



*8th Annual Conference*  
European Environmental Advisory Councils

# PROCEEDINGS

## The Coastal Zone Sustainable Development Policies in Europe

2-5 June  
Sesimbra, Portugal  
**2000**

*Hosted by the  
Portuguese National Council on the Environment  
and Sustainable Development  
(CNADS)*

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## Introductory Words

It has become the norm for the European Environmental Advisory Councils (EEAC) to publish a volume containing the outcomes and contributions made by participants in the Conferences they hold periodically. The Portuguese Council for the Environment and Sustainable Development is, therefore, following that tradition and presenting the Proceedings of the 8<sup>th</sup> Annual Conference of the EEAC.

Our Council has been co-operating, since 1998, with the other European Councils in order to contribute to the reinforcement of our common purposes and respective spheres of influence. The establishment of the desirable geo-cultural balance on a European scale – North/South, East/West – together with a growing dialogue between the Councils and the communities they belong to has also been part of that common goal.

We should underline that this is an important period for the European Union member States and other European countries, regarding environmental policies and issues. Portugal, chairing the Environment Council of the European Union at the time of the Conference, expressed the importance it attached to dialogue between Governments and Civil Societies. This is particularly relevant when we consider the need for implementing effective environmental measures and regulations, aiming at sustainable development in EU member States and in candidate countries. It is also desirable to have common or, at least, convergent approaches to the definition of guidelines for the 6<sup>th</sup> European Action Programme for the Environment and the negotiations in course for Rio+10 Summit.

The timeliness of the choice of the theme for the Conference – “The Coastal Zone Sustainable Development Policies in Europe” – is due both to the global interest for Ocean affairs and the historical tradition of Portugal. That tradition and interest were behind the proposal made by Portugal at the 7th Annual Conference of the EEAC, in Budapest, 1999.

We believe that this theme, very much in the forefront of the current international agenda, and our strategy of encouraging the participation of well known scientists and experts, thus complementing the competencies and experience of our own Councils, enhanced the debate and conclusions of the Conference. It was also recognised that it facilitated communication among members of the European scientific community and a better integration of our debate in societal concerns.

Some of the objectives of the Conference, such as strengthening dialogue and relationships among the various organisations of the Union were clearly reached. The adopted conclusions reflect well the work done during the Conference and, because of the consensus achieved, will certainly prove to be an useful contribution to the reinforcement of the voice of the Councils, not just at European level but also in international negotiations, namely in the preparation of Rio+10.

On behalf of the Portuguese National Council for the Environment and Sustainable Development I would like to thank all the distinguished European Councils’ members, invited speakers, the Steering Committee and the Focal Point Service for their active involvement in this rewarding initiative. I would also like to particularly thank the Steering Committee Chairman, the Focal point Service and the Portuguese authorities, namely the Portuguese Ministry of Environment and Land Management and the Municipalities of Sesimbra and Lisbon for their support.

CNADS Chairman  
Mário Ruivo

## Participating Councils and other Bodies

COUNCIL/INSTITUTION	COUNTRY
AUSTRIAN ASSOCIATION FOR AGRICULTURAL RESEARCH (ÖVAF)	AUSTRIA
BELGIAN FEDERAL COUNCIL FOR SUSTAINABLE DEVELOPMENT (FRDO-CFDD)	BELGIUM
ENVIRONMENTAL COUNCIL OF THE REGION BRUSSELS (BRUSSELS MILIEURAAD)	BELGIUM
ENVIRONMENTAL AND NATURE COUNCIL OF FLANDERS (MINA-RAAD)	BELGIUM
WALLON ENVIRONMENTAL COUNCIL FOR SUSTAINABLE DEVELOPMENT (CWEDD)	BELGIUM
DANISH NATURE COUNCIL (NATURRÅDET)	DENMARK
ESTONIAN COMMISSION ON SUSTAINABLE DEVELOPMENT (ECSD)/MINISTRY OF THE ENVIRONMENT	ESTONIA
FINNISH COUNCIL FOR NATURAL RESOURCES (FCNR)	FINLAND
FRENCH COMMISSION ON SUSTAINABLE DEVELOPMENT (CFDD)	FRANCE
OCEANOLOGY CENTRE OF MARSEILLE	FRANCE
GERMAN ADVISORY COUNCIL ON GLOBAL CHANGE (WBGU)	GERMANY
GERMAN COUNCIL OF ENVIRONMENTAL ADVISORS (SRU)	GERMANY
MINISTRY OF ENVIRONMENT LOWER-SAXONY (SECTION SURFACE WATER PROTECTION)	GERMANY
HUNGARIAN NATIONAL COUNCIL ON THE ENVIRONMENT (OKT)	HUNGARY
THE NATIONAL SUSTAINABLE DEVELOPMENT PARTNERSHIP - COMHAR	IRELAND
<i>S.E. "VIDES PROJEKTI"</i>	LATVIA
ADVISORY COUNCIL FOR MARINE ENVIRONMENTAL PROTECTION ISSUES LITHUANIA	LITHUANIA
ADVISORY COUNCIL FOR RESEARCH ON NATURE AND ENVIRONMENT (RMNO)	NETHERLANDS
COUNCIL FOR THE RURAL AREAS (RLG)	NETHERLANDS
DUTCH COUNCIL FOR HOUSING, SPATIAL PLANNING AND THE ENVIRONMENT (VROM-RAAD)	NETHERLANDS
DUTCH ADVISORY COUNCIL FOR TRANSPORT, PUBLIC WORKS AND WATER MANAGEMENT (RVW)	NETHERLANDS
NETHERLANDS SCIENTIFIC COUNCIL FOR GOVERNMENT POLICY (WRR)	NETHERLANDS
WADDEN SEA ADVISORY COUNCIL (WAR)	NETHERLANDS
STATE ENVIRONMENTAL COUNCIL OF POLAND/POLISH NATIONAL COUNCIL ON ENVIRONMENT	POLAND
PORTUGUESE NATIONAL COUNCIL ON ENVIRONMENT AND SUSTAINABLE DEVELOPMENT (CNADS)	PORTUGAL
COUNCIL OF THE GOVERNMENT FOR SUSTAINABLE DEVELOPMENT - MINISTRY OF ENVIRONMENT	SLOVAKIA
THE COUNCIL FOR ENVIRONMENTAL PROTECTION OF THE REPUBLIC OF SLOVENIA (CEPRS)	SLOVENIA
<u>MPASTOR</u>	SPAIN
SWEDISH ENVIRONMENTAL ADVISORY COUNCIL (MVB)	SWEDEN
COUNTRYSIDE COUNCIL OF WALES (CCW)	UNITED KINGDOM
ENGLISH NATURE (EN)	UNITED KINGDOM
SCOTTISH NATURAL HERITAGE (SNH)	UNITED KINGDOM
JOINT NATURE CONSERVATION COMMITTEE (JNCC)	UNITED KINGDOM
ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION (RCEP)	UNITED KINGDOM

CENTRE OF ECONOMY AND ETHIC FOR THE ENVIRONMENT AND DEVELOPMENT - UNIVERSITY OF SAINT QUENTIN EN YVELINES	<b>FRANCE</b>
HEAD OCEANOGRAPHY LAB - CENTRE D'ETUDIS AVANCATS DE BLANES	<b>FRANCE</b>
CENTRE OF ENVIRONMENTAL BIOLOGY AND DEPARTMENT OF ZOOLOGY - LISBON SCIENCE FACULTY OF LISBON UNIVERSITY	<b>PORTUGAL</b>
CILPAN – CENTRE INTERNATIONAL DE LUTTE CONTRE LA POLLUTION DE L'ATLANTIQUE DU NORD-EST	<b>PORTUGAL</b>
INAG – INSTITUTE OF THE WATER	<b>PORTUGAL</b>
INSTITUTE OF APPLIED SCIENCE AND TECHNOLOGY	<b>PORTUGAL</b>
UNIT OF ECONOMIC AND BUSINESS SCIENCES - UNIVERSITY OF ALGARVE	
OFFICE OF THE SECRETARY OF STATE OF WATERS AND COASTS - MINISTER OF ENVIRONMENT OF SPAIN	<b>SPAIN</b>
CENTRE FOR TROPICAL COASTAL MANAGEMENT UNIVERSITY OF NEWCASTLE UPON TYNE	<b>UNITED KINGDO</b>

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EUROPEAN ENVIRONMENTAL AGENCY	<b>COPENHAGEN</b>
EUROPEAN COMMISSION, UNIT NATURE PROTECTION, COASTAL ZONES	
EUROPEAN CONSULTATIVE FORUM FOR ENVIRONMENT AND FOR SUSTAINABLE DEVELOPMENT	
INTERNATIONAL ENVIRONMENT INSTITUTE FOUNDATION FOR INTERNATIONAL STUDIES	

FOR MORE INFORMATION ABOUT THE EUROPEAN ENVIRONMENTAL ADVISORY COUNCILS, PLEASE CONSULT OUR WEBSITE AT:

<http://www.EEAC-network.org>

**Friday, 2<sup>nd</sup> June**

**10:00H – 12:00H** - *STEERING COMMITTEE – INTERNAL MEETING*

**13:30H – 14:00H** - *REGISTRATION*

**14:00H – 14:30H** - WELCOME AND INFORMATIONS ON THE 8TH ANNUAL CONFERENCE

**14:30H** – EXCURSION TO THE *ARRÁBIDA NATURAL PARK* (BUS) AND ADJOINING *MARINE RESERVE* (BY TWO TYPICAL BOATS FROM SETÚBAL TO SESIMBRA), HOSTED BY CELSO SANTOS, DIRECTOR OF THE ARRÁBIDA NATURAL PARK

**20:00H** - INFORMAL WELCOMING DINNER - "ZIMBROS INN"

**SATURDAY, 3<sup>RD</sup> JUNE**

**09:30H – 10:00H** - *OPENING SESSION* - CHAIRED BY THE SECRETARY OF STATE OF ENVIRONMENT AND THE MAYOR OF SESIMBRA

**10:00H – 11:00H** - *COORDINATION MEETING* ON THE EXISTING AND NEW *EEAC PARALLEL WORKING GROUPS* (AGRICULTURE, WATER FRAMEWORK DIRECTIVE, ENERGY, 6TH EAP): LAST ACTIVITIES, EVALUATION AND FUTURE WORK PLAN – **CHAIR: HUBERT DAVID**

- *JOINT MEETING* WITH THE **CHAIRPERSONS AND RAPORTEURS** OF THE 4 WORKING GROUPS AND THE **RAPORTEUR GENERAL** (COASTAL ZONES): *METHODOLOGY AND GUIDELINES FOR THE CONFERENCE CONCLUSIONS AND PRESS RELEASE* - **CHAIR: MÁRIO RUIVO**

**10:00H – 11:15H** - *COFFEE BREAK*

**11:15H – 13:15H** - *EEAC PLENARY SESSION - STEERING COMMITTEE'S REPORT* INCLUDING REPORT OF SECTORAL WORKING GROUPS - **CHAIR: HUBERT DAVID**

**13:15H – 14:30H** - *LUNCHEON*

**14:30H – 16:30H** - *EEAC PLENARY SESSION* – DEBATE OF THE STEERING COMMITTEE REPORT AND FUTURE WORK AND STRUCTURE - **CHAIR: HUBERT DAVID**

**16:30H – 16:45H** - *COFFEE BREAK*

**16:45H – 18:45H** - *PRESENTATION OF EEAC MEMBER COUNCILS* AND CEE COUNCILS ON THEIR PAST, CURRENT AND FUTURE TOPICS OF IMPORTANCE, AND *PRESENTATION BY PROF. ROEL IN'T VELD – RMNO CHAIRMAN: RELATIONSHIP BETWEEN SCIENCE AND POLICY – HOW TO OPTIMISE THE USE OF KNOWLEDGE IN POLICY MAKING* – **CHAIR: BARONESS YOUNG OF OLD SCONE**

**19:20H** - *DEPARTURE FOR DINNER*

**20:30H** - *DINNER OFFERED BY THE MINISTER OF ENVIRONMENT AND LAND MANAGEMENT AT POUSADA DE S. TIAGO, PALMELA*

**SUNDAY, 4<sup>TH</sup> JUNE**

**09:00H – 11:00H - 1ST PLENARY SESSION: “SUSTAINABLE DEVELOPMENT OF THE EUROPEAN COASTAL ZONES: ISSUES AND INSTITUTIONAL FRAMEWORK”**

- **MÁRIO RUIVO (CHAIRMAN OF CNADS) – THEME INTRODUCTION**
- **INVITED SPEAKERS:**
  - LUCIEN LAUBIER (CENTRE D’OCÉANOLOGIE DE MARSEILLE, FRANÇA)
  - BRUNO JULIEN (EUROPEAN COMMISSION, DG ENVIRONMENT)
  - DOMINGO JIMENEZ-BELTRAN (EEA)

**11:00H – 11:15H - COFFEE BREAK**

**11:15H – 13:00H - 1<sup>ST</sup> WORKSHOPS SESSION (SIMULTANEOUSLY):**

- (1) *INTEGRATED MANAGEMENT OF OFF-SHORE AND LAND-BASED ACTIVITIES*
- (2) *THE NEW WATER FRAMEWORK DIRECTIVE AND ITS IMPACT ON COASTAL ZONE MANAGEMENT*
- (3) *SUSTAINABLE TOURISM*
- (4) *MARINE PROTECTED AREAS AND NATURAL RESOURCES CONSERVATION*

**13:00H – 14:30H - LUNCHEON**

**14:30H – 16:00H - 2<sup>ND</sup> WORKSHOPS SESSION** INCLUDING THE DRAFTING OF CONCLUSIONS FROM THE FOUR WORKSHOPS

**16:00H – 16:15H - COFFEE BREAK**

**16:15H – 17:45H - 2<sup>ND</sup> PLENARY SESSION – RAPPORTEURING THE 4 WORKING GROUPS DRAFT CONCLUSIONS AND DEBATE (WITH INVITED EXPERTS PARTICIPATION)**

**17:45H – 19:15H - PRESENTATION OF THE PRELIMINARY DRAFT CONFERENCE THEMATIC CONCLUSIONS (AND THE PRELIMINARY ELEMENTS FOR THE PRESS RELEASE) AND DEBATE**

**19:30H - DEPARTURE FOR DINNER**

**21:00H - DINNER OFFERED BY THE MAYOR OF LISBON ABOARD A TRANSTEJO BOAT, CRUISING ON THE TEJO’S ESTUARY, IN FRONT OF LISBON**

**MONDAY, 5<sup>TH</sup> JUNE**

**09:00H – 10:00H - JOINT MEETING OF THE 4 WORKSHOP RAPPORTEURS AND/OR CHAIRS AND/OR STEERING COMMITTEE (“THE DRAFT TEAM” TO BE DESIGNATED) TO ADJUST THE DRAFT CONFERENCE CONCLUSIONS AND THE PRESS RELEASE**

**10:30H – 12:30H - STEERING COMMITTEE MEETING - THE FUTURE STRUCTURE OF THE NETWORK**

**12:30H - PRESS CONFERENCE:** HUBERT DAVID  
MÁRIO RUIVO  
HUBERT WIGGERING  
VIRIATO SOROMENHO-MARQUES  
ARISTIDES LEITÃO

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**CONFERENCE CLOSING**

# Status Report 2000 of the EEAC Network

## Mandates, Decisions and Protocols 1998 - 2000

*endorsed by the Plenary Session of the EEAC  
on 03.06.2000,  
8th Annual Conference in Sesimbra, Portugal,  
based on the Steering Committee Report*

### Introduction

The Plenary Session of the EEAC during the Annual Conference 1999 in Budapest, Hungary had decided on several principles and tasks for the European Environmental Advisory Councils networking, its Steering Committee (in the following: "S.C.") and the common secretariat, the Focal Point of the EEAC network. The results of the work based on those given mandates and the future work plan were reported and discussed at the Plenary Session of the 8th Annual Conference in Sesimbra, Portugal.

