EPA (1992*b*)]. A third programme is the National Marine Sanctuaries Program, legislated by Congress in 1972. This Act authorises the Secretary of Commerce, National Oceanic and Atmospheric Administration (NOAA) to designate discrete areas as national marine sanctuaries, in order to promote comprehensive management of their special ecological, historical, research, educational, recreational, or aesthetic resources. Thirteen national marine sanctuaries have been designated, ranging from less than one to over 5,300 square miles in each area.

In a further move towards community involvement in the process of coastal zone management and to better co-ordinate CZM policies across sectors, Coastal America was established in 1992. Coastal America is a partnership for action to protect, restore and maintain the nation's coastal living resources [Coastal America (1995)]. Twelve federal organisations are partners in this Program, working together with over 300 non-federal organisations to address environmental problems along the coast. Regional implementation teams identify and develop project ideas and forward these to a national team. The national team forwards its Recommendations to a Policy Committee, made up of sub-cabinet representatives of the federal partners. The Policy Committee directs the efforts of the partners towards implementation of the project ideas. In the period 1992-1995, regional teams initiated 150 restoration and protection projects, focusing on wetland restoration, the re-establishment of anadromous fish in streams, and habitat protection.

6. Conclusions

6.1 Conclusions related to the OECD Recommendation

When asked if they were familiar with the OECD ICZM Recommendation, all responding countries replied in the affirmative, and most indicated that, in their opinion, the Recommendation has had *some* influence on coastal zone management processes in their country. However, the examples cited of the Recommendation's overall influence have tended to confirm that the Recommendation has largely supported the *general* direction of ICZM policy development, rather than being very effective (yet) in generating *specific* new ICZM initiatives.

On the other hand, given the relatively recent adoption of these initiatives, it is perhaps still too early to be able to conclude very much about their longer-term effectiveness. It must also be assumed *a priori* that countries have adopted these new measures because they believe that they will improve their ICZM processes over time. We should therefore remain cautiously optimistic that more direct improvements *will* eventually occur.

I. Policy objectives and integration

Coastal zone issues, as well as the institutional arrangements designed to address them, differ widely across Member countries. This implies that countries will tend to approach the harmonisation and integration of coastal policies from their unique national perspectives, which makes it difficult to generalise across countries about real progress towards ICZM.

With this caveat in mind, however, it can be concluded that the large majority of OECD countries have taken initiatives that relate either to new coastal zone policies, or to new legislation. This is interpreted as an indication that countries *have* recognised the need for improved, integrated policies related to the coastal zone, and *are* thereby actively working toward the implementation of the OECD Recommendation. Unfortunately, most of these "top down" initiatives have yet to move beyond the *planning* stage of the ICZM process and into the *implementation* stage.

There is also some evidence that the principles of ICZM are being slowly developed from the "bottom up", especially in the context of individual, pilot-scale, initiatives in local areas (in Canada, for example). Even though these projects do not yet form part of national (or even regional sub-national) ICZM frameworks, their emergence is encouraging, inasmuch as they attempt to apply ICZM principles at the local level.

There is a clear need to develop a better equilibrium between the "top down" and "bottom up" approaches to designing ICZM activities. OECD countries are already actively experimenting with this mixture, with some success. However, much remains to be done, especially in emphasising the need for more *integrated* CZM (as opposed more *single-purpose* CZM activities).

II. Policy instruments

Of the several policy instruments suggested in the OECD Recommendation for greater use (either individually or in combination), only the Environmental Impact Assessment and associated public participation processes appear to have been widely implemented at the moment. Even so, there appears to be considerable room for improvement of OECD EIA procedures, as well as in their specific applicability to CZM issues. On the other hand, the other recommended policy instruments

suggested in the OECD Recommendation (environmental indicators, the Polluter-Pays-Principle, resource-pricing and legally-enforced ICZM objectives) have been implemented only partially, and generally only by a minority of Member countries. Economic instruments and resource-pricing, in particular, have not been widely applied, in part because both the tools themselves and the scientific information on which they could be based are still poorly-developed.

These are, however, a few signs of recent progress in some of these areas. For example, most countries actively monitor a variety of environmental quality parameters in the coastal zone. These environmental indicators tend to be physical or biological in nature (e.g. related to bathing water quality), rather than being oriented towards management processes. There is also evidence that countries are now putting more effort into the development of indicators that would, for example, allow an assessment of whether current or planned uses of the coastal zone are actually sustainable (e.g. Netherlands).