The Steering Committee Report ("S.C. Report") had been disseminated to all EEAC participants prior to the conference. The following "Status Report 2000" is a summary of this S.C. report and includes some background information and all mandates 1998 and 1999, as shown on overheads during the Plenary session as well as the decisions of that Plenary Session 2000 and the revised version of the Protocols 1999 (which are now the Protocols 2000). *Changes made for the decisions as proposed in the S.C. report are marked in italic.*

### Abbreviations

Using the abbreviation "EEAC" for the network of European Environmental Advisory Councils (as well as "EEAC network") has become common since 1998. At the same time the common secretariat is called "Focal Point" rather than "Focal Point Information Service".

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# I. BACKGROUND, ACTIVITIES AND PRINCIPLES OF THE EEAC NETWORK

## 1. REPORT OF ACTIVITIES BASED ON THE GIVEN MANDATES

### 1.1 CORE BUSINESS: NETWORKING AND EXCHANGE OF INFORMATION

Mandate 98: The co-operation within the EEAC network shall be continued and intensified.

Mandate 99: Provide up-dated information on the participating councils and their activities shall be a continuous activity of the Focal Point. Councils should become more pro-active.

#### 1.1.1 Collection and delivery of information: homepage and e-mailing as a key basis for the exchange of information:

<b>1</b>	<b>Decision 2000</b>
	The implementation policy is reinforced. The Focal Point aims to continuously improve its performance in this respect. The councils are encouraged to be more pro-active, and the Focal Point requests information on a regular basis (quarterly / twice a year). E-mailing is the preferred way of communication and exchange of information. The homepage should be as up to date as possible.

- Supplied information should cover both internal issues of the councils such as change of members, structure, tasks etc. and substantive issues like priority areas, fields of activities and specific topics given advise on or working on.
- EEAC councils are encouraged to use the Focal Point's e-mail-listing for seeking bi- or multi-lateral co-operations, for creating "virtual working groups".
- Councils in the countries of the EU presidency shall deliver the list of priority issues as early as possible to the Focal Point.
- The network is open for contacts and collaboration with councils from other "sectors" or with other core tasks, which nevertheless also relate to environmental and/or sustainability policy (e.g. economic councils).

#### 1.1.2 Annual conferences: organisation and hosts

Mandate 98 and 99: The Focal Point shall provide secretariat assistance for the hosting council prior to, during and after the annual conference.

<b>2</b>	<b>Decisions 2000</b>
	<ol style="list-style-type: none"> <li>1. The MiNa-Raad will take the lead in organising the annual conference 2001 to take place during the Belgian EU presidency in fall.</li> <li>2. The Danish Nature Council will host the Annual Conference 2002 to take place during the Danish EU presidency in fall.</li> <li>3. The Focal Point will assist in the preparation of the subsequent annual conferences. To avoid duplicate work, the Focal Point will write a check list covering the basic procedures.</li> </ol>

### 1.1.3 Working groups: activities and work plan

Mandate 98: The plenary in Tuusula installed two working groups "transportation" and "agriculture". The Focal Point shall support the hosting councils in organising the meetings.

Mandate 99: The plenary confirmed the continuance of the working group "agri-environment", the creation of a new group on "energy" and the attempt to re-establish the group on "transport".

<b>3</b>	<b>Decisions 2000</b>
1.	The agri-environment group will continue its work as proposed. The new host is EN.
2.	The energy group will start its work as proposed by the hosting council VROM-Raad
3.	The Focal Point will facilitate any other bi- or multi-lateral co-operation between councils and will again try to identify interested councils for the transportation group.
4.	<i>A working group to follow-up the discussion on the EU Sustainability Strategy is installed, succeeding the ad-hoc group on the 6EAP.</i>

### 1.1.4 Publishing and disseminating the results from various activities

Mandate 98: The Focal Point Information Service shall adequately assist both the councils hosting the annual conferences and the ones hosting a working group or a special meeting in publishing the outcomes.

Mandate 99: The proceedings of the Budapest conference and other publications should be published rather fast and on a low-budget basis.

**Decision 2000:** No changes; those assisting activities are continuous tasks of the Focal Point.

## 1.2 EXTERNAL AFFAIRS: COLLABORATION AND INVOLVEMENT OF THE NETWORK

Mandate 98 and 99: The Focal Point Information Service and the Steering Committee shall intensify external contacts and the distribution of EEAC Councils views.

### 1.2.1 Contacts to other European institutions

#### Intended activities of the S.C.

1. Consultative Forum: The co-operation will be kept alive. Intensity will be based on a case to case decision.
2. European Commission: EEAC will remain involved in the development of the 6EAP and will also give an input to the development of the S.D. strategy of the Commission.
3. European Parliament:  
A meeting with Carolyn Jackson MEP and other relevant members of the EP Environmental Committee will be organised.
4. Annual meetings with the main Brussels based NGOs will be conducted.
5. EEA: no news

## 1.2.2 Relation to NSCDs and involvement of EEAC in the Rio+10 process

Mandate 98 and 99: The Focal Point shall identify new potential participants for the network.

### 1. NCSD involvement

<b>4</b>	<b>Decisions 2000</b>
	<ol style="list-style-type: none"> <li>1. <i>NCSDs are invited to participate in the EEAC network. This both applies to countries where there are no other councils (e.g. Italy, Switzerland, Norway) and to countries with EEAC members (NL, UK, S, IRE, A, HUN). A decision about membership is postponed until next year.</i></li> <li>2. The S.C. will identify, what (specific) services are asked for by S.D. councils who are already or who will become members.</li> </ol>

### 2. Earth Council request

<b>5</b>	<b>Decisions 2000</b>
	<ol style="list-style-type: none"> <li>1. <i>The S.C. will offer to the Earth Council that the Focal Point will facilitate the contact.</i></li> <li>2. At the next annual conference the S.C. will present a monetary and political cost-benefit analysis of the global linkage.</li> </ol>

## 2. BALANCING NETWORKING AND INFLUENCING POLICY MAKING

### 2.1 BACKGROUND

At the annual conference in Budapest 1999 the Steering Committee had been asked to review the principles, aims and objectives of the EEAC network, which were discussed and agreed in Stockholm 1996, and to present a revised proposal for balancing of the two general goals of the EEAC: 'internal networking' and 'influencing' environmental policy making.

#### 2.1.1 Stockholm Decisions 1996

**Principle objectives and activities of the EEAC** (cf. also Annex 2 of S.C. Report):

- Exchange of information and learning from each other,
- identify upcoming strategic issues,
- facilitate the development of some common positions.

The first two objectives can be seen as 'networking', the latter is part of 'influencing'.

**Establishment of:**

- a **Steering Committee** to overlook the activities,
- the **Focal Point Information Service** as common secretariat to facilitate the activities.

#### 2.1.2 How much has been done internally and externally

#### 2.1.3 Issues of importance for the EEAC

(cf. Annex 6)

### 2.2 REVIEW OF THE AIMS AND OBJECTIVES OF THE EEAC NETWORK

The objectives of Stockholm have been put in practice by the S.C. and the Focal Point. In the reviewing process the S.C. came to the following conclusions: Networking itself is the core business of the EEAC network and the Focal Point.

Reasons:

- 1) The original two purposes of the network remain:
  - a) Improving the advice given to national governments by anticipating forthcoming EU policies and laws

- b) Focal Point: serving and facilitating the work of the member councils.
- 2) There is no influencing without sound statements.
- 3) Priorities have to be set in terms of how to spend budget and resources.

Two reasons for external activities, i.e. attempting to add value to and influence European environmental policy making, can be deducted from the principle objectives:

1. Assist Councils' thinking and advice to their own national governments
2. The best way of anticipating strategic issues is to be considered as a valued body involved in those processes.

<b>6</b>	<b>Decision 2000</b>
	The plenary agrees to the following conclusion ( <i>amended sentence</i> ): <i>There is a ranking of the two aims of the network, 1. Networking and 2. influencing, although there are strong interdependences between those two aims.</i>

In addition to the S.C. report a proposal for a "Charter of Principles" had been presented by the Portuguese CNADS, as well as a proposal on "Ideas to the EEAC Network". The first document was discussed in the plenary and renamed to "Sesimbra Declaration" (see *Addendum I* in *Proceedings*). It was decided that the CNADS should redraft it based on the comments made and that the second draft will be further discussed among the councils taking advantage of Focal Point site.

## 2.3 NETWORKING STRATEGY

### 2.3.1 General

- Aims and objectives for networking have not changed over the years;
- More specific targets have been developed and decided on;
- S.C. has reported on the achievements annually;
- Mechanisms are in place with the networks' activities, conference, working groups, ad-hoc groups and other "joined actions";
- Measures of success so far have been the degree of "deepening" and "widening" of the network → number of participating and subscribing members;
- Other measures of success still have to be further discussed.

### 2.3.2 EEAC statements: common views and living in diversity

#### Flexible approach:

- Identifying the smallest common denominator for an executive summary or a synopsis and adding the single councils statements as Annex (→ 6EAP);
- Elaborating bi- or multilateral statements, which are supported by the councils signing to it;
- "Common statements" in the original way, by using the member council's endorsement procedures, might be appropriate occasionally;
- "Living in diversity" has been and will be communicated to all European institutions;
- Opportunities for joined action in relation to influencing policy decision making at the EU level, especially on an ad hoc basis (temporarily alliances):
  - occasional coalitions of councils,
  - stimulate case-studies,
  - make observations in specific situations
  - give signals to policy-makers.
- Focal Point facilitates: systematically providing information to the EEAC-network as a whole about the progress or results of joined action.

<b>7</b>	<b>Decisions 2000</b>
	<ol style="list-style-type: none"> <li>1. The plenary agrees to the flexible approach for EEAC statements as outlined.</li> <li>2. All activities in the field of joint actions are encouraged and supported.</li> </ol>

## 2.4 EU - INFLUENCING STRATEGY

1. The plan sets out, in the form of aims, objectives, targets, measures of success, and mechanisms a process for influencing "Brussels". The target audience is defined as:
  - The Council of Ministers and EU Presidency
  - EU Commissioners
  - European Parliament - Environment Committee
  - Senior officials in DGXI and other relevant Directorates
  - European Environment Agency (EEA)

### Aim

2. To ensure the individual and collective advice of European Environmental Advisory Councils reaches the heart of policy decision making within the European Union.

### Objectives

- The Councils are recognised, valued and used by:
  - EU Commissioners,
  - Senior Staff in DG Environment and other Directorates,
  - The European Parliament and its Environment Committee,
  - EEA.
- Ensure, through individual Council national Government contacts, that the Council of Ministers are aware of the Councils collaboration and its advice.
- Provide a force for better integration between northern, southern and accession Member States concerning environmental policy and institutional advice.
- Develop clear relationships with the Consultative Forum and the EEA.

### Targets

- Commission Officials from relevant DG's to attend all annual meetings;
- Conclusions of annual meetings and working groups to be sent to relevant Commissioners and meetings sought. Aim at meeting one Commissioner per year;
- Focal Point *and Steering Committee* to maintain regular (approximately monthly) contact with DG Environment (currently via Nick Hanley);
- At least annual consultations and exchange of intelligence with Brussels NGO community;
- Focal Point to be included in organisations regularly consulted by DG Environment and other Directorates on environmental policy issues;
- Increased Brussels 'networking' by Focal Point (on a case to case basis in co-operation with or by other councils);
- Maintain close links with other European organisations that have influence within Brussels;
- Maintain regular contact with the European Parliament, specifically the Environment Committee.

### Measures of Success

- Degree of policy changes in the direction of advice given by Councils;
- Number of invites (unsolicited) to attend Commission functions or other EU working activities;
- Recognition of the European role played by Councils from their national governments;
- 'Hit rate' on the Focal Point web site.

### Reporting

3. The Steering Committee should be given the opportunity to review progress with the strategy, and if necessary amend or re-write the strategy on an annual basis. The Focal Point would be charged with preparing a brief report summarising progress against targets *at least*

on an annual basis, this could include initiatives of individual Councils where this would enhance the credibility of Council involvement.

### Mechanisms

4. As we have demonstrated to date, regular contact with the Commission can be maintained through the Focal Point and member councils on occasional meetings. To increase the effectiveness in progressing the above objectives, a presence in Brussels *is a desirable goal*. This would enable the EEAC to be readily on hand, brief officials and the Parliament at short notice and collect intelligence on specific issues and opportunities for wider influence. Such a presence would enable the EEAC to become part of the 'inner circle' in influence within Brussels. The value of that *will be actively studied by the Steering Committee* and the issue will be reconsidered next year.
5. In addition to this we should at least hold the following events:
  - Annual Steering Committee in Brussels
  - Annual meeting with Environment Commissioner and Head of DG
  - Annual meeting with Parliament Environment Committee chair
  - Annual exchange of intelligence/work plans with key NGOs
  - Monthly contact with key officials in DG Environment
  - Opportune contact with other DGs - follow-up to working groups.

<b>8</b>	<b>Decision 2000</b>
	The plenary agrees to the outlined influencing strategy <i>with its amendments</i> .

### 2.5 CONCLUSIONS

1. Networking itself is the core business of the EEAC network and the Focal Point.
2. The EEAC network wants to add value to and influence EU environmental policy making with a flexible approach that takes into account the diversity of the network.

## II. INTERNAL ORGANISATION

### 1. PRINCIPLES AND STRUCTURE OF THE STEERING COMMITTEE

Mandate 98: The basic principles decided on in Tuusula are to be developed further.

Mandate 99: The system of membership in the Steering Committee shall be revised.

<b>9</b>	<b>Endorsed Protocols 2000</b>
	<ol style="list-style-type: none"> <li>1. The members of the Steering Committee as a minimum are: <ol style="list-style-type: none"> <li>a) Current coordinating council of the Focal Point,</li> <li>b) immediately succeeding Focal Point host,</li> <li>c) "Troika": the council organising the present annual conference, the one hosted the last and the council hosting the subsequent one,</li> <li>d) one chairing council,</li> <li>e) <i>two vice-chairing councils: the vice-chairs are alternates to the chair.</i></li> <li>f) <i>The number of SC members shall not exceed nine: Seven seats are automatically taken by the positions Chair, Vice-Chairs, Focal Point host and Troika (in some years eventually one member more: the succeeding Focal Point host, if not already member of the S.C.). One to two seats can be filled by other candidates.</i></li> </ol> </li> <li>2. The chair and vice-chairs should not lie with the council coordinating the Focal Point.</li> <li>3. Participants should be active members of councils and have the authority to make decisions on behalf of their council.</li> <li>4. The geographical spread of membership is important with an ideal structure including northern, western, central &amp; eastern and southern councils.</li> <li>5. <i>It is aimed that any single country is represented by one council only.</i></li> <li>6. The chair of the Steering Committee and the council coordinating the Focal Point externally represent the EEAC network.</li> <li>7. <i>Only subscribing councils are eligible to become members of the S.C.</i></li> <li>8. <i>To provide a sufficient continuance in the change of chairmanship and Focal Point the rotation of those positions must not take place at the same time.</i></li> <li>9. <i>The rotation period for the Focal Point is three years, for the both the chair and the vice-chairs two years.</i></li> </ol>

#### **Elections**

New Chair: Richard Macrory (RCEP)

Vice-Chairs: Harriet Lonka (FCNR)  
Viriato Soromenho-Marques (CNADS)

Open seats of the Steering Committee (cf. Annex 4 for all S.C. members 2001):

RMNO, NL (Rein Koopmans),  
EN, UK (Sue Collins).

An extra seat for a council member from accessing countries is introduced. Elected:  
OKT, Hungary (Miklos Bulla).

All changes will be in force by 01.01.2001. Richard Macrory is invited to immediately participate in the Steering Committee.

The Focal Point remains with the SRU until 31.12.2001.

## 2. HOW TO DO THE WORK

### 2.1 Working groups

<b>10</b>	<b>Endorsed Protocols 2000</b>
	<p>The existing Protocols are confirmed:</p> <ol style="list-style-type: none"> <li>1. Working groups are installed at the annual conference, report at the next annual conference at which their future will be decided.</li> <li>2. During the course of the year ad-hoc working groups can be created. They also have to report at the next annual conference, and they should also be confirmed by the plenary meeting.</li> <li>3. The results of the working groups are considered as outcome of their work and not as common statements.</li> </ol>

### 2.2 Format of the annual conferences

<b>11</b>	<b>Decision 2000</b>
	<p>The format of the annual conferences will be kept in the following way:</p> <ol style="list-style-type: none"> <li>a) One key topic at the "main" conference day; workshops can be chosen to increase the time for discussion on that topic.</li> <li>b) A half to one excursion day.</li> <li>c) The time required for internal issues can vary depending on the decisions to be taken; a half day should be provided as a minimum.</li> <li>d) Councils will be encouraged to give presentations on their priority issues and activities during this "internal day".</li> <li>e) Since the annual conferences are the main meeting of the network, the exchange of information and presentations of EEAC member councils should be the core business.</li> </ol>

### 2.3 Involvement of Council members

**Mandate 99:** It is aimed that not only staff of the secretariats shall participate in the network. The secretariats of each council should more intensively encourage council members to participate in the annual conferences.

**Decision 2000:** The encouragement should continue and should also apply to working groups and external affairs.

### 2.4 Survey and research on structure, functioning and effectiveness of councils

**Mandate 99:** The EEACs consider a research project on the structure, functioning and effectiveness as relevant and helpful. The Focal Point Information shall prepare a project scheme and shall research on ways of external funding.

**Decision 2000:** The mandate of `99 is confirmed.

## 3. MEMBERS AND SUBSCRIPTION

**General definition:** Subscribing councils are "EEAC members"; other participating councils are called "EEAC participants".

### 3.1 Consolidation and expansion of the network

Mandate 98 and 99: The Focal Point shall intensify contacts to less involved councils and identify new potential participants and members for the network.

In 2000 there are sixteen subscribing councils (EEAC members). All subscribers of 1999 (fifteen) remained and one joined (Spanish CAMA). The Hungarian OKT proposes to join in 2000 and the German DRL considers to join.

#### Decisions 2000:

- Meetings with French councils will be arranged as soon as possible.
- Focal Point and S.C. will continue to encourage councils in Western and CE Europe to participate in the network.
- The Focal Point and S.C. will also continue to establish contacts with relevant Ministries in countries where there are no such councils. It will continue to encourage the establishment of environmental and/or S.D. councils.
- Contacts with NCSDs not yet participating will be established.

### 3.2 Subscription fee

Mandate 98: Subscription is fixed at a maximum level of 5.000 EURO. It is, however, desirable that subscription levels will be reduced as subscribing Councils increase in number.

Mandate 99: Subscription fee will be maintained at 5.000 EURO until 2000 (incl.) to provide that a little reserve will build up, that the network will not be endangered if councils might de-subscribe and that networking can be intensified and the profile sharpened; the level of subscription fee shall nevertheless be revised by the S.C.

In 1998 and 1999 a reserve of roughly 40.000 EURO has built up. The S.C. considers this amount not as sufficient to guarantee continuing business. The costs for the current level of activities (incl. a full post Focal Point) are around 75.000 EURO plus the costs of the council hosting the Focal Point. 15 councils are needed to maintain that level with the current level of subscription fee.

<b>12</b>	<b>Decisions 2000</b>
1.	The subscription fee will be kept at 5.000 Euro for 2001. At the same time a ceiling of 2 % of the annual budget of the respective member council is introduced. The basis for that will be the survey to be undertaken with criteria to be developed by the S.C.
2.	A reserve for a one year budget, i.e. 75.000 Euro, will gradually be build up over the years.

### 3.3 Endorsement of the budget plan 2000

Is endorsed.

## **Annexes**

### **Annex 1: Preliminary draft for a classification of environmental and S.D. councils**

(cf. S.C. Report)

### **Annex 2: Decisions of Stockholm 1996** (cf. S.C. Report)

### **Annex 3: Steering Committee Meetings**

2000

1. 17<sup>th</sup> January 2000 CNADS, Lisbon
2. 27<sup>th</sup> March 2000 MiNa-Raad, Brussels
- 14<sup>th</sup> April 2000 1. Tele-conference
- 28<sup>th</sup> April 2000 2. Tele-conference
- 12<sup>th</sup> May 2000 3. Tele-conference
- 19<sup>th</sup> May 2000 4. Tele-conference
3. 2<sup>nd</sup> and 5<sup>th</sup> June 2000 at the 8<sup>th</sup> Annual Conference, Sesimbra, Portugal

### **Annex 4: Structure of Steering Committee 1997-2000, new structure 2001 (and partly 2002)**

### **Annex 5: Income and budget plan 2000** (cf. S.C. Report)

### **Annex 6: Issues of Importance for the EEAC**

Issues of the last years have been:

1. "Cross-sectoral" themes:
  - Environmental Councils (1. EEAC conference 1993, Brussels)
  - Agenda 21 (2. EEAC conference 1994, Berlin);
  - Voluntary agreements (5. EEAC conference 1997, Netherlands);
  - EU 5th Environmental Action Programme (joint action 1998/1999, Cambridge web)
  - Policy integration, particularly in the fields of agriculture, forestry, transport and tourism (6. EEAC conference 1998, Finland);
  - European enlargement (7. EEAC conference 1999, Budapest);
  - Sustainable Development (conference "Sustainability 21" o-organised with the Consultative Forum, November 1999, Helsinki);
2. Agriculture
  - Sustainable land use, agriculture and environment (3. EEAC conference 1995, UK);
  - CAP reform/Agenda 2000 implementation (joint action 1996-1999, London, Copenhagen, Netherlands web);
  - World Trade Issues (statement of the agri-environmental group and others, November 1999, co-ordinated by the RLG, Netherlands);
  - Model of European Agriculture (international conference, April 2000, organised by the RLG, Netherlands).
3. Water and Coasts
  - Sustainable water management (4. EEAC conference 1996, Stockholm);
  - Water Framework Directive (ad-hoc group meeting hosted by the MiNa-Raad, March 2000, Brussels),
  - Sustainable Coastal Zone Management (8. EEAC conference 2000, Portugal);
4. Transport, energy and climate change
  - Transport (joint meeting of RCEP and SRU, September 1999, London),

- Climate change and energy (new working group, hosted by the VROM-Raad, fall 2000, Netherlands)

The current working agendas of Councils reveal the following additional issues are being explored by at least one/two Councils:

- Fisheries,
- Environmental and sustainability indicators,
- Adequate economic growth and sustainable development.

## Opening Session - 3rd of June

*CHAIR: SECRETARY OF STATE OF ENVIRONMENT AND MAYOR OF SESIMBRA*

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### ANNEX I

#### OPENING PRESENTATION

Mário RUIVO\*

- Your excellency, Minister for the Environment and Planning
- Your Excellency, Mayor of Sesimbra
- Mr. Domingo Beltran, General Director of the European Environment Agency
- Mr. Hubert David, Chairman of the Environment Consultative Councils
- Ladies and Gentlemen

As Chairman of the Portuguese Council for the Environment and Sustainable development, the organising Committee and host, it is my great pleasure to welcome all the participants in this Conference. Please allow me to make a special reference to His Excellency, the Minister, for honouring us with his presence, despite his many commitments.

We can, therefore, enjoy the presence of a member of the Portuguese Government, presently chairing the Environment Council of the European Union, providing us not only with an incentive for our work but also with a clear sign of the importance of the dialogue between Governments and Civil Societies.

The Portuguese National Council for the Environment and Sustainable Development has only been working for a little over two years. Despite its recent establishment, it has been trying, since 1998, to co-operate with the other European Councils in order to contribute to the reinforcement of our respective spheres of influence. The establishment of the desirable geo-cultural balances on a European scale, - North/South, East/West – together with a growing dialogue between the Councils and the communities they belong to has also been our common goal.

We should underline that this is an important period for the European Community, when the guidelines for the 6<sup>th</sup> European Action Programme for the Environment are being defined and the negotiations for the adoption of the Water Framework Directive are being finalised. Both regarding

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\* Chairman of CNADS

institutions and directives for planning and financing instruments, innovating ideas are coming forth. The European Environment Councils are aware of these developments and, during this Conference, will try to formulate strategies and find common positions to be presented to the appropriate European Union organisms. The enhancement of dialogue and the strengthening of the relationships among the various organisms of the Union are also an objective of the European Councils and this Conference. We are certain that our conclusions and recommendations will help in attaining those objectives.

In this context, we must also underline the importance of the commitment of all Councils to the preparation of Rio+10 Summit, strengthening the debate and public participation in the common goal of reaching sustainable development.

The recent Round Table of the National Councils for Sustainable Development, in Brussels, followed by the International Forum at the United Nations, New York, demonstrate the role that the National Councils already have and that we predict to be even stronger in the future.

It is, therefore, with great pleasure that I welcome all the Councils present and, in particular, the representatives of Central and Eastern European countries, presently waiting to join the European Union. I also would like to thank all the experts that accepted to contribute to our work with their valuable experience.

I would like to recall that Portugal has recently been taking on a more active role in international co-operation in marine affairs. The reasons for this are both historical and cultural – Portugal has always looked to the sea and had a dialectic relationship with it – as well as strategic and because of the growing importance of the oceans and Coastal Zones for the future of Humankind. It was in this context that the other Councils accepted the theme for this Conference, proposed by Portugal in Budapest, in 1999. I hope that with your active participation and collaboration the wisdom of that decision will be proved right.

We hope that the participants of this Conference will find inspiration for their work in this location: the western coast of Europe, by the Atlantic Ocean and a Nature Reserve where the Mediterranean “*maquis*” is still present and next to a Marine Reserve with great ecological value.

On behalf of the Portuguese National Council for the Environment and Sustainable Development I would like to thank our Chairman, M. Hubert David and all the other members of the Steering Committee, in particular Prof. Hubert Wiggering, co-ordinator of the Focal Point, for their valuable support in the organisation of this initiative.

I thank you all again for coming and I am certain that with your collaboration our work will prove to be a success.

## Thematic Day - 4th of June

### CONCLUSIONS AND RECOMMENDATIONS

#### **FIRST PLENARY SESSION - SUSTAINABLE DEVELOPMENT OF THE EUROPEAN COASTAL ZONES: ISSUES AND INSTITUTIONAL FRAMEWORK**

##### INVITED SPEAKERS:

BRUNO JULIEN: *THE EU ROLE IN PROMOTING SUSTAINABLE DEVELOPMENT OF THE COASTAL ZONE*  
(ANNEX III)

LUCIEN LAUBIER: *MEDITERRANEAN MARINE PROTECTED AREAS AND BENTHIC COASTAL ECOSYSTEMS VULNERABILITY*  
(ANNEX IV)

DOMINGO JIMÉNEZ-BELTRAN: *TOWARDS A SUSTAINABLE EUROPE: BENCHMARKING TOURISM SUSTAINABILITY*  
(ANNEX V)

### WORKSHOP SESSIONS

#### **WORKSHOP 1: INTEGRATED MANAGEMENT OF OFF-SHORE AND LAND-BASED ACTIVITIES** (ANNEX VI)

**CHAIRMAN: PETER BURBRIDGE**

**RAPPORTEUR: MÁRIO BAPTISTA COELHO**

**PARTICIPANTS:** Ülle VAHT; Rein KOOPMANS; Teun KLUMPERS; Lucien LAUBIER; Filipe DUARTE SANTOS; M. SCHULZ-BALDES; Jan DeSMEDT; Tadas NAVICKAS; Peder AGGER; H. WOHLMEYER; David LEWIS; Baroness YOUNG OF OLD SCONE; Jorgen PRIMDAHL; Ronald FLIPPHI; Henk van LATESTEIJN; Simo ISOAHO

#### **WORKSHOP 2: THE WATER FRAMEWORK DIRECTIVE AND ITS IMPACT ON COASTAL ZONE MANAGEMENT** (ANNEX VII)

**CHAIRMAN: ANTÓNIO GONÇALVES HENRIQUES**

**RAPPORTEUR: DIRK UYTTENDAELE**

**PARTICIPANTS:** Hubert DAVID; Eugénio SEQUEIRA; Tomasz WINNICKI; J. SMITZ; Joërg JANNING; Hanne Stensen CHRISTENSEN; Pirkko SELIN; Richard MACRORY; Agneta ANDERSSON; Marion HUGHES; Siv NÄSLUND; Mário BAPTISTA COELHO; Miguel POZO DE CASTRO; Steve GIBSON.

**WORKSHOP 3: SUSTAINABLE TOURISM**  
(ANNEX VIII)

**CHAIRMAN: JOÃO ALBINO SILVA**  
**RAPORTEUR: VICKY ETHERIDGE**

**PARTICIPANTS:** *László HARASZTHY; Frantisek KOLOCÁNY; Harriet LONKA; Margarida CANCELA DE ABREU; Jan VERHEEKE; Franc LOBNIK; Matjaz LOBNIK; Sanni MANNINEN; Jacques LARET; Daniel FIGUEIRA DA SILVA; Marta PASTOR; Marlene MARQUES.*

**WORKSHOP 4: MARINE PROTECTED AREAS AND NATURAL RESOURCES CONSERVATION**  
(ANNEX IX)

**CHAIRMAN: ANTÓNIO CRUZADO**  
**RAPORTEUR: ANTÓNIO DOMINGOS ABREU**

**PARTICIPANTS:** *Johanna LAHTI; Sue COLLINS; Luis VICENTE; Wim WOLFF; J. KOKOTT; Louis CASSAR; Karin DUBSKY; John HOLTEN ANDERSEN; José GUERREIRO*

## Conclusions and Recommendations

The **8th Annual Conference of European Environmental Advisory Councils** held in Sesimbra from 2-5 June 2000 addressed the theme of *The Coastal Zones Sustainable Development Policies in Europe*. In order to promote a more detailed and wider approach to the theme the Conference organised itself in the following four Workshops:

- Integrated Management of Off-shore and Land-based activities.
- The New Water Framework Directive and its Impact on Coastal Zone Management.
- Sustainable Tourism on Coastal Zones.
- Marine Protected Areas and Natural Resources Conservation.