Progress is also being reported in the development of other policy instruments. For example, some countries have formally adopted the User Pays Principle, and report that proposals to charge for use of coastal resources at full social costs are either being developed or are under consideration. Many countries also emphasise the importance of involving communities in the planning and management of the coastal zone. A "partnership" approach is increasingly being used, perhaps involving the various levels of government with representatives of local interest groups; perhaps involving a sharing of legislative authority among different levels within the government itself.

III. Fisheries

Several countries already participate in international efforts aimed at the sustainable management and conservation of *fish resources.* For example, the Common Fisheries Policy of the European Union has taken several recent initiatives in this direction. Most countries also have national policies focusing on fish stock management. However, it does not appear that the combination of these national and international policies have yet been very effective, especially with regard to the management of international *migratory* stocks. In fact, over-harvesting problems appear to have actually *increased* regionally, nationally and internationally for these stocks. On the other hand, there are some recent *successes* being reported concerning the management of certain *sedentary* fish stocks.

IV. Tourism

Only five of the nineteen responding countries have designated a co-ordination authority to ensure a balance between tourism development and the capacity of coastal waters at the national level. However, a number of Member countries *do* address the need for such co-ordination, but only at the *local* level — the level which is often viewed as the appropriate one for addressing tourism issues.

V. International waters

Most countries also participate in international agreements related to the coastal zone, but few of these agreements include the preparation, implementation and monitoring of an integrated action plan for coastal zone development and management (as opposed to pollution control). This deficiency is being recognised, however, and recent initiatives such as the Global Programme of Action for the Protection of the Marine Environment From Land-based Activities (which involves the "preparation, implementation and monitoring of an integrated action plan for coastal zone development and management") may offer a useful way of promoting more integrated approaches to coastal zone management in the future.

6.2 General conclusions

There appears to have been some progress in recent years on: (i) reducing "point" sources of pollution; (ii) applying classical land-use planning techniques to the coastal zone, especially in the delineation of protected areas and reserves; and (iii) providing public access to beaches. There have also been several new coastal defence and/or structural works initiated since the OECD Recommendation was adopted. Progress is also being reported at both the international level (e.g. implementation of Agenda 21; expansion of the pan-European view of coastal zone problems), as well as in individual OECD Member countries (see Section 5).

On the other hand, it is difficult to avoid the conclusion that much of this progress toward better ICZM has occurred at the *planning* level, rather than at the *implementation* one. There has also been a noticeable lack of progress on resolving both off-shore and "non-point source" management problems. These deficiencies likely reflect priority-setting considerations (funding priority is usually given to point-source problems nearer to population centres, where problems are the most visible. More fundamentally, however, these deficiencies probably also reflect problems in the international monitoring and enforcement of coastal zone norms/standards, as well as problems of institutional overlap. They probably reflect as well the absence of high quality data/information related to the coastal zone itself.

All countries recognise that effective coastal management will ultimately require a partnership approach — one that is able to work across both sectoral and institutional boundaries. This is a major reason why countries are increasingly emphasising "softer" approaches to ICZM (e.g. public participation; community-based planning; *a priori* environmental impact assessments, etc.), to complement the more traditional "command and control" ones. The fact that coastal issues tend to overlap national jurisdictions is also generating new pressures for co-ordinating international responses to coastal zone management problems.

Overall, it is concluded that there is still considerable room for further improvement of coastal zone management in all OECD countries. The process of defining and implementing integrated coastal zone policies and programmes has only recently begun, and some countries are clearly further along this path than others. On the other hand, progress *is* being made and would be further enhanced if Member countries would:

- pursue the current trends towards a more community-based approach to coastal zone management, and toward increased public participation in ICZM planning *and* decision-making;
- place more emphasis on *integrated* (as opposed to *single-purpose*) coastal zone management programmes and activities;
- give more attention to the development and monitoring of ICZM indicators that support enforcement and implementation of ICZM policies;
- focus more attention on the resolution of *international* ICZM problems, using a regional approach. In this respect, the several "regional seas" initiatives which already exist may provide useful examples;
- re-examine the effectiveness of their CZM policies after sufficient time has passed to permit such an assessment.

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ANNEX 1: RECOMMENDATION OF THE COUNCIL ON ICZM

(adopted by the Council at its 787th Session on 23rd July 1992)

THE COUNCIL,

Having regard to Article 5b) of the Convention on the Organisation for Economic Co-operation and Development of 14th December 1960;

Having regard to the Recommendation of the Council on Principles concerning Coastal Management of 12th October 1976 [C(76)161(Final)];

Having regard to the Recommendation of the Council on Environment and Tourism of 8th May 1979 [C(79)115];

Having regard to the Recommendation of the Council on the Assessment of Projects with Significant Impact on the Environment of 8th May 1979 [C(79)116];

Having regard to the Recommendation of the Council on Water Resource Management Policies: Integration, Demand Management, and Groundwater Protection of 31st March 1989 [C(89)12(Final)];

Having regard to the Recommendation of the Council on the Use of Economic Instruments in Environmental Policy of 31st January 1991 [C(90)177/FINAL];

Recognising the significant social, economic and environmental value of coastal zones and their resources, as well as their value to indigenous peoples, and the pressure exerted by conflicting demands on coastal zones and their natural resources, leading to environmental and ecosystem deterioration;

Recognising the potential impact on coastal zones and the oceans of sea level rise associated with climate change;

Considering that the OECD Environment Committee at Ministerial Level has affirmed the significance of international co-operation in environmental policy-making and agreed that a key to sustainable development lies in the full integration of economic and environmental policies and that, *inter alia*, economic instruments be used in conjunction with regulations for achieving policy integration;

Considering that Environment Ministers have identified coastal zones and the oceans as areas where improved policy integration through integrated resource management strategies and comprehensive land-use planning is required;

Considering that Environment Ministers reaffirmed that the precautionary principle will guide their approach when confronted by threats of serious irreversible environmental damage, i.e. that lack of full scientific certainty will not be used as a reason for postponing measures to prevent environmental degradation;

Having regard to the report entitled "Coastal Zone Management: Integrated Policies", which provides guidance to Member countries for implementing this Recommendation;

I. RECOMMENDS that, to help achieve the goals of ecologically sustainable development and integrated resource management, strategic planning and integrated management of coastal zones should be developed, and implemented by Member countries, through:

- Defining policy objectives specific for the coasts and their resources to provide guidance to and enhance co-ordination of national, regional and local government strategies/plans for coastal zones;
- Strengthening the integration and harmonisation of sectoral policies affecting coastal zone management and resource usage.

This can be achieved through more effective utilisation or extension of existing planning and management structures and by designating an authority to co-ordinate action. The necessary resources for this co-ordination to be provided by all concerned levels of government;

II. RECOMMENDS that, in view of the diverse and often conflicting uses of and pressures on coastal zone resources, Member countries should employ policy instruments, individually or in combination, in integrated coastal zone planning and management, including:

- Collection and updating of relevant information, and development of coastal environment indicators to guide planning and monitoring of coastal zone activities and processes;
- Establishment of environmental objectives for: land-use planning and zoning, coastal waters planning (including inland waters, semi-enclosed seas, estuaries), conservation requirements, ecosystem protection and restoration, discharge limits, water quality for receiving waters and waters flowing into the coastal zone, and control and reduction of inputs from polluting and hazardous substances;
- Establishment and maintenance of monitoring and enforcement procedures for environmental objectives and targets;
- Environmental assessment incorporating economic and social criteria;
- Public education and participation in decision-making at an early stage of policy formulation and project assessment, and adoption of wider public participation procedures;
- Application of regulations and economic instruments within the framework of the Polluter-Pays Principle, and pricing coastal zone resources to reflect social costs of use and depletion;
- Where appropriate, enactment of national legislation to enforce coastal zone management objectives;

III. RECOMMENDS that particular attention should be given to achieving sustainable management and conservation of fishing resources at the local, national and international levels, and that co-ordination of all relevant authorities should be ensured;

IV. RECOMMENDS that, in view of the economic and environmental significance of tourism and its associated infrastructure, a designated co-ordination authority should ensure that a proper balance is found between tourism development and the carrying capacity of the coastal zone;

V. RECOMMENDS that international co-operation for the management of shared or common coastal areas should be enhanced by existing or extended international coastal zone management bodies preparing, implementing and monitoring an integrated action plan that is consistent with other relevant coastal zone management initiatives;

VI. RECOMMENDS that the Environment Policy Committee and other relevant committees review progress in the establishment of mechanisms for integrated coastal zone management within two years of enactment of this Recommendation, and that the Environment Policy Committee and other relevant committees further undertake a review of the effectiveness of actions taken in accordance with this Recommendation within five years of its enactment.

ANNEX 2: SUMMARY OF COUNTRY RESPONSES TO THE QUESTIONNAIRE

1. Which level of government, and which government organisation, has the primary responsibility for integrated coastal zone management (ICZM) in your country?
2. This questionnaire has been completed by representatives of which organisation? What is the role or mandate of this organisation in ICZM?