### I

#### GENERAL CONCLUSIONS AND RECOMMENDATIONS

**The Conference approved the following general conclusions and recommendations:**

1. The Conference recognises that in some areas of marine protection of coastal zones some progress has been made, but at the same time acknowledges the particular fragility of coastal zones, which are subjected to multiple and conflicting uses and interests. In spite of the pressures that threaten coastal ecosystems, neither governance policies nor public concerns are yet adequate to meet the challenges of sustainable development in these areas. States and individuals tend to reflect a narrow land-based vision, which is unable to perceive coastal and sea areas as an essential part of national and European spaces, rather than a borderline. The Conference calls for new measures **to raise public awareness of the crucial importance of the conservation and sustainable use of coastal zones**. Business and commercial activity in the coastal zone is a particular concern and this sector is identified as requiring new educational effort.
2. The Conference underlines the fact that the strong inertia that still prevents the EU and its member States from responding effectively to the various pressures which affect the environmental balance of coastal zones is a compelling mirror of our political, scientific and institutional weaknesses. The absence or delay in producing timely responses show us the lack of integration in current political strategies, the overlapping competence and/or sectoral inefficiency of administrative structures and the fragmentary and disperse model of scientific research and organisation. Taking this into account, the EEAC Conference actively **encourages cross-disciplinary initiatives to illustrate the economic, social and environmental value of coastal areas and resources**, and commitment to take concrete actions to correct the present situation.
3. The Conference emphasises the critical importance of incorporating coastal zones in future environmental policies as well as in any sustainable development strategies of the European Union and European countries. The European Union and its member States are confronted with old and new challenges facing coastal areas: diverse types of pollution, fisheries, agriculture impacts, population pressures translated both in urban spreading and out of control tourism growth, port expansion, among others. It is time to both fully implement existing policy instruments and to develop new tools and mechanisms to enhance coastal sustainability. New indicators are needed to assess the success of new programmes and

actions in preventing further environmental degradation, and bringing ecological recovery of coastal areas.

The Conference calls the EU **to adopt a challenging Integrated Coastal Zone Management (ICZM) strategy** requiring the development of Coastal Zones Management plans as a pre-condition for EU funding of development projects on the coast. This ICZM strategy should be fully integrated into the European Spatial Development Perspective (ESDP), which should include the ocean space from now on under national jurisdiction.

4. The Conference recognises that the *Demonstration Programme on Integrated Coastal Zone Management (ICZM)*, announced in 1995 by the European Commission constitutes, in spite of its shortcomings, a significant step in the right direction. The Conference exhorts the European Council, the European Parliament and the European Commission to launch further and broader initiatives in this critical area, inspired by a holistic and long term perspective, fostering local specificity, opening ways for **responsible participatory planning and monitoring**. The Conference further recommends that a wider use of combined instruments, aiming at a better resources management respecting the **ecological balance of marine areas**, should shape future policies and be reflected in any changes in existing EU policies as is the case of the 2002 Common Fisheries Policy (CFP) review.
5. The Conference calls for greater policy support for expanding **marine protected areas**. These areas are particularly valuable to our knowledge of marine ecosystems, and a better understanding of their resistance and resilience before human pressure. The Conference strongly recommends the full integration of marine and land based protected areas as part of wider nature conservation and a spatial planning strategies, which may help to overcome a traditional terrestrial biased approach.
6. The Conference considers the **Water Framework Directive to be an important step forward in integrating coastal zones**, including near shore waters, in a more comprehensive water policy. The Conference calls for a rapid and effective implementation of the Directive's aim to objective to restore ecological quality, by controlling of land-based and offshore sources of pollution. Institutional adjustments are essential to put into practice this overall strategy.
7. The Conference identifies the extraordinary **increase in tourism** in recent years, combined with its influence on transport and land use is a major challenge for the European environment. There is a lack of appropriate mechanisms at different policy levels. In this sense, the Conference strongly endorses the current efforts developed by the European Environmental Agency (EEA) with the aim of providing reliable and flexible indicators enabling better evaluation of the current environmental status as well as the degree of success of present and future policies and management measures. Describing complex systems and processes with one-dimensional parameters (so called key indicators) can be a preliminary approach only. The EEAC much more recommend functionality indicators and perspective monitoring due to concrete targets decided in a transparent, participative process. This set of indicators, reflecting the crucial relationship between economic and ecological systems shall try to be a clear and continuous counterpart to the aggregate and environmentally blind GDP index.
8. The EEAC Conference calls for concerted action, with clear targets and objectives, among all the actors involved in the process of sustainable development in European coastal areas. An enormous and long-term effort is needed in the domains of policy planning, administrative co-ordination and in **the improvement of the scientific inputs into the process of decision-**

**making.** In order to attain these objectives the EEAC actively recommends a more decisive EU leadership and guidance in promoting a **greater integration between development policies regarding coastal areas.**

## II

### THEMATIC CONCLUSIONS AND RECOMMENDATIONS

In addition, the Conference also approved the following specific conclusions and recommendations, based on the outcomes of the four thematic workshops.

#### Workshop 1

##### Integrated Management of Off-shore and Land-Based Activities

1. The Workshop 1 adopted the following conclusions:

- 1.1 Throughout Europe we are experiencing a very rapid rate of change in human activities in both the terrestrial and marine components of the coastal zone. The pace of change is accelerating, especially in marine areas.
  - 1.2. In addition to commonly recognised pressures such as the growth of coastal tourism, expansion of ports and harbours, expansion of aquaculture, etc., there are emerging pressures for development off-shore, in response to mounting restrictions on land.
  - 1.3. The accelerating pace and increasing scale of change in coastal development is not matched by change within institutions, policies, legal arrangements, plans or human capacities to achieve effective management of these development pressures.
  - 1.4 Many of the instruments available at EU, national or local levels of governance are not adequate to deal with emerging development pressures. It would be wrong to only rely on more effective implementation of such instruments. Instead we should seek to refine and integrate existing instruments such as the European Spatial Development Perspective and the Water Framework Directive, and develop new and more comprehensive tools to guide development in our coastal regions.
2. In summary, there is an urgent need for radical improvement in institutional arrangements and tools available to promote sustainable use of the coastal lands and waters in all European nations to meet the needs and aspirations of current and future generations. The following **recommendations** are designed to promote such improvements. The Workshop 1 requests the EEAC to call for:
- 2.1. strong leadership by the EU in developing an ICZM Strategy and programme for its implementation in all Member States. The strategy should incorporate a range of instruments including economic incentives and cross compliance with Structural Funds and other financial instruments to ensure that they are used in a truly sustainable manner. A number of benefits can be derived from the formulation and implementation of holistic coastal management, policies, strategies and plans. These include the effective delivery of

international commitments associated with the Habitats, Birds, Water Framework, and EA directives, as well as Natura 2000, and other policies;

- 2.2. to promote more holistic evaluation of the role of coastal lands, waters and other natural resources through support for cross-disciplinary studies to increase scientific knowledge. Equal effort should be given to apply this evaluation and research to policy formulation and the development of more integrated planning and management processes.
- 2.3. greater EU and national efforts to increase public awareness of the cultural, social, economic and environmental value of coastal lands, waters and other natural resources in meeting the objectives of sustainability.
- 2.4. greater integration of EU objectives, policies and regional development strategies to further Integrated Coastal Management planning.
- 2.5. the one mile marine limit of the Water Framework Directive to be extended to match other coastal boundaries. An extension to the 12 mile territorial limit would improve the effectiveness of the Directive and facilitate its integration with support Integrated Coastal Management.
- 2.6. progressive refinement of the WFD to address critical environmental parameters which have a significant influence on coastal processes. These parameters include sediment supply, base water flows in river and estuarine systems, and eutrophication.

## Workshop 2

### The New Water Framework Directive

3. The Workshop 2 adopted the following conclusions:

- 3.1. The Water Framework Directive is potentially a strong governance instrument that is complementary to the coastal zone management policy and will provide an important framework to further ICZM in Europe.
  - 3.2. The contribution of the Water Framework Directive to strategies for sustainable and integrated Coastal Zone Management should be strengthened.
  - 3.3. To encourage the European Parliament and the Council to agree to the adoption of the Water Framework Directives.
4. In addition, noting that the conciliation procedures are well advanced and will conclude in mid-July, the EEAC wishes to make some **recommendations** in connection with the implementation Water Framework Directive:
- 4.1. System boundaries, dynamics and definitions of key terms such as water quality, should be treated flexibly, taking into account variations in physical and ecological conditions. Particularly (but not exclusively):
    - the atmospheric transport of pollutants into coastal waters;
    - groundwater flows including transport of contaminants, and mixing of groundwater (e.g. in coastal, wetland and river confluence regions);
    - sediment transport, dredging and deposition;

- natural and human-influenced processes of change over time (affecting benchmarks for what constitutes an 'undisturbed' ecosystem).
- 4.2.** Attention must be given to the development of adequate regulatory frameworks for management of river and estuarine sediments within the context of river and coastal zone management, having especial regard for:
- The dredging, transport and deposition of sediments, notably their status as wastes (contamination, discharge or reuse);
  - Concertation of economic interests with environmental and territorial administrations to deal with the sources of contamination.
- 4.3.** Work must be undertaken to achieve conciliation, and to ensure continuity of coverage, between the WFD and key marine ecosystem quality conventions, notably (but not limited to) OSPAR and HELCOM.
- 4.4.** Implementation review mechanisms should be set up to monitor and ensure consistency of approach to implementation across the EU. These mechanisms should include: (a) government-level exchanges on key issues, and (b) meetings of regulatory authorities for exchange of experiences. The review results should be publicly available.

### **Workshop 3**

#### **Sustainable Tourism in the Coastal Zone**

**5.** The Workshop 3 adopted the following conclusions:

- 5.1.** Tourism is a priority sector and driving force. It has significant benefits and impacts from the economic – social – cultural – environmental point of view.
- 5.2.** The role of tourism in coastal sustainable development has been underestimated at EU and national levels.
- 5.3.** A framing policy/strategy is needed at EU, national and local levels to integrate environment and tourism interests. New and flexible cost/benefit indicators will play a key role in supporting mechanisms for assessment, benchmarking of progress, alternatives and continuous monitoring.
- 5.4.** There is a need to establish basic rules for tourism development, such as:
- determining (economic – social – cultural – environmental) carrying capacity of tourism locations;
  - Tackling the seasonality aspects of tourism in many areas;
  - Assuring consistency of tourism strategies with related urban and rural development;
  - Making a difference between natural and potential areas.
- 5.5.** Tourism requires improved internal and external integration:
- with land use and spatial planning, transport and infrastructures development;
  - to close the gap between distant operators (and countries net producers) and destinies (or net recipients) (internal);
  - to use mix of related instruments (economic taxes, technological innovation, social/behavioural patterns) to improve management of tourism.

**5.6.** Improved information dissemination and awareness raising is needed through:

- Free dissemination of best practices and success stories;
- Fostering education and training at all levels (user/consumer, economic agents, policy/administrative)
- Stimulating research on driving forces and behavioural market forces indicators.

**6.** In order to achieve these goals, the Workshop 3 formulates the following **recommendations** :

**6.1.** Tourism should be included in the European Union sustainability strategy and as a sector in the “Cardiff initiative” (sectoral strategy required);

**6.2.** The plans and strategies relating to other policies and sectors must be continuously scrutinised for interaction with tourism;

**6.3.** The tourism should be promoted as a theme for the 6th EAP;

**6.4.** Forthcoming European Council Presidencies should be encouraged to make tourism a priority. They should promote the assessments and prospects at European Union and national levels (including a specific assessment of the tourism development in the Mediterranean and the effects on non European Union countries).

**6.5.** Member States should be stimulated to support the “European Spatial Development Perspective” as a framework for sustainable land use, planning, coastal management and tourism.

#### **Workshop 4**

#### **Marine Protected Areas and Natural Resources Conservation**

**7.** The Workshop 4 adopted the following conclusions:

**7.1.** The current strategy of establishing a network, at European level, of Special Marine Protected Areas (SMPA) should be implemented at EU and national levels taking into consideration:

- national/international ocean policies, such as NATURA 2000, HELCOM, OSPAR, Barcelona Convention;
- national/European plans for integrated coastal zone management;
- considerable reduction of land based impacts on the coastal sea.

**7.2.** HABITAT, NATURA 2000, HELCOM, OSPAR and Barcelona Convention, were reviewed to consider how each might contribute for the establishment of a European network of SMPA, concluded, however, that:

- the existing instruments are not sufficient for the purpose of establishing an adequate network of SMPA;
- there are gaps in the legislation which ought to be filled up;
- there is a need to recognise the negative impact activities (such as fisheries, aquaculture, leisure and diving), in addition to the various sources of pollution.

**7.3.** The criteria for definition of SMPA were examined. Those criteria selected as important were:

- representativeness of biodiversity within a biogeographical area;
- ecosystem functionality;
- boundaries related to natural features rather than to political/administrative jurisdictions;
- the development of management plans at a strategic “network” level and at a local level for each SMPA;
- local communities should be engaged and citizens should be in the lead on decision regarding changes to be implemented;
- research and monitoring of coastal marine ecosystems should be promoted.

**7.4.** The following gaps were identified:

- more education and information are needed in relation to the legal and management options existing at EU level;
- more participation and communication is needed in particular among EU bodies and NGOs;
- more and better legal, financial and fiscal tools are required;
- major changes in culture are required with regard to certain sectors, which have the greatest impact on marine environment such as fishing, aquaculture, harbours and shipping, in order to reduce their negative impacts on the coastal zone.

**8.** In order to achieve these goals, the Workshop 4 formulates the following **recommendations** :

**8.1.** The EEAC should support the application of the Habitats Directive within the National Exclusive Economic Zones without questioning the international laws and conventions.

**8.2.** The European countries and Member States are called upon to work towards the establishment of MPA for the protection of biodiversity of the high seas, seamounts and deep seas.

**8.3.** The need to promote a special Directive on SMPA at the European level.

Sesimbra, Portugal, 5<sup>th</sup> of June of 2000

## ANNEX II

### INITIAL PRESENTATION

Mário RUIVO

*Ladies and Gentlemen, Dear Colleagues,*

1. The choice of the theme “**The Coastal Zones Sustainable Development Policies in Europe**” resulted both from the particular interest and sensitivity that Portugal, as the host country, has in this matter and, more importantly, from the attention given by the international “*fora*” to the issue.
2. The world has become increasingly more aware of the value and importance of the Oceans and Coastal Zones. This new awareness can be seen in several significant events that have occurred in later years, such as:

Chapter 17 of Agenda 21, approved at the Rio Conference in 1992; the approval, in 1982, of the United Nations Convention on the Law of the Sea and, subsequently, its coming into force in 1994; the OECD Council of Ministers Recommendations in 1992; the United Nations Resolution declaring 1998 as the International Year of the Oceans.

3. Portugal co-hosted the Independent World Commission on the Oceans from 1995 to 1998, when it presented its Report “**The Ocean ... our Future**”. The recommendations of the Report deserved a special reference during the following General Assembly of the United Nations.

Portugal also participated actively in the European Commission Demonstration Programme for the Integrated Management of the Coastal Zones (1997-1999). As a consequence of this initiative, we wait, with some anticipation, for the beginning of the elaboration of a Strategy for the Integrated Management of European Coastal Zones.

4. The present meeting was organised so that, taking a technical and scientific approach, we may reach conclusions that will help European Coastal Zones to benefit from a Strategy for Sustainable Development, based on integrated management of an intersectoral nature and taking into account all interest parties.

With their diversity of ecosystems, uses and interests, Coastal Zones are areas where conflicts arise and that run great risks. On the other hand, they are the interface between the Continents and the Ocean. Often considered as the “*limit*” or the “*margin*”, it is important to bring them into the very “*centre*” of our concerns, because of their intrinsic and strategic value. The Environment Councils can have here a useful role to play. The dialogue with civil society and governments and, on the other hand, the availability of information and the capacity for discussion give these organisation the opportunity to contribute to the normal decision making process. We can add to this the need to raise the experts and scientists awareness regarding the importance of their social function and the fundamental necessity of being active citizens.

To inform, provide incentives to public participation and contribute to the decision making process is, therefore, a challenge that the Environment Councils should take on and can, we believe, respond to.

The integrated management of Coastal Zones, fundamental for their sustainable development, depends on ensuring transparent decision making processes and an informed public opinion. Civil society should be encouraged to participate in the processes and should also be involved in the evaluation of performances and the fundamental monitoring systems which we must adopt and harmonise, at the European level.