Table 1. Responsibility for CZM & Respondent

Country	Q1	Q2
Australia	Sub-national government (state, provincial, local).	Dept. for Environment, Sport and Territories (DEST); lead agency responsible for co-ordinating the Commonwealth Coastal Policy.
Belgium	National and sub-national; Ministry for Social Affairs, Public Health and Environment for the maritime part; Flemish Community for the terrestrial part.	UGCM Mer du Nord (national level state organisation).
Canada	Principal responsibility lies with Fisheries and Oceans Canada, but legislative mandates are federal, provincial and municipal.	Marine Environment Division, Hazardous Waste Section, Environment Canada, with subsequent input from Fisheries and Oceans Canada.
Denmark	National and sub-national; Ministry of Environment and Energy, Spatial Planning Dept., with counties and municipalities.	Min. of Environment and Energy, Spatial Planning Dept. The mandate does not yet include the completely integrated management of land and sea coastal resources.
Finland	National and sub-national.	Ministry of Environment.
France	Both national (Ministry of Equipment and Environment) and sub-national (Coastal Zone and Lakeshore Agency). A network of local science-based interest groups (GIS REA) is also actively involved.	Ministry of Environment.

Country	Q1	Q2
Germany	Both national (e.g. Minister of Transport; Minister of Environment) and sub-national (Federal State Ministries or Senates for Physical Planning).	Federal Agency for Nature Conservation (responsible for national and international aspects of marine and coastal nature conservation).
Greece	National (Ministry of Environment, Planning and Public Works).	MEPPW.
Ireland	National (three Departments shared).	Dept. of Environment.
Japan	n.a.	n.a.
Netherlands	National; Ministry of Transport, Public Works and Water Management.	National Institute for Coastal and Marine Management.
New Zealand	National and sub-national.	Dept. of Conservation.
Norway	National and sub-national; Ministry for Environment; counties and municipalities.	Ministry for Environment.
Portugal	Three agencies share responsibility: the Institutes for Water Management and for Nature Conservation (Ministry of the environment); and the Directorate General for Harbour, Navigation, and Maritime Transport (Ministry of Planning and Equipment).	Institute for Nature Conservation (the Agency responsible for CZM in Coastal Protected Areas — about 35 per cent of the coastline).
Spain	National and sub-national; Ministry of Environment.	Ministry of Environment.
Sweden	National; National Board of Housing, Building and Planning & Swedish EPA.	Swedish EPA; Department of Research.
Turkey	National and sub-national.	Ministry for Environment (co-ordinating agency).
UK	National; Department of Environment.	Joint Nature Conservation Committee on behalf of DoE.
USA	National and sub-national; NOAA, EPA and state organisations.	US-EPA.

3a. Are you, or is your organisation familiar with the OECD Council Recommendation on Integrated Coastal Zone Management (ICZM) and the underlying report?

3b. If yes, has the Recommendation influenced coastal zone management in your country?

Table 2. Influence of OECD Recommendation

Country	Q3a	Q3b
Australia	Yes.	Yes; somewhat.
Belgium	Yes.	No.
Canada	Yes.	Yes; somewhat.
Denmark	Yes.	Yes; somewhat.
Finland	Yes.	No, negligible.
France	Yes.	Yes; somewhat.
Germany	Yes.	No; negligible.
Greece	Yes.	Yes; somewhat.
Ireland	Yes.	Yes; somewhat.
Japan	Yes.	No; negligible.
Netherlands	Yes.	Yes; somewhat.
New Zealand	Yes.	No.
Norway	Yes.	No; negligible.
Portugal	Yes.	Yes; somewhat; assisted in the development of new legislation.
Spain	Yes.	No; negligible.
Sweden	Yes.	No; negligible.
Turkey	Yes.	Yes; somewhat; development of new legislation.
UK	Yes.	Yes; somewhat; assisted in development of new policy.
USA	Yes	Yes; somewhat; supports direction of new policy.

4a. Is your country actively involved in ICZM-related work of other international organisations, such as the UNEP Regional Seas Programme or the IPCC CZM Sub-group?

4b. Has the work of these other international organisations had significant influence on coastal zone management in your country?

Table 3. International involvement

Country	Q4a	Q4b
Australia	Yes.	Yes; somewhat. Increased impetus through calls for action; setting frameworks and priorities; and promoting research.
Belgium	No.	No.
Canada	Yes.	Yes; somewhat.
Denmark	Yes.	Yes; somewhat.
Finland	Yes.	Yes; significant (Helsinki Convention on the Baltic Sea).
France	Yes; UNESCO/IOC and various Regional Seas Programmes.	No; negligible.
Germany	Yes.	No; negligible.
Greece	Yes.	Yes; somewhat.
Ireland	No.	Yes; somewhat.
Japan	Yes.	Yes; significant.
Netherlands	Yes.	Yes; somewhat. Helped to broaden the scope of the national policy for coastal defence.
New Zealand	Yes.	Yes; somewhat, increased proactive policy development.
Norway	Yes.	No; not yet.
Portugal	No.	No; not yet.
Spain	No.	Yes; somewhat.
Sweden	No.	No; negligible.
Turkey	Yes.	--
UK	Yes.	Yes; somewhat.
USA	Yes.	Yes; modest impact.

5. Have there been major initiatives in your country that relate to the coastal zone in the last five years (e.g., a national coastal zone management that was adopted by parliament; laws that were enacted that have a major effect on the coastal zone; institutions that have been created or restructured to better manage the coastal zone, etc.)?
If Yes, please specify.

Table 4. Major new CZM initiatives in last 3 years

Country	Q5	Specify
Australia	Yes.	New national policy and co-operative program, released in July 1995: Living on the Coast.
Belgium	No.	--
Canada	Proposed.	New Canada Oceans Act will give statutory effect to a comprehensive oceans management regime.
Denmark	Yes.	New Law for the Coastal Zone of 1994.
Finland	Yes.	New Nature Conservation Act, before Parliament in 1996, that will require compulsory land-use planning for a 100-200 m coastal strip.
France	Yes.	Water Law (1992) includes provisions for the management and improvement of coastal basins and their shorelines. The Law on the Prevention of Major Natural Disasters also includes risk prevention measures for the coastal zone.
Germany	No.	--
Greece	Yes.	Establishment of a National Commission for sustainable development of coastal areas and islands.
Ireland	Yes.	Study to prepare national coastal zone management policy.
Japan	No.	--
Netherlands	Yes.	New national policy released in 1996.
New Zealand	Yes.	Enactment of Resource Management Act.
Norway	Yes.	National Policy Guidelines for Planning in Coastal and Marine Areas in the Oslofjord Area.
Portugal	Yes.	Laws covering land-use planning in the coastal zone; NATURA 2000 proposed sites of special interest (including all major estuaries and coastal lagoons, as well as about 65 per cent of the continental coastline).
Spain	No.	--
Sweden	No.	--
Turkey	Yes.	Revision of the Law for the Coastal Zone in March 1994.
UK	Yes.	Significant increase in integrating coastal management across the UK.
USA	Yes.	Reorientation towards community based management. Coastal America established in 1992. National Estuary Program expanded from 17 before 1992 to 28 estuaries in 1995.

6. Have policy objectives specific for the coasts and their resources been identified and adopted formally?
7. Has an authority been designated to co-ordinate actions concerning ICZM across national, regional and local government agencies?

Table 5. National CZM objectives & Co-ordinating mechanisms

Country	Q6	Q7
Australia	Yes.	Yes; Commonwealth Coastal Co-ordinating Committee and equivalent at state level.
Belgium	Yes; Ramsar Convention and EU Habitats/Birds Directives.	Yes; Working Group for Interministerial Co-ordination.
Canada	Yes; identified, but not formally adopted.	Yes; Department of Fisheries and Oceans. Other administrative arrangements include the Canada-USA Gulf of Maine Council on the Marine Environment and the BC/Washington State Agreement.
Denmark	Yes.	Existing (sectoral) organisations. Co-ordination provided by the Ministry of Environment and Energy.
Finland	No.	No.
France	Yes; Shoreline Law (1986) and subsequent implementation provisions (e.g. plan for the valorisation of the sea -- SMVM); also Countryside Law of 1992.	Yes; the Directorate for Architecture and Urban Planning in the Ministry of Environment.
Germany	Yes; most objectives at the federal level are based on the national application of international agreements.	No.
Greece	Currently under development.	Yes.
Ireland	Currently under development.	Ad-hoc arrangements; formalisation expected soon.
Japan	No.	No.
Netherlands	Proposed; new, broader objectives in new policy due out in 1996.	Yes; Coastal Co-ordination Committees in each Province, in which all relevant organisations are represented (POKs) and Interdepartmental Co-ordinating Committee on North Sea Affairs (ICONA).
New Zealand	Yes, the New Zealand Coastal Policy Statement.	Yes, Department of Environment.
Norway	Yes; action programme and progress plan.	Yes.
Portugal	Yes; identified, but not formally adopted.	Yes; Institutes for Water Management and Nature Conservation; and Directorate for Harbours, Navigation, and Maritime Transport.
Spain	No.	No.
Sweden	Yes; through sectoral Acts.	--
Turkey	Yes; in Coastal Law.	No.
UK	Yes; new policy guidelines were published in November 1995.	Yes; the Interdepartmental Group on Coastal Policy, but note that this Group does *not* have executive responsibility.
USA	Re-orientation towards community-based management.	Yes; various. The Coastal States Organisation acts as a policy co-ordination/development mechanism at both the federal and state levels.