Throughout the day, experts from the Councils and invited guests are going to discuss in workshops the various aspects of Coastal Zones' management and conservation. It is, however, essential that the Ocean be considered as a "*whole*". We must avoid having the sectoral and fragmented vision, which, unfortunately, has prevailed until now. We must take upon ourselves the concept of policy integration and, based on the criteria of sustainability, go forth and debate these issues.

Good work!

## The EU Role in Promoting Sustainable Development of the Coastal Zone

Bruno JULIEN\*

### Abstract

Sustainable Development has now been enshrined as an objective in the EC treaty and the philosophy is being built into the spectrum of EU policies, for all parts of the territory. The coastal zones provide a specific challenge because of their importance as an ecological, economic and social resource – and the ease with which this resource can be degraded. Between 1996 and 1999 the European Commission operated a Demonstration Program on Integrated Coastal Zone Management (ICZM), to identify how these areas could be most successfully managed. The results of the program are now being used to prepare conclusions and recommendations for a European Strategy for ICZM.

This Strategy will affirm the general principles for good management of the coastal zone, and discuss the need for action at all administrative levels, stressing that it is mostly at the local and regional levels that solutions should be found and applied. In view of the diversity of situations across Europe, there are no simple uniform solutions to the problems in the coastal zones, so the EU should not be too normative at this stage. Rather, the role of the EU should be primarily one of support and guidance.

Expected to be adopted in the middle of this year, the Strategy will outline a series of measures to be implemented at the EU level. While some of these will be new activities specifically designed to promote application of the ICZM approach within the Member States, the Strategy will focus on making better use of existing EU policies and programs.

Some of the EU policies which are key to ensuring sustainable development of the coastal zones include: the proposed Water Framework Directive, activities to promote sustainable tourism, the anticipated Directive on Strategic Environmental Assessment, development of the Natura 2000 network of protected areas, introduction of principles of participation and partnership into the regional development programs, initiatives to prevent repetition of marine accident, the promotion of multi-modal and sustainable transport, and expected focus on pollution sources in the upcoming revision to the Bathing Water Directive.

The coastal zones are complex areas of multiple use. Sustainable development in these areas is therefore also complex and requires the use of multiple instruments from different sectors. The good will and collaboration of all relevant administrations and stakeholders will be essential in ensuring that our coasts are properly managed.

### Introduction

This presentation will present an overview of the activity and policies of the Commission in the area of promoting sustainable development in the coastal zone.

It is useful to start by recalling that the Treaty of the European Communities, as last revised in Amsterdam, highlights “sustainable development” as one of the underlying objectives of the European Community. Article 2 specifically refers to this objective. Article 6 of the treaty goes further in mandating the “integration” of environmental concerns into all EU policies. The Treaty therefore clearly establishes the obligation for the European Union to address and promote sustainable development, and in particular, the requirement to use the tool of integration as one of the means of doing so. Of course, this obligation extends not just to the coastal zones, but to the entirety of the European territory.

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## **The Commission's Demonstration Programme on Integrated Coastal Zone Management:**

Over the past decade, there have been repeated calls for action by the Commission to promote sustainable development particularly in the coastal zone. This special interest in the coastal zone can be explained because of the strategic importance of the coastal zone, as an area of multiple resources – ecological resources, cultural resources, economic resources, and physical resources, including its attractive landscape. The calls to focus on the coastal zones also derive from the fact that these resources are facing pressures from multiple users in a limited space; as a result, in many coastal zones, the sensitive ecology is being destroyed, the social fabric is being eroded and the traditional employment options are disappearing. These interrelated problems are made particularly intractable by the complex set of overlapping responsibilities and jurisdictional powers for the coastal zone.

Following requests from the European Council and the European Parliament, the European Commission announced a Demonstration Programme on Integrated Coastal Zone Management (ICZM) in 1995. This programme was intended as a pragmatic step towards identifying the measures necessary to resolve the problems in the coastal zones of Europe. The Demonstration Programme was jointly managed by three services of the Commission (DG XI – Environment, DG XIV – Fisheries and DG XVI – Regional Policy), in recognition of the need for a multi-sectoral approach to concurrently address the various objectives of the coastal zone – environmental, economic, and social. The Programme has furthermore involved other services of the Commission and European agencies, particularly the services responsible for the production and supply of information and knowledge about the coastal zone.

The objectives of the Demonstration Programme were set out in Commission Communication COM95/511. This Communication states that the Programme would provide concrete, technical information about sustainable management of the coastal zone, and would stimulate a broad debate concerning both the technical components of ICZM and also the relative responsibilities of the various coastal actors. The intention was that the Demonstration Programme should lead to a proposal for a European Strategy for ICZM.

The Demonstration Programme consisted of a series of 35 pilot projects, across Europe. These projects were funded through existing programmes and budget lines, primarily LIFE-Environment and the TERRA programmes. The projects included in the ICZM Demonstration Programme were selected to represent the diversity of conditions (physical, cultural, institutional, economic...) in the coastal zones of Europe. While each individual project had its own specific goals in terms of addressing local needs and problems, all of the projects followed a similar general methodology. Each project started by assessing the state of their coastal zone (human activities, state of the physical environment and natural processes) and undertaking an analysis of the cause and effect relationships present. The projects then entered into a phase of “concertation”, where options were discussed and debated by all of the stakeholders. On the basis of the results of this debate, plans and programmes of action were launched, and results and experiences were disseminated.

If course, these tasks are not just a linear process. As the projects move into the implementation phase, we hope that they will go back and reevaluate the situation on the ground and the impact of new actions. Thus the process of ICZM is actually cyclical and should endure well beyond the 3 years of the Demonstration Programme!

However, in the course of the three years, the pilot projects already provided an amply supply of raw material from which to draw lessons. To facilitate our reflections, we commissioned a series of 6 thematic studies on the following themes:

- Legislation
- Participation
- Technical Solution
- Territorial and Sectoral Cooperation
- EU Policy
- Information

These studies analyzed the experiences of the 35 pilot projects, and the research components of the Demonstration Programme, to draw conclusions concerning the advantages and pitfalls of various approaches to ICZM. The reports of these studies, together with all of the other technical products from the Demonstration Programme can be consulted on our Web page at :

[europa.eu.int/comm/environment/iczm/iczm/home.htm](http://europa.eu.int/comm/environment/iczm/iczm/home.htm)

The primary lessons of the Demonstration Programme were compiled into two documents (also available on the Web page in various languages) entitled “Towards a European Strategy for ICZM: General Principles and Policy Options” and “Lessons from the European Commission’s Demonstration Programme on ICZM”, which were used as the basis for a broad consultation conducted in 1999. During this consultation, meetings were held for each Member States and written comments were solicited from any interested individual or organization. The purpose of the consultation was to elicit comments and suggestions concerning the EU’s role in promoting ICZM in Europe.

### **Defining a Strategy for the Future:**

On the basis of the experiences of the Demonstration Programme, and taking into account the ideas received during the consultation, the Commission has been preparing a new Communication. This policy document, which we hope will be adopted in the coming months, sets forward the Commission’s vision for a European Strategy for ICZM. While the final contents of the document are still under discussion, we expect that the Strategy will be aimed at promoting the implementation of 8 principles for good planning and management in the coastal zones, namely that coastal zone management should be based on:

1. A Holistic Perspective (Thematic and Geographic)
2. A Long Term Perspective
3. Adaptive Management, responding to new information and conditions, During a Gradual Process
4. Local Specificity
5. Working with Natural Processes
6. Participatory Planning
7. Support & Involvement of all Relevant Administrative Bodies
8. Use of a Combination of Instruments

The experiences of the Demonstration Programme confirm that the present, sectoral approach does not meet the planning and management needs for complex areas like the coastal zone. There is a need for structures or procedures to allow for cooperation and consultation between different government bodies and with the other stakeholders, to find commonly acceptable solutions. Such integrated planning and management is dependent upon an adequate supply of reliable and integrated information.

The Demonstration Programme has also illustrated that there is a hierarchy of responsibilities for the coastal zone, in which the local and regional administrations and actors form the corner-stone for integrated management. It is at the local level that concrete actions must be taken to resolve

concrete problems, while the regional level has an important role to play in providing a strategic context for local activity. The national administration must support this local and regional action through an adequate legal and regulatory framework, and through ensuring coordination between national ministries. The EU role should be one of leadership and guidance.

In view of these lessons from the Demonstration Programme, we anticipate that the future EU Strategy for ICZM might identify the need for EU action to:

- A) Promote ICZM Activity within the Member States and at the Meso-Regional Level
- B) Make EU Policies Compatible with ICZM
- C) Promote Dialogue Between European Coastal Stakeholders
- D) Develop Best ICZM Practice
- E) Generate Information and Knowledge about the Coastal Zone
- F) Diffuse Information and Raising Public Awareness

Any future EU Strategy for ICZM will acknowledge the diversity of conditions in the coastal zones of Europe, and will therefore adopt a flexible approach to encouraging action within the Member States. It will also be based on a philosophy of making the best use of existing Community policies and instruments, with the introduction of only limited new activities. This is coherent with the new Commission's emphasis on promoting good governance, in cooperation with the civil society.

### **Key Community Policies that Affect the Coastal Zone:**

In considering the role of existing policy areas, which influence the coastal zone, there are many policy areas, which might be mentioned. In order to introduce some of the areas of relevance, which will undoubtedly be discussed further during this conference, I would like to highlight nine policy areas:

The proposed Water Framework Directive: The Commission proposed this directive as a means of rationalizing and coordinating many of the existing elements of Community water policy. This directive will cover all water, ground and surface, including marine waters; it aims to achieve "good status" in all of these waters through river basin management. It enshrines a "combined approach" of emission limit values and quality standards, and through closer involvement of the citizen. It also aims to get the water prices right. It is hoped that this directive will be adopted this year; its implementation should have a major impact on the level of pollution arriving in the coastal zone.

Sustainable Tourism: Although tourism, per se, is not a Community competence, the Commission understands the importance of this sector, particularly in areas such as the coastal zone. It therefore is addressing the issue through other Community policies. In the context of promoting small and medium enterprises, the Commission has produced a series of studies on "quality" tourism, in which "quality" is defined to include respect of the environment. One of these studies is specifically focussed on the coastal zone. The Commission has also been working with the French Parks Association to develop a Charter on Sustainable Tourism in Protected Areas.

The proposed Directive on Strategic Environmental Assessment: This directive, which is presently in discussion in the Council and Parliament, would require assessment for all plans and programmes likely to have an impact on the environment. While not exclusively addressed to the coastal zone, SEA is an important tool for ICZM.

Natura 2000: Natura 2000 will be a network of areas designated under either the Birds or Habitats directive, and representing the most important natural areas in Europe. Although the areas are still being designated, it is clear that the network will include a large number of marine and coastal sites. These sites must be managed to ensure that the status of the relevant species and habitats does not

decline. However, the terms of the relevant legislation also take into account the socio-economic needs of the area and thus also seek to promote the broader goals of sustainable development.

Agenda 2000: The Community's new package of regional and rural policies explicitly promotes "balanced and sustainable development". The guidelines for implementation of the Structural Fund Programmes also now call specifically for partnership with other levels of administration and other stakeholders, and seek to promote an integrated approach through the requirement for a single programming document, and the obligation for consistency with other EU policies. These new emphases are completely consistent with the goals of ICZM; as the Commission gains experience from the latest round of regional and rural programmes, it will be in a position to further refine measures for the future.

Accidental Pollution: Following the Erika incident, there is a renewed concern across Europe about the problems of accidental pollution from marine accidents. The Community already runs a programme for exchange of information and expertise between the Member States, measures which help allow a rapid response when incidents occur. There is now a renewed priority being given to ensuring the best possible measures are taken for both prevention and clean-up.

Bathing Waters: The existing Bathing Waters directive is due to be reviewed shortly. The intention of the Commission is that the review should address the root causes of the pollution, rather than just addressing status. In this context, the review is expected to promote the ICZM approach to problem prevention.

Transport: Given the importance of the marine and coastal zones as transport corridors and connection points, the Community transport policy has a significant impact on the coastal zone. The Community's priority on promoting short sea shipping and multi-modality is a component in advancing sustainable development that respects the environment, while providing economic opportunities.

Fisheries: Fisheries is clearly also a key policy for the coastal zone. The Commission's recent Communication on Fisheries Management and Nature Conservation outlines its determination to ensure that European fisheries are made sustainable through a partnership with the environment, through ensuring the integrity of spawning areas and the maintenance of habitats that are crucial to fish populations. This in turn will help ensure the economic future of the sector and the livelihoods of many coastal residents. The upcoming revision of the Common Fisheries Policy will provide a further opportunity for the Community to take steps to augment the sustainability of its policy in this area.

## **Concluding Remarks:**

The above list of Community policies affecting the coastal zone, while far from being complete, illustrates the complexity of ensuring good management in the coastal zones. The problems are complex, the relevant legislation is multiple, the stakeholders are many.

Solving the problems of the coastal zone is not simple. The process of integrated coastal zone management provides a tool for improving its management and planning. However, ICZM is a tool that depends on the cooperation and involvement of all of the stakeholders. NGOs, citizens and administrations all have a role to play. All of the people or organizations who use or manage the coastal zone must be involved in solving its problems.

If we can work together to implement ICZM in the coastal zones, we will achieve much in protecting the environmental, economic, social and cultural resources of the coastal zone. We will also demonstrate how the process of better governance through integrated territorial management can help solve the problems of complex areas – a lesson that might also be applied to areas far from the sea.

## **Mediterranean Marine Protected Areas and Benthic Coastal Ecosystems Vulnerability**

Lucien LAUBIER\*

### **Marine protected areas**

In the early fifties, at the time of emergence of the concept of overfishing or overexploitation of fishing grounds, the settlement of marine areas of hundreds to thousands of acres where fishing was prohibited was considered as an efficient tool against fish stocks depletion together with other regulating measures such as seasonal fishing limitation and size or number of fishing gears. In those times, the natural resources conservation was not yet considered as far marine ecosystems are concerned, although terrestrial natural parks were developing in several countries. It is a wellknown fact that things one cannot visualize are not so important... Nevertheless, this concept of "cantonnements", as said in French, continued during several decades even if their impact on fish and shellfish stocks was not scientifically demonstrated.

The growing progresses of marine coastal benthic ecology and population dynamics since the 2<sup>nd</sup> world war strongly linked with the promotion of scuba diving techniques in the general public, soon gave birth to the concept of subaquatic tourism. The fascinating beauty of the coral reefs from the tropical oceans, revealed among others by the famous widespread movies and video tapes of Captain J.-Y. Cousteau's group since the sixties, strongly contributed to the public awareness of submarine beautiful landscapes. The need to protect some of these underwater landscapes from man activities soon appeared following this awareness.

### **The Mediterranean example**

Within the Mediterranean area, where modern scuba diving technique was invented as early as 1942, one of the first natural marine reserves is the "Réserve naturelle de Banyuls-sur-Mer/Cerbère" located on the French coast near the Spain boarder. This reserve extends off capes l'Abeille and Rederis, up to 40 meters depth, and includes one of the largest continuous coralligenous assemblage of the French coast (LAUBIER, 1966; SARTORETTO, 1996). The reserve is established under the French regulations.

In more recent times, the Barcelona convention of 1976 is at the origin of the concept of Specially Protected Areas, which was formally adopted at Geneva meeting in 1982. In the latest convention of Barcelona (1995), a new protocol, called the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean, was conceived as a tool for the practical implementation at regional scale of the most recent concepts and international legislation concerning in situ conservation (European Environment Agency, 1999). Within this protocol, it was decided to establish a list of Specially Protected Areas of Mediterranean Importance (SPAMI) that:

- are of importance for the conservation of the components of biological diversity in the Mediterranean;
- contain rare, unique ecosystems and rare or endemic species in the Mediterranean area;
- contain the habitat of endangered species;

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- are of special interest at the scientific, aesthetic, cultural or educational levels.