8a. Have coastal environmental indicators been developed? If yes, are these indicators being monitored on a regular basis?

8b. Is there a specific section on coastal resources or the coastal zone in a regularly published state of the environment report?

Table 6. Indicators & Monitoring

Country	Q8a	Q8b
Australia	No.	Yes; released June 1996.
Belgium	No.	No.
Canada	Some; under Mussel Watch Program. Marine Environmental Quality Guidelines also to be developed under the new Canada Oceans Act.	Yes; National State of the Environment report currently under preparation.
Denmark	Yes; for water quality and bathing water.	Yes; in Annual Environmental Indicator report.
Finland	Yes; e.g. percentage of coastline developed.	Yes.
France	Yes; currently being developed at the national level (IFREMER, IFEN). France also participates at the international (Blue Plan) and European (EEA) levels. Regular monitoring is done for some marine contaminants (IFREMER, DDASS, CQET, IPSN, Navy, etc.	Yes; for the Mediterranean coast.
Germany	Yes; bathing water quality. Monitoring is performed by the Lande.	Yes; the "Daten zur Umwelt" biannual report contains qualitative date on coastal waters.
Greece	Yes; water quality-related.	Yes.
Ireland	Partial; for water quality and bathing water.	Yes; State of the Environment Report.
Japan	Yes; for coastlines, tidal flats, seaweed beds, coral reefs.	No.
Netherlands	Yes; base coastline, water quality criteria; functional areas in dunes; bathing water quality standards; shellfish water quality standards; AMOEBA indicator.	Yes; regularly.
New Zealand	Yes; water quality, coastal dynamics, ecology.	Yes; Regional Coastal Plans and New Zealand CSD report.
Norway	n.a.	n.a.
Portugal	Yes; water quality for bathing.	Yes; monitoring of coastal natural parks and reserves is regularly reported in annual SOE Reports.
Spain	No.	No.
Sweden	No specific indicators; Yes, general marine monitoring program.	Yes.
Turkey	Yes; through case studies.	No.
UK	No.	Yes.
USA	Yes; but some elements are still in the development stage.	Yes; NOAA Strategic Environmental Assessment Division.

9. Have environmental objectives been developed and adopted for the following ICZM aspects?: land-use planning and zoning, coastal waters planning, conservation requirements, ecosystem protection and restoration, discharge limits, water quality for receiving waters and for waters flowing into the coastal zone, control and reducing inputs from polluting and hazardous substances.
10. Have monitoring and enforcement procedures been established for the objectives listed in the previous question, and are these maintained?

Table 7. Sectoral objectives & Enforcement

Country	Q9	Q10
Australia	Yes.	Yes.
Belgium	Yes; for protection and rehabilitation of ecosystems.	No.
Canada	Yes.	Yes.
Denmark	Yes.	Yes; sectorally.
Finland	Yes.	Yes; sectorally.
France	Yes; often implemented by agencies operating at the sub-national level.	Yes; both in national and sectoral legislation. However, the coastal zone in still only partially covered.
Germany	Yes; through various Acts, at both the Lande and national levels.	Yes; sectorally at both the Lande and Federal Government levels.
Greece	Yes.	Yes.
Ireland	Yes.	Yes.
Japan	n.a.	n.a.
Netherlands	Yes.	Yes.
Ireland	Yes.	Yes.
Norway	Yes.	Yes.
Portugal	Yes; through various Acts, but not all listed elements of ICZM are yet covered.	Yes; sectorally.
Spain	Yes.	No.
Sweden	Yes; through various Acts.	Yes.
Turkey	Yes; in legislation.	Yes; although implementation is weak.
UK	Yes.	Yes; sectorally.
USA	Yes; primarily at a state / local level.	Yes; primarily for discharges and water quality.