Related measures include protection and conservation of species, regulation of the introduction of non-indigenous or genetically modified species and environmental impact assessment of projects or activities likely to affect protected areas.

There are more than 120 SPAMI in the Mediterranean region; 45 of them are covering marine areas, either exclusively (15 SPAMI), either mixed between land and sea (30 SPAMI), with different national legal status and different uses, including 2 game and fishery reserves.

These marine SPAMIs have in common the aim of conservation, which can be oriented towards different specific goals. From totally protected areas to fishery or game reserves, the options are multiple. The fact that national regulations are not identical increases that diversity.

Nevertheless, marine SPAMIs are expanding rapidly and some general comments can now be proposed.

From the administrative point of view, the question of the authority (ies) in charge of the SPAMI is a key question. Different national statutes make more difficult to establish a network of these areas that could be an integrated system providing new answers to traditional problems.

A network of SPAMI should consider as priorities the issues of biodiversity conservation (in terms of species, assemblages and submarine landscapes biodiversity), natural landscape including geomorphology and sites protection. Socio-cultural heritage associated with traditional activities such as artisanal fishing, shellfish industry, small boat building, should also be taken in account due to their economic importance for ecotourism. Such a combination may look like an utopia!

Apart from the scientific community, there are at present two major users of the SPAMI and their vicinity: the artisanal fishermen and the subaquatic tourists. Their socio-economic importance is strongly unbalanced in favour of the latter, since the unprecedented development of scuba diving in the general public. They both need to be associated in a way or another with the operational management of the SPAMI.

In a majority of examples (30 SPAMI within a total of 45 including a marine part), the integrity of the land-ocean interactions is illustrated by the continuity of the protected area on land and sea. National statutes and regulations may promote or limit such a natural concept.

Several technical questions are also to be considered at both general and specific levels: determination of the minimum size of a SPAMI is not the easiest one! Parallel to that is the choice of the limits: they should be operational and easy to use for all customers (i.e. alignments) instead of being more theoretical (i.e. bathymetric contour lines).

## **Scientific approaches**

Mostly in the western Mediterranean basin, scientific communities have begun to analyse the structural and functional consequences of SPAMI on marine benthic ecosystems, mainly the rocky assemblage, the *Posidonia oceanica* meadow and the coralligenous formation. A recent comparative study of different SPAMIs has been achieved as a concerted action in the framework of MAST 3 specific programme of European Framework Programme 4. This concerted action entitled ECOMARE grouped a dozen of Spanish, French and Italian research teams, around thirty scientists, and analysed a series of SPAMIs in Spain, France, Italy and Tunisia. The main objectives were as follows:

- Designs of conceptual model of the effect of protection in littoral ecosystems;
- Carry out critical analysis of available knowledge on variables and processes identified in conceptual model for Mediterranean ecosystems;
- Standardization of working methods.

After a three-year period of work together and several seminars, the participants have recently identified (Marseilles, March 2000) two major objectives for further cooperative research:

- Monitoring as assessment of community level changes in SPAMIs; this objective includes two complementary parts: (1) indirect (cascade) effects on food-web, and (2) changes induced by human activities;
- Evaluation of SPAMIs as management tools for the replenishment of depleted populations; development and testing of methods for assessing biomass export; this objective includes three complementary parts: (1) eggs and larvae dispersal and recruitment, (2) density gradients, for adults and juveniles and (3) home range and migrations.

The so-called "cascade" effect is often described on the Mediterranean example of the following food chain: fish - sea urchins - algae (SALA et al., 1998). The increase of fish population and biomass generates a reduction of the population and biomass of sea-urchins which, in turn, permit an increase of algae; interestingly enough from the point of view of biodiversity, another example of food chain, fish-eating fish/fish/invertebrates, is lesser known, due to several difficulties among which, in the Mediterranean, the high specific diversity of the benthic invertebrates!

The replenishing role that SPAMI could play on depleted populations of commercial species is an interesting approach to the above "utopia". It is most probable that eggs and young larvae dispersal from a given SPAMI in the vicinity of the reserve will not significantly contribute to the enhancement of depleted populations: the long term efforts in view of restocking the sea achieved by several north Atlantic countries from 1880 to 1920 (SHELBOURNE, 1968) have demonstrated the limits of such small increase in number of the most critical stage of the biological cycle. Nevertheless, recruitment in the vicinity of the SPAMI could probably be enhanced by appropriate structures providing more adequate protection for the juveniles during the critical period. Parallel to that, the "boarder effect" often reported by fishermen who record an increase of fish production in the vicinity of the SPAMI limit, need to be better understood in terms of home range and migration of the concerned species.

Beyond these research objectives, several other questions need to be experimentally tested. One of them is clearly the minimum efficient surface needed for a reserve area, whatever the objective could be. In other words, is the relationship between reserve size and intensity of expected effect linear or non-linear? Linked to this problem, the concept of series of small reserve areas connected by appropriate width communications has never been tested in the marine environment. It could be of interest for protection of large species of commercial fish such as the groupers.

Last but not least, the natural variability at a regional scale could make difficult to statistically interpret large-scale in situ experiments.

From the socio-economic point of view, one of the major questions is the level and way of involvement of the different categories of customers; artisanal fishermen and underwater tourists have clearly not the same interest. Nevertheless, they both should participate to the choice of management measures.

## Climate anomaly and marine coastal ecosystems.

Mediterranean SPAMI are generally located in areas where industrial discharges, urban sewage and agricultural drainage are null or minimum. Still, they are vulnerable to large-scale natural changes. An example of such natural change and its consequences on several large species of sessile invertebrates has recently been recorded in the north western Mediterranean, during summer 1999.

The geographical range of this event extends on some 500 kilometers of coastline, from Argentario in Italy to Marseilles in France. The major impacted sessile invertebrates were mainly sponges (*Ircinia*, commercial sponges *Spongia* and *Hippospongia*) and anthozoans, gorgonians, red coral and scleractinians (*Paramuricea clavata*, *Eunicella cavolinii*, *Corallium rubrum*, *Cladocora coespitosa*). Mortality occurrence was up to 80% of the individuals in several localities (PEREZ et al., 2000). The bathymetric range of the mortality event extends from the surface up to 35 to 45 meters, with a high local variability. Such mortality event has not been recorded in southern locations, such as Italian coast south to Argentario or Corsica, nor in western ones such as the Catalanian coast.

Although the general water masses circulation in the north of the western Mediterranean flows anticlockwise along the slope from east to west (MILLOT, 1991), early hypothesis of a sudden pollution carried westward by the Northern Current was soon rejected: the impacted invertebrates did not contained abnormal level of contaminants; moreover, the impact was identical in confined areas (small bays) and at the end of major capes, although dilution and diffusion on several hundreds of kilometers should have been very important. In fact, this mortality event appeared to be of a regional or zonal scale.

A careful analysis of available meteorological data in Marseilles area for wind velocity and direction during ten years (1990-1999) showed that Summer 1999 was characterized by north-west wind periods of shorter duration than in previous years, although of similar velocity. Records of water temperature in Marseilles area, between 0 to 50 metres depth, showed another feature directly related to the feebleness of north-west wind in Summer 1999: the summer thermocline never came to the surface during this period, but progressively sunk up to 35 to 45 metres depth (fig. 1). In the mean time, the surface layers temperature went up to 23-24°C and kept such high values during at least two months (ROMANO et al., 2000).

The combination of high temperature value during abnormally long time of exposure was directly or indirectly responsible for the death of billions of sessile invertebrates unable to move in deeper and colder waters. To better understand the importance of these conditions, it should be underlined that in average years, sea surface temperature during Summer falls to 17°-19°C during 2-3 days following north-west wind gust; and this sometimes occurs twice during the Summer months.

The impacted sessile invertebrates are probably affording the upper limit of their thermal tolerance, which is not surprising if one recalls that they were used to live at temperatures between 10 to 18°C some 20,000 years before present. Their low dynamics (purple gorgonians of 0,5 meters high are some 50 years old) compared with a fast increase in temperature might explain that these invertebrates reach their higher limit of thermal tolerance; in such a situation, a small increase of temperature value or of exposure time could lead to lethal consequences, either directly, either by triggering the virulence of some micro-organisms (such an indirect effect of temperature has recently been demonstrated in the case of a *Vibrio* living in the tissues of a scleractinian recently introduced in the Mediterranean, *Oculina patagonica*, see KUSHMARO et al., 1998).

The socio-economic consequences of such an event are of a great importance: the species impacted, in particular the large purple and yellow gorgonian *P. clavata*, are amongst the most beautiful

species of the Mediterranean submarine landscapes, living on rocky substrates and coralligenous blocks between 15-20 to 50-60 meters depths. The subaquatic tourism, mainly developed (nowadays in the Mediterranean Sea in the north western part, can well be affected by the bad news coming from the impacted areas and widely disseminated through newspaper and professional journals (Medonnes, 2000). Around the sole Portofino Promontory, 90 diving clubs operate yearly some 150,000 dives. The Medes rocky islands facing Estartit in Spain host 65,000 dives per year, and the Riou Archipelago south of Bay of Marseilles 20,000 dives per year. Economic data behind those figures are not yet available, but it is clear that subaquatic tourism has become an activity as important as coastal fishing in numerous Mediterranean regions.

Possible remediation action could result from genetic analysis of impacted populations and individuals: the local and regional individual variabilities that have been recorded during the 1999 Summer event could well be partially based on different genetic adaptation to environmental parameters such as temperature. If it were the case, then resisting individuals could be used as propagules to restore impacted populations on the long-term.

I thought interesting to recall that human activities are not the sole mechanism responsible for marine ecosystem changes. Climate variability is in fact the ordinary mechanism by which populations and ecosystems evolve and change with time. Due to the recent climatic history of the Mediterranean, its coastal ecosystems offer good examples of natural crises linked with meteorological anomalies. Within the range of depths (0-50 meters) and distance from land (a few hundreds meters to 1-2 miles), data from networks such as the Global Ocean Observing System are completely irrelevant, due to the time-space scale needed and the variability produced by both aerial and submarine topographies, winds and marine circulation. Such monitoring systems are just at their beginnings and should be greatly improved if we want to be able to anticipate similar phenomena.

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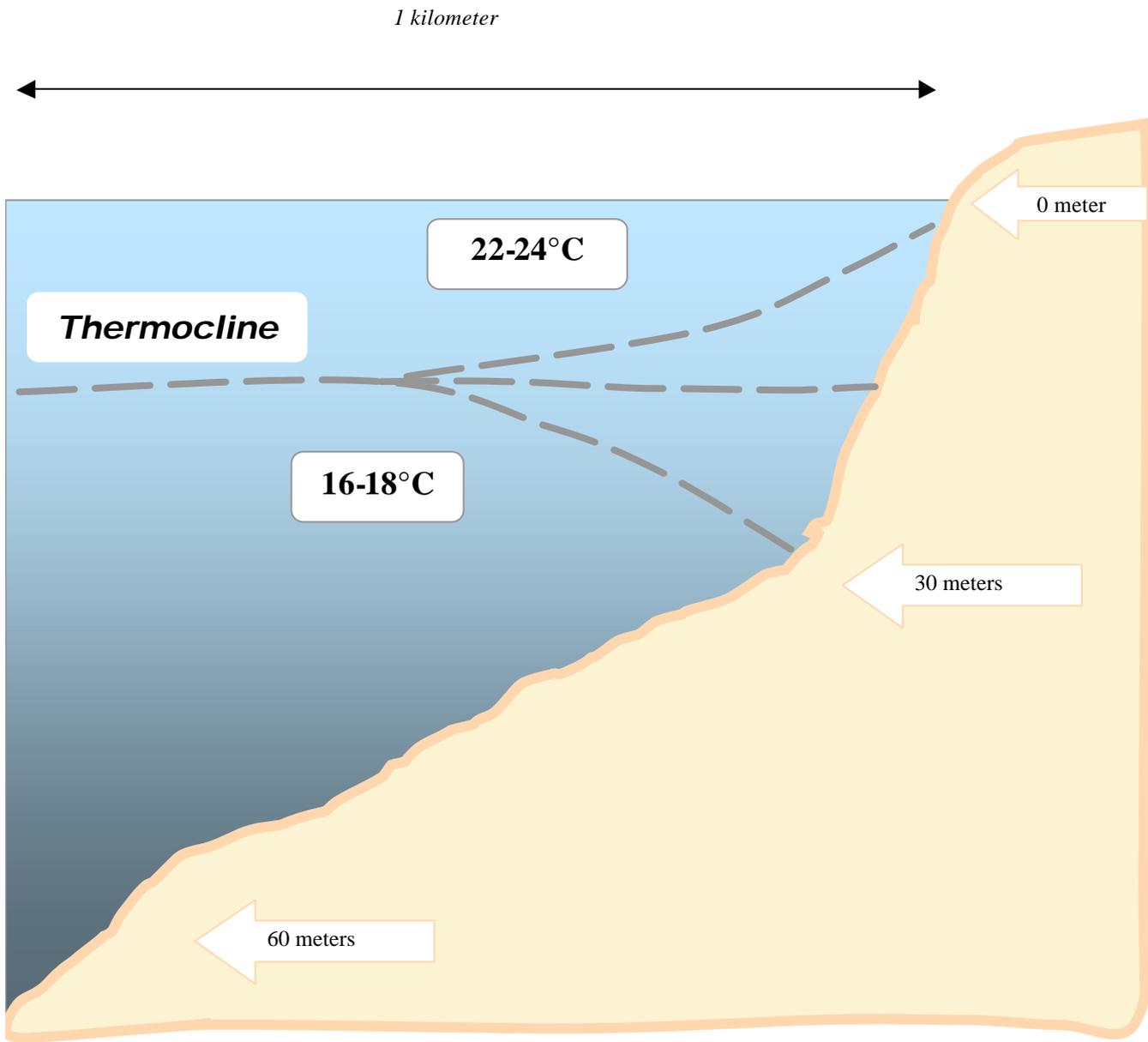


Fig. 1. - Schematic representation of different thermocline patterns induced by coastal winds.

## **Towards a Sustainable Europe: Benchmarking Tourism Sustainability**

Domingo JIMÉNEZ-BELTRAN\*

The importance of tourism for economic activity, as promoter of development and employment, has been widely recognized for some time, as well as the value of a preserved environment for sustaining tourism growth. However, it is fair to say that numerous marriages between tourism and environment have collapsed: in many places in Europe, the environment has been badly treated by tourism. Examples of famous destinations that have exceeded their carrying capacity for tourism activities are by now too numerous not to express a general trend.

This has been regarded for too long as mainly a problem of local management of the resources, including environment, for tourism development. However, tourism has meanwhile transformed into a huge international business line and is now becoming the first service activity in Europe in terms of contribution to gross domestic product. The fact that tourism is the main driver to transport/energy use and therefore largely contribute to transport related problems in Europe is also striking. Tourism has therefore a crucial role to play in the process of sustainable development, which is very much a common business to all of us. Indeed, sustainable tourism is not only a matter for those who, in the destinations, welcome the tourists: the roots of tourism activities lay in the privileged consumers we are.

So far, the absence of appropriate information on the linkages between tourism and environment, at the European level, has largely hampered early awareness on the shared responsibilities of the various actors of the tourism sector, and hence the policy enabling process. We are still lacking both, largely. But things are moving and there is now opportunities to develop hand-by-hand with the policy approach the relevant information provisions. In 1999, while discussing the Commission's communication "Enhancing Tourism's Potential for Employment" the Council of (Internal Market) Ministers recalled the importance of better integrating the needs of the tourism sector into other Community policies and invited the Commission and the Member States to work together on a number of priority issues among which promoting environmental protection and sustainable development in tourism.

The political objective is given: integrating sustainable development principles into tourism development plans and strategies. This was considered as among the priority work areas to be addressed, because of the significant actions undertaken under a number of Community programmes and policies. Among these, the working out of strategies for integration of environment into specific sectoral policies such as transport, as well as the setting up of reporting mechanism to benchmark E.U. progress towards sectoral integration, have been asked by the Council in 1998 and 1999. One of the aims is to develop regular indicator-based reporting through which the environmental performance of the specific sector and the progress made towards integration can be monitored. The indicator reports will be complemented by technical studies and focus reports on specific policy issues such as employment considerations.

Although tourism has not been so far targeted at in this process, the ambition of the European Environment Agency would be to lay the grounds for a 'Tourism and Environment reporting

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mechanism' at the European level. We might be helped in this approach by the French government who is considering financing partly the work.

The attached presentation provides the context for developing such information, as well as first proposed indicators. We should give it a try.

## Workshop Sessions

### **WORKSHOP I: INTEGRATED MANAGEMENT OF OFF-SHORE AND LAND-BASED ACTIVITIES (ANNEX VI)**

**CHAIRMAN: PETER BURBRIDGE**

**RAPPORTEUR: MÁRIO BAPTISTA COELHO**

**PARTICIPANTS:** Ülle VAHT; Rein KOOPMANS; Teun KLUMPERS; Lucien LAUBIER; Filipe DUARTE SANTOS; M. SCHULZ-BALDES; Jan DeSMEDT; Tadas NAVICKAS; Peder AGGER; H. WOHLMEYER; David LEWIS; Baroness YOUNG OF OLD SCONE; Jorgen PRIMDAHL; Ronald FLIPPHI; Henk van LATESTEIJN; Simo ISOAHO

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### **The Slovenian Coastal and Karst Region: Istria and Karst, the environment and developmental Views**

Franc LOBNIK\*

#### **Abstract**

The Northern Adriatic Sea, Istria and Karst sustain an important part of Slovenian natural and cultural heritage. Mediterranean agriculture is typical for these areas: vineyards, fruit, vegetables, olive trees, salt works, commercial sea fishing, and aquaculture. The cultural and traffic roles of these areas are important; the Koper Port opens the seaways to the world and to Europe. The sea and the coastal areas are important for tourism. With accompanying economical activities, the Slovenian Istria and Koper are developing into the third developmental pole of Slovenia!

The landscape lures new settlers, and the coastal areas are getting increasingly urbanised. This causes environmental problems (sewage water pollutes the sea). Greater concern for the marine environment is displayed by activities, which depend strongly on clean sea water and natural equilibria such as fishing, salt works, aquaculture and tourism.

Environmental burdens in all communes are significant. They share the following administrative problems: Most of the communes do not have enough authority, funds or infrastructure to control and diminish the impact of tourism and terrestrial and marine traffic on environment. Environmental programs are not in force because they need to be co-ordinated on regional and state level. Also, environmental legislation is incomplete, as are the monitoring of the environment and preventive measures. The lack of physical planning already inhibits the development of towns, which is felt especially in city of Koper and its surroundings.

We need to protect the exceptional natural and cultural heritage of the classical Karst area such as speleothem filled caves, deep chasms, sinkholes and dolinas, and the unique cultural landscape with rock fences and numerous signs of thousands of years of human endeavour to preserve the scarce fertile soil amidst karstic rocks. New settlements cause the disappearance of unique cultural identity of the Karst area. Should we leave it to modern forces such as expansion of highways, terminals, concrete platforms and suburbs in our coastal areas?

The co-ordination of economical possibilities and developmental goals. Harmonisation is not simple, because two different processes are involved: the decrease of present burdens and the development without additional environmental burdens. The polluters that caused existing problems may be difficult to identify; some of them may not exist anymore. It is also difficult to separate the effects of different factors. Also, the environmental assignments of local government and state agencies need to be defined separately from the assignments of industry and service industry.

Slovenia should invite its neighbour states to co-operate in environmental programs, research projects and higher education. Through goal-oriented programs, the environmental research projects required by the law for environmental protection and the regulations of the European Union should be completed as soon as possible. The Slovenian Environmental Protection Council should play important role as a mediator used EAC as source of experience from different European councils.

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\* President of the Council for Environmental Protection of the Republic of Slovenia

## **Building Activities in the Coastal Zone Area: A New Challenge to EU Policymaking.**

Henk VAN LATESTSTEIJN\*

### **Abstract**

The coastal zones of Europe are facing a new development that might easily lead to the next threat to this fragile environment. As a result of growing opposition against high-risk activities on land sites, several attempts have been made in recent years to shift these activities from the land to the sea. In the Netherlands we have seen attempts such as setting up a 300-meter high radio antenna, constructing a full-scale island to facilitate an international airport, and most recently a large-scale offshore windmill park to produce sustainable energy. The problem related to these activities is that decisions are made on a case-by-case basis, whereas the consequences of these decisions may lead to a new pathway in development that was never fully debated. Without proper discussions on the potential impacts of this development policymakers and the public are not able to form an opinion about these matters. In stead, the lack of proper regulations and the concept of *Mare Liberum* by Hugo Grotius open the gate for a series of unbridled activities where the coastal zone is looked upon as a vacant industrial area that is in need of development.

This potential threat should be addressed at the level of the EU. Actions by individual member states may redress local omissions in regulations, but with increasing possibilities in offshore technology the pressure to invade one of the last wilderness areas in the EU will be immense. Only a concerted action at the level of EU Ministers of the Environment will mobilise enough leverage to fully address this risk.

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## Management of the Coastal Zone in Denmark

Peder AGGER\*

### Abstract

Denmark today is, in geographical terms, a peninsular and approximately 900 island. This explain the high coastline to area ratio of 165 m/km<sup>2</sup> and coastline per inhabitant of 1.4 m. No site in Denmark is more than 52 km from the coast. So the whole country can be considered as coastal zone.

The tide is only more than 2 meters at the SW-coast of Jutland, but much less in the inner waters and negligible in the Baltic Sea. Wind and wave exposure, current, salinity, depth and substrate vary considerably. The Danish coasts are thus among the most varied both from a physical, morphological, geological and biological point of view.

The natural coastline of 8,500 km is the most coherent and largest nature area in Denmark. The varied areas with shallow water protected from waves and usually free from ice-cover during winter are important for large numbers of migratory, wintering and roosting birds. 28 species appear regularly in concentrations classified as being of international importance and responsibility species.

The coast has however been shortened by 1,162 km due to land reclamation, which also has reduced the shallow water within 2-m depth by one fifth and the number of islands by 180. Today further reclamation has stopped. The major threats now being a) further urban sprawl along the coast, especially summer cottages and the disturbance from these, b) eutrophication of all habitats not least the coastal waters, c) shooting of water birds, d) oil pollution, and e) disturbance from recreational boating.

Since 1992 The Planning Act and The Nature Protection Act have stated a ban on all non-primarily dependent constructions incl. housing within 3 km from the coastline, and no constructions at all within 300 m along all coasts outside the urban zones. Since 1987 an action plan for the aquatic environment has been in force, aiming at a 50% reduction in the outlet of nitrate and 80% of phosphorous. While the target has been achieved for the latter, nitrate was after 10 years only reduced by 14%. Therefore a new action plan was adopted which postpone the target for nitrate another 5 years.

The pressure on the coastal zone is still growing and the existing regulation is increasingly insufficient. There is a need for a more coherent management, which is spread out among 28 different acts and statutory orders and a dozen of different ministries and governmental agencies. There is also a need for a better co-ordination with the activities in the hinterland as well as further offshore.

The European Commission has with its important initiative reviewed a number of ICZM-programmes and here pointed to the need of policy initiatives at higher levels and guidelines and strategic action at the national level. So although the policy vacuum at higher levels recently have been filled out, Denmark has still not implemented the other of the two main lessons learnt.

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\* Danish Nature Council

## **A Study to Assess the Options for Achieving the Strategic Management of the Wales Territorial Seas.**

Chris UTTLEY\*

### **Abstract**

The impetus for this study arose at the 1999 conference of the Wales Coastal Forum, where the consensus of opinion was that there was a need to improve the planning and management of activities in the Welsh territorial Sea. Conference proposed that the management of the marine environment should be based on the principles of sustainability, transparency, democratic accountability, administrative efficiency and a holistic approach. The study underway will identify options for changing the current system of management to deliver the principles outlined above.

The present system for control of planning and development below mean low water is a mixture of sectoral control and consultation with agencies. Whilst this type of approach reflects the complex historical nature of maritime industries and allows decisions to be made by those with specialist knowledge, there are also several disadvantages. The most apparent of these is a lack of strategic or unified planning for maritime development and activities, which in turn discourages a sustainable approach, and a lack of openness in decision making.

The study looks at several case studies of major activities and developments within Wales and defines the strengths and weaknesses of the current system with respect to what happened in each case. A second stage of the study analyses the systems for management of marine activities within other countries particularly focussing on the 1. Extension of development planning control to offshore (Sweden), 2. Multi-sectoral zoning (Portugal) and 3. Community based offshore resource management (New Zealand).

A further part of the study takes account of the views of major statutory and non-statutory organisations within Wales through the use of a questionnaire, a series of personal interviews with the organisations and a workshop (to be held) where the options for changes will be debated.

Two attempts at integrated management in Wales are also assessed. These are based upon 1. The development of management schemes for marine Special Areas of Conservation, identified under the 1992 EC Habitats Directive, in which decision making is based upon a cooperative approach, and 2. A review of the effectiveness of estuary management initiatives. The assessment of these again identifies advantages and disadvantages found within both schemes.

The options for changes to the current system include a discussion about changes to control of development and planning changes to primary and secondary legislation, changes to government policy, the creation of a new authority and the integration of decision making between sectors.

The study will identify a favoured option for change that can deliver territorial sea management within the framework of the principles outlined at the conference. It is hoped that the findings of the study will stimulate debate amongst the community of statutory and non-statutory organisations responsible for management of the Welsh territorial seas and will focus this debate on key areas identified throughout the study.

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## The Swedish Archipelago Project

Siv NÄSLUND\*, Helena BERGSTRÖM\*

### Abstract

Sweden's seas and archipelagos are unique. They embrace a wide range of ecosystems and plant and animal biotopes. The natural beauty, the distinctive cultural heritage and the variety of archipelago landscapes make them very valuable for outdoor activities and recreation. But there are several threats hanging over the sensitive water environment in Sweden's archipelagos, and the coastal zone is a zone where conflicting interests compete for the right of use.

The Government has therefore instructed seven county administrative boards to make resource management programmes for their archipelago areas. The counties presented the programmes in January 2000. The programmes are action programmes designed to achieve ecologically sustainable development in the archipelagos. The programmes were developed in co-operation with municipalities and local organisations. The county administrative boards have also been consulting the competent authorities and have actively promoted interaction with local Agenda 21 programmes.

According to the terms of reference, the environmental and resource management programmes are to include

- concrete action to address environmental and resource management problems in the various archipelago areas in a manner that is satisfactory from an environmental point of view while taking into account the need of employment and growth
- an analysis of the feasibility of implementing existing legislation on the use of land and water resources, environmental protection and the protection of natural and cultural heritage values
- an analysis of the archipelagos' economic potential and eligibility for development aid, including EU aid, for ecologically sustainable solutions
- a coherent programme for treatment of the area's environmental and resource management problems in regional and local planning with a view to achieving ecologically sustainable development.

The Government has instructed the Swedish Environmental Advisory Council to follow up and support the county administrative boards' work on these programmes. The Council is also instructed to evaluate the programmes and, where necessary, propose further measures. The evaluation is to be completed by August, 2000.

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## Sustainable Development Policies for the Coastal Zone in Scotland

Dr Stephen ATKINS\*

### Abstract

1. The Firths of Scotland are high natural heritage value, high resource use coastal areas. They comprise sheltered inshore waters usually associated with large estuaries and a diversity of ecosystems. They are nutrient and biodiversity rich with high quality coastal and intertidal habitat and scenic landscapes. Sections of all the firths offer sites, which are important at the EU scale and contribute part of the Natura network of SAC and SPA.
2. Firths are also the focus for human use and development in Scotland. A large proportion of the urban, agricultural, ports, industry, fishing and other economic development of the country are situated around the Firths. The land and sea scapes attract high levels of resource use for recreation, leisure and tourism.
3. Since 1992, SNH has taken a lead role in Scotland in developing 7 major non-statutory ICZM projects covering the most actively used estuaries, adjacent coasts and inshore waters of the coastline. Over half the Scottish coastline has been placed under some form of ICZM. These projects aim to achieve consensus among stake-holders on the implementation of sustainable, integrated strategies for planning, management and co-ordination of all off-shore and land based coastal activity. Activities which are covered by the 4 ICZM strategies already published and now under implementation include:
  - all aspects of land use planning and development,
  - coastal erosion and defence, including 'shoreline management planning' and management of the impacts of current trends in climate change,
  - chemical pollution and eutrophication,
  - waste management,
  - port developments and shipping,
  - tourism and recreational activity,
  - conservation of natural resources such as biodiversity and natural habitat,
  - the exploitation of marine and coastal resources by fishing and aquaculture.
4. This paper/contribution will review institutional issues arising from the existing mechanisms for coastal management currently in place in the UK and discuss the need for a new institutional framework. It will suggest a role for the European Commission in stimulating more effective coastal management.
5. The paper will report experience in using ICZM programmes as a foundation for other resource management programmes including:
  - the use of ICZM partnerships to facilitate the development of schemes of management for marine protected areas such as marine SAC under the Habitats Directive,
  - the use of ICZM partnerships to manage and limit the impacts of eco-tourism enterprises such as dolphin watching in the Moray Firth SAC for 'Bottle nose dolphin'.
6. The paper will offer early thoughts on how ICZM will provide a foundation for the implementation of the water framework directive by providing long term partnership experience to new water catchment management institutions. The work already completed by ICZM programmes will provide useful best practice experience for the integration of coastal waters into river basin districts and the sustainable use of estuaries.

### Summary

1. This paper will review
  - The importance of the coastline in Scotland,
  - Sustainability issues on the Scottish Coastline,
  - Solutions under development,
  - The role of Integrated Coastal Zone Management and its achievements,
  - The role which Europe could play to support sustainability for the coast in Scotland.

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## The Importance of the Coastline in Scotland

1. In some respects, the coastline may be more important to Scotland than to other member states. The coastal length of 12,000 km of coast is greater than that of the rest of the UK and one of the longest of any European country. The ratio of 1 km of linear coast to 7 km<sup>2</sup> of land area is the lowest in Europe and the proximity of the coast to all parts of Scotland gives a strong maritime influence to much of the character, economy and culture. The unique features of the Scottish coastline include:
  - The extent of remote and wild coastline.
  - The high economic dependence of local communities on the coastal resource.
  - Increasing coastal erosion and expected sea level rise.
  - The high pressure and competition for natural resources e.g. from aquaculture, fisheries, tourism, recreation, alternative energy,
  - The unique characteristics and resources of Sea Lochs.
  - The high landscape and conservation value.
2. The coastline is diverse and has a high natural heritage value. It is indented by large rivers and estuaries with associated mud-flat and salt-marsh habitat mostly in the east and south. There are dramatic cliffs, sea lochs (fjords), and islands mostly in the north and west with rocky shores, shingle and sand dune habitats. The warm sheltered coastal waters on the west support an exceptionally high biodiversity. Much of the coast is identified as important at the European scale as SAC and SPA. The remote and wild character of Scotland's coast gives it a high landscape value, which would be impacted, if subjected to much additional development.
3. Most of Scotland's population lives on or close to the coast and the majority of macro-economic activity (oil and gas exploitation, ports and harbours, offshore fishing and fish processing, Naval activity, tourism, leisure and recreation) in Scotland takes place there. The coast is of particular interest to niche tourist markets, such as eco-tourism, wildlife watching, sailing, water sports, 'expedition' holidays on land and sea.
4. Many small communities in remote areas of Scotland are dependant on the coast for small scale economic activity such as inshore fishing, salmon farming, shellfish growing, tourism, leisure and recreation scattered around all the coastline.