11. Have Environmental Assessment procedures, including economic and social criteria, been established that apply to the coastal zone?
12. Are public participation procedures included in the established coastal zone management policy formulation or Environmental Assessment processes?

Table 8. EIA & Public participation

Country	Q11	Q12
Australia	Yes; via legislation.	Yes; part of EIA.
Belgium	Yes.	Yes.
Canada	Yes.	Yes.
Denmark	Yes; EU procedure.	Yes; for all landward CZM planning (i.e. not seaward).
Finland	Yes.	Yes.
France	Yes; EU procedure.	No, not directly; although many new developments do require some form of public enquiry.
Germany	Yes.	Yes.
Greece	Yes.	Yes; in EIA and planning studies.
Ireland	Yes; EU procedure.	Yes; integral part of planning and development system.
Japan	Yes; for large-scale projects.	Yes.
Netherlands	Yes.	Yes.
New Zealand	Yes; specified in Resource Management Act.	Yes; in coastal activity permits as well as national coastal policy statement.
Norway	Yes.	Yes.
Portugal	Yes; EU procedure.	Yes; for EIA and for the approval of coastal land-use plans.
Spain	Partially; environmental constraints are built into the planning processes, but are not completely applied.	Partially; public participation is routinely applied in the EIA process, but not always in CZM activities themselves.
Sweden	Yes; based on the Environment Protection Act.	Yes; for all plans.
Turkey	Yes.	Yes.
UK	Yes.	Yes
USA	Yes; though not specific to the coastal zone.	Yes; in EIA and CZM policy, making process.

13. Has the Polluter-Pays-Principle been adopted as a basis for dealing with pollution in coastal zone management?
14. Are coastal zone resources being priced at levels that reflect social costs of use and depletion?

Table 9. The Polluter Pays Principle &Resource pricing

Country	Q13	Q14
Australia	Yes; in legislation enforced by EPA.	No; but User Pays Principle has been adopted.
Belgium	Depends.	No.
Canada	Yes; working towards it.	No.
Denmark	No.	No.
Finland	Partly; working towards it.	No.
France	Yes; especially regarding charges for the use of freshwater resources in agriculture, industry and households. This allows the Water Management Agencies to be self-financing.	No; economic indicators concerning environmental costs remain imprecise.
Germany	Yes; applies to specific nutrients ("Abwasser abgabengesetz").	No.
Greece	Yes.	No.
Ireland	Yes; guides environmental policy.	No.
Japan	Yes.	No.
Netherlands	Yes.	Yes; through compensation paid for dredging and gas extraction.
New Zealand	Yes.	Yes; use of coastal resources on a rental basis is proposed.
Norway	Yes.	No.
Portugal	Yes.	No; but research is on-going.
Spain	Yes.	No.
Sweden	Yes.	No; but research is on-going.
Turkey	Yes; there are plans for an environmental fund.	No.
UK	Yes.	No.
USA	Yes.	Partially; approaches are currently being developed.

15. Has national level legislation been enacted to enforce coastal zone management objectives?

Table 10. Enforcement of CZM objectives

Country	Q15
Australia	No.
Belgium	No.
Canada	Proposed Canada Oceans Act will give statutory effect to a national Oceans Management Strategy, but actual *enforcement* of that strategy is *not* envisaged.
Denmark	Yes.
Finland	No; proposal under preparation.
France	Yes; but only very partially, via the Coastal Law, which promotes an equilibrium among protection, management, and development goals.
Germany	No.
Greece	Presently under consideration.
Ireland	No.
Japan	No.
Netherlands	No.
New Zealand	Yes; Resource Management Act determines hierarchy of plans; objectives are set in a national coastal policy statement.
Norway	Yes.
Portugal	Yes; based on coastal zone land-use and management plans.
Spain	Yes; the Spanish Shore Act.
Sweden	Yes.
Turkey	Yes.
UK	No; relies on a sectoral approach.
USA	Yes; CZM Act, Clean Water Act.

16a. Has a pro-active policy been established to achieve sustainable management and conservation of fisheries resources at the international, national and regional levels, ensuring co-operation of the relevant authorities?

16b. If yes, has this policy been successful?