## Sustainability issues on the Scottish Coastline

5. The issues which need to be addressed can be summarised under the following headings
  - Development pressure,
  - Conflicting interests,
  - The institutional problem of a lack of overall planning or development control below the low tide level and the multiplicity of sectoral statutory and non-statutory plans and functions,
  - Erosion, sea level rise and coastal defence.
6. **Development pressure:** Current proposals which could impact the Scottish coastline include oil and gas exploration and production; offshore and onshore infrastructure including ports, pipelines, and oil rig supply; new sites for aquaculture; recreation developments; ports and shipping and waste disposal.

- 7. Conflicting interests:** Even if activities in the coastal zone do not actually compete, the perception of local people is often that they do and therefore, management solutions are required. Coastal activities may actually or potentially compete include:
- salmon farming and shellfish farming,
  - salmon farming and wildlife,
  - naval activity and wildlife watching,
  - fishing and recreation,
  - fishing and wildlife,
  - development and natural habitat,
  - coastal defence and natural heritage interests,
  - local interests and European marine site development.
- 8. Institutional issues - the absence of overall integrated planning or development control below the low tide level:** This is the main coastal institutional issue in Scotland. UK Town and Country Planning legislation, and therefore most Local Authority jurisdiction, stops at the low tide level. All developments and activities must, therefore, be regulated by sectoral plans and policies. In the past there has been no overview and little integration between sectoral interests, leaving a planning vacuum in coastal areas. In towns or other developed areas there is continued loss of coastal natural resources resulting from uncoordinated sectoral policies and activity.
- 9. A multiplicity of sectoral statutory and non-statutory plans and functions** apply around the Scottish coast. Examples are: Shipping regulations, Law of the Sea, Oslo Paris Convention, EU Legislation on discharges and pollution and UK Wildlife legislation which only extends seawards to the low tide level. At the local level there are bylaws and health and safety regulations for many activities. Development around the coast in the UK is controlled and licensed under legislation. A quasi public body with commercial objectives owns most of the sea bed around the UK coast, and leases areas for activities such as fish farming and aggregate extraction. This general institutional issue has, for example, allowed excessive growth of fish farming around Scotland's coast with consequent impacts on water quality, amenity, spread of disease, damage to the wild stock of salmon and sea trout including genetic damage.
- 10. Erosion, sea level rise and coastal defence:** Latest research predicts sea level rise to be up to 1 cm. per year over the next 50 years in parts of Scotland. Coastal defence is an increasingly contentious issue impacting prime agricultural land, transport links, urban areas and recreational areas such as golf courses. There is no agreed approach to coastal defence in Scotland and there is a need for a more strategic approach to shoreline management planning.

## **Policies for sustainability**

- 11.** A variety of overlapping environmental management initiatives have been developed in the 1990s to address the widely perceived need for new mechanisms to address coastal environmental issues. This section will briefly introduce some of those, which are being or will be applied in Scotland.
- 12. Integrated Coastal Zone Management:** SNH took a lead role in initiating, advocating and funding ICZM in Scotland in 1992. Since then 7 large scale projects have been initiated, putting a total length of more than 6000 km or over half the coastline of Scotland under some form of ICZM. All these projects have used a voluntary partnership of all interests to appraise the management issues for their area and develop an integrated management strategy. Five of the projects have received EU support through a variety of financial mechanisms. Four projects have

management strategies agreed by partners in place and implementation has commenced. In some cases the objectives of the management strategies are now being incorporated into the statutory plans of local authorities which should help to address the institutional issue of a planning vacuum below low water.

**13.Scottish Coastal Forum:** This is a national scale partnership set up in 1997 in recognition of the need for a national overview of coastal issues in Government. Like the local fora, it is voluntary and made up of representatives of the major coastal interest groups. Its wide representation has given the SCF a high level of influence on coastal policy in Scotland and it has a role in briefing parliamentary committees on coastal issues. SCF also has a remit to develop a Scottish coastal strategy, promote ICZM for areas where it would bring benefits and support the work of local ICZM projects.

**14.Natura 2000:** Most of the larger estuaries, firths, important sea cliffs and other sea bird habitats, have designated Special Protection Areas under the Birds Directive. There are 39 proposed or candidate coastal SAC in Scotland, 5 of which are developing schemes of management under an EC 'LIFE' project for European Marine Sites. Where Natura sites, particularly SAC overlap with or are within ICZM project areas, they have given an added impetus by adding a requirement for a statutory scheme of management for a marine protected area to the voluntary process already in place.

**15.Shoreline management plans:** Sustainability on the coast will be difficult to achieve in the face of the latest research predictions for sea level rise. Policies are required which encourage the restoration of soft coast habitats such as mud flat and salt marsh. Managed realignment of the coast with 'soft engineering' approaches to coastal defence instead of the building of additional hard defence structures will allow coastal processes to function and natural inter-tidal habitat to become re-established. Sand dunes should, wherever possible be permitted to migrate according to the forces of nature. Development, which does not require a coastal location, should be sited away from the coast so that future pressures to build hard defences are avoided. Scotland is in the early stages of developing shoreline management plans with one plan in place for part of the south east coast and others in preparation. Research has provided an understanding of coastal processes and identified coastal sediment cells. This places us in a strong position to advocate soft engineering and managed realignment approaches to coastal defence and against the building or repair of hard engineered defence structures. ICZM management strategies place a high priority on the production of SMP and are expected to facilitate their production.

**16.Biodiversity Action Plans (at national and local level):** The UK response to the Convention on Biological Diversity has been focused on the identification and preparation of action plans for habitats and species, which require conservation. There are 230 species and 40 habitats found in Scotland with plans now being implemented. In addition each of the 32 local authorities in Scotland are involved in the preparation of local biodiversity action plans for threatened habitats and species in their area. ICZM projects have established links with biodiversity work so that the nature conservation components of ICZM management strategies can be delivered through local and national action plans for biodiversity.

**17.Water Framework Directive:** A river catchment approach to integrated management is in place for one river system in Scotland and under consideration in other areas. It is expected that the extension of the WFD to 1 nautical mile offshore will enable synergism with ICZM projects to be established. It is likely that much of the maritime work required by the WFD will be in place as a result of the work of ICZM. The fact that the WFD imposes statutory requirements on member states may provide a benefit for ICZM by creating a legal framework under which parts

of the management strategies may be implemented. The partnership approach developed for ICZM is proving to be directly transferable to integrated catchment management.

## **The role of ICZM and an assessment of its success**

**18.** SNH supports the ICZM approach and established projects to test its potential to address the statutory vacuum that exists in coastal management. ICZM is seen as a tool to solve complex problems in coastal areas, promote sustainable integrated management of coastlines under threat and deliver improved protection for the natural heritage. SNH's objectives for ICZM are:

- to raise the profile of the coastal zone as an environment requiring special attention to achieve sustainability;
- to integrate environmental requirements into activities, policies and plans of all sectors which exploit the coastal zone;
- to demonstrate how ICZM can make an important contribution to sustainable development; and
- to expose the need for an effective integrated policy and regulatory framework for the coastal zone.

**19. The remit of ICZM partnerships:** Coastal fora are voluntary in the UK and therefore lack statutory powers. Thus, they can only work by advocacy leading to policy changes of bodies with statutory remits. Their primary role is to use networking and communication to integrate the various statutory remits already in place for the coast with each other and with all the other non-statutory and community interests. ICZM partnerships have demonstrated that they can resolve conflicts, agree management strategies and deliver enhanced natural heritage protection.

**20. An assessment of the success** of the policy must take account of the coastal management and trends, which existed before 1992. Progress since that time has been significant (see box 1) and it is reasonable to attribute much of this progress in Scotland to the ICZM programme.

**21. Partner involvement:** Surveys have indicated that coastal fora are providing an important service of improving communication and understanding between coastal interests leading to better decision making by members. Commitment to ICZM among partner organisations is variable but almost all public and private sector statutory bodies are supportive. Key partners include Environmental agencies of Government (SNH, SEPA), Local Authorities, Water companies, Power generation companies, Crown Estate Commissioners, Port Authorities, Most enterprise companies, NGO, Community representatives and Land owners.

**22. The business sector:** Significant sponsorship has been achieved and some of Scotland's largest businesses have attended ICZM events to network and to note policy developments. Throughout the UK, however, business involvement in ICZM has been less than was anticipated and it is clear that ICZM must offer more to the private business sector in the early planning stages. A new orientation towards sustainable commercially focused policies and a new approach to business may be appropriate.

**23. Issues addressed:** Activities which are covered by the 4 published Scottish ICZM strategies now being implemented include:

- land use planning and development,
- coastal erosion and defence, shoreline management planning and management of the impacts of current trends in climate change,
- chemical pollution and eutrophication,
- waste management,

- port developments and shipping,
- tourism and recreational activity,
- conservation of natural resources such as biodiversity and natural habitat,
- the exploitation of marine and coastal resources by fishing and aquaculture.

### **Box 1: Strategic Achievements of ICZM in Scotland**

- ICZM has largely silenced the early 90s concern for the deteriorating condition of estuaries and developed coastlines. Then Agencies, NGO and others were calling for improved coastal management with statutory measures but the UK Government offered only voluntary approaches. As a result, participatory methods were developed which had not previously been used in Scotland on a large scale. They have shown that voluntary processes can resolve complex issues and conflicts and can influence for better, the integration of sectoral policies and plans.
- ICZM has reversed the century plus trend of coastal natural resource loss. The value of estuarine natural habitat is now widely recognised, and as a result of 8 years of ICZM, mechanisms are in place for the most threatened coastal areas to resolve ongoing and future issues and conflicts.
- ICZM was one of the first attempts at integrated management. Others have followed such as Shoreline management, Catchment management, local biodiversity plans, and Marine SAC schemes of management. All are using participatory methods trialed by ICZM and it is reasonable to conclude that ICZM has been instrumental in their adoption.
- ICZM has had a significant influence on sectoral policies. In projects areas there is an improved climate of openness and awareness of other interests. New development proposals are now very likely to be discussed (formally or informally) in ICZM partnerships at an early stage. The inclusion of ICZM in the environmental policies of Ports Associations is a good example of the way the approach has been adopted.

### **The role which Europe could play to support CZM in Scotland**

**24.** There is a requirement for the EC to lead by example in demonstrating ICZM principles of liaison, cross-sectoral integration partnership and consensus between DG. It is clear that the EC will be unable to promote integration of policies and programmes effectively at member state level unless they can show this integration can be achieved in the EC itself. Integration of sectoral policies for the coast at the European level is not easily achieved and the agreement of targets and objectives between DG is essential to show that integration could also take place at local level. Examples of difficulties which must be resolved at EU level to stimulate local improvements are:

- the adverse effects of the CFP on the environment, particularly fish stocks and non-target species,
- the need for different regional policies for fisheries,
- the tension between statutory site protection (e.g. Natura) and more voluntary ICZM approaches.

**25. An EU Coastal Strategy** supported by the whole EC should be developed at the European level. This should give the EU a continued role in promoting ICZM through statutory and non-statutory mechanisms. The framework should be permissive and enabling not restrictive

allowing for local requirements and interpretation. It is important that ICZM is recognised as a mechanism to achieve sustainability across all sectors and not be regarded as just an environmental issue. This highlights again the importance of achieving integrated thinking and working at EU level.

- 26. A legal framework:** SNH is broadly in favour of a legal framework for ICZM such as might be specified in a Directive, Decision or Council resolution. However the timescale to deliver any of these may be unacceptably long and there is a need for urgent action to capitalise on existing achievements of ICZM at local level. While retaining the option of a legal framework as a longer term objective, immediate action in the form of stimulating and supporting ICZM should be taken.
- 27. The need for policy backup:** There is a lack of National (or EU) policy support for ICZM such that, in the UK, ICZM can only be developed on a voluntary basis. A voluntary approach may have certain advantages, such as increased ownership of the policies, however, a legal framework would provide resources from partners. The reluctance of partners to commit resources voluntarily for implementation has limited progress of ICZM in Scotland. Projects have suffered from slow implementation of strategies because administrative responsibility for ICZM is undefined. A framework is required to place responsibility for delivery of ICZM at member state or EU level. ICZM contrasts with other non-statutory initiatives in the UK such as Community planning, Local Agenda 21 and Local biodiversity action plans which have been promoted (but not enforced) by the UK Government. They have received a high level of support and commitment of resources at Local Government level. This has not so far been achieved for ICZM.
- 28. Incentives:** An important option could be to make structural funds or other instruments for coastal areas conditional on an effective ICZM strategy for the area. A policy in the USA makes federal aid for coasts dependant on an ICZM strategy at state level. It would help to develop measures in Europe which impose direct obligations or conditionality for funding linked to ICZM strategies.
- 29. A policy review** would help to identify ways in which EU sectoral policy could better promote ICZM. This analysis should result in some guidance from the EC on how ICZM can contribute to the delivery of a wide range of other EU policies such as Habitats and Birds Directive, CFP, CAP, Water Framework Directive and the EU Biodiversity strategy.
- 30. Fisheries** are of great importance in Scotland. The current trend throughout Europe towards large offshore fishing operations is damaging Scotland's local coastal economies and culture as small scale inshore, more sustainable fisheries decline. The potential links between inshore fisheries and ICZM in the Agenda 2000 regulation on Community Structural Assistance in the fisheries sector are welcome. A European coastal strategy should develop this integrated approach further.
- 31. ICZM and the economic sector:** ICZM needs to better integrated with the economic policies of other industrial sectors. SNH is convinced that efficient ICZM is cost effective to all participants but this is difficult to demonstrate. The EC could undertake research to investigate the economic costs and benefits of ICZM on a range of coastal environments. The Forth Estuary Forum in Scotland has undertaken an innovative study of the business environment of the Forth Coastline. This model could be used more widely in Europe to examine the economic value and potential of European coasts and provide a measure of the importance of achieving good coastal management.

## **Implementation of the Integrated Coastal Zone Management Plans (ICZMPs) for the Vistula and Szczecin Lagoons of Poland**

Tomasz WINNICKI\*

### **Abstract**

Since 1992 the Helsinki Commission is assisting Poland in implementing Baltic Sea Joint Comprehensive Environmental Action Programme (JCP, the Baltic Programme). The 4<sup>th</sup> element of the Programme deals with the protection of coastal zones. Estuaries and wetlands are especially important due to their biodiversity and productivity as well as creation of a buffer against various man-made pollutants, originating from numerous economic activities (harbors, fishery, chemical & petrochemical industries, mining, others). Parallel, another group of environmental conflicts deals just with human presence, both constant, linked with local municipalities, and changing with seasonal tourism and recreation. To put into practice Element 4 of the JCP development and implementation of Integrated Zone Management Plan for 6 priority areas was recommended. Among them two were of bilateral interest of Poland – Vistula Lagoon (managed with Russia) and Szczecin Lagoon (shared with Germany).

The first versions of the ICZMP for these two areas were elaborated already in 1995 and it was found necessary to begin further activities within the Phase I B devoted to verify and actualize those draft plans. Several recommendations were pointed out to be completed in the Phase I B, among