Table 11. Fisheries

Country	Q16a	Q16b
Australia	Yes.	Varies.
Belgium	Yes.	No.
Canada	Yes; partially.	*Regional* and *National* level policies are in place and functioning, to the extent possible, but *international* co-operation remains deficient.
Denmark	Yes; EU policy.	Yes; partly.
Finland	Yes; partly.	Yes; partly.
France	Yes; EU policy applies generally. For other resources, two types of control measure are used: (i) quotas (e.g. scallops) and licensing arrangements (e.g. scallops and crabs). Both measures involve direct agreements with local professional organisations.	Yes; partly.
Germany	Yes; EU policy.	No; efforts to improve effectiveness are needed.
Greece	Yes; EU policy	National and international co-ordination is weak.
Ireland	Yes; EU policy.	-
Japan	n.a	n.a.
Netherlands	Yes.	--
Norway	n.a.	n.a.
New Zealand	Yes.	
Portugal	Yes.	No.
Spain	No.	--
Sweden	No.	--
Turkey	No.	--
UK	Yes; includes new legislation on the environmental aspects of fisheries.	Not entirely; exploitation of most stocks remains a concern.
USA	Yes.	Varies.

17. Is a designated co-ordinating authority in place with the mandate to balance tourism development and the carrying capacity of the coastal zone?

Table 12. Tourism

Country	Q17
Australia	No.
Belgium	No.
Canada	No.
Denmark	Yes; to some extent; the Ministry assesses regional spatial plans against national objectives.
Finland	No.
France	No.
Germany	No.
Greece	Yes; *ad hoc* thresholds from MEPPW and National Tourism Organisation.
Ireland	No.
Japan	n.a.
Netherlands	Yes; provinces check municipal development plans against national planning objectives.
New Zealand	No.
Norway	No.
Portugal	Yes; the 5 Commissions for Regional Co-ordination (continental areas only), plus the Azores and Madeira Regional Governments.
Spain	No; but a central (national) planning authority is not necessarily required, even if local plans existed.
Sweden	No; but co-ordination of tourism interests is done through a set-back policy for coastal structures.
Turkey	No.
UK	Yes; British Tourist Authority, and English, Welsh, and Scottish Tourist Boards.
USA	Yes; through CZM plans at the state level.

18a. Is your country a contracting party to an international agreement that covers international co-operation for the management of shared or common coastal waters?

18b. If yes, does this international co-operation cover the preparation, implementation and monitoring of an integrated action plan that is consistent with other coastal zone management initiatives?

Table 13. Agreements on shared or common coastal waters

Country	Q18a	Q18b
Australia	Yes; Torres Strait; South Pacific.	No.
Belgium	Yes; OSPAR; North Sea.	Yes; OSPAR.
Canada	Yes; Gulf of Maine Agreement, and agreement between British Columbia and Washington State; and numerous bilateral agreements. Also, the Arctic Environmental Protection Strategy (AEPS).	Yes.
Denmark	Yes; North Sea; OSPAR; Baltic Sea; Wadden Sea.	Yes; for Wadden Sea and OSPAR.
Finland	Yes; Helsinki Convention on the Baltic Sea; OSPAR.	Yes; mainly within Programme Implementation Task Force; OSPAR.
France	Yes; OSPAR; Barcelona Convention; RAMOGE (France, Monaco, Italy).	Yes; but mainly for contamination and other water quality problems at the regional/national levels.
Germany	Yes; OSPAR; North Sea; Trilateral Agreement for the Wadden Sea; Helsinki Convention (Baltic).	Yes; Baltic Sea activities relate to the HELCOM Monitoring Programme; OSPAR.
Greece	Yes; Mediterranean Action Plan.	Yes; Mediterranean Action Plan.
Ireland	Yes; OSPAR.	Yes; OSPAR.
Japan	No.	--
Netherlands	Yes; North Sea; OSPAR; Wadden Sea.	Yes; amongst others, for OSPAR and the Wadden Sea.
New Zealand	No.	--
Norway	Yes; OSPAR.	Yes; OSPAR.
Portugal	Yes; OSPAR; London Convention; Lisbon Agreement for Preventing Major Pollution Accidents in the North-East Atlantic.	Yes; Lisbon Agreement Action Plan (CIL Plan); OSPAR.
Spain	Yes; OSPAR.	Yes; OSPAR.
Sweden	Yes; HELCOM, OSPAR, for example.	Yes; OSPAR.
Turkey	Yes; Mediterranean Action Plan; Black Sea.	Yes; Mediterranean and Black Sea Action Plans.
UK	Yes; OSPAR.	Yes; OSPAR.
USA	Yes; Wider Caribbean; South Pacific; and numerous bilateral agreements.	Yes.

Note: All references to "Wadden Sea" relate to the "Trilateral Wadden Sea Co-operation" arrangement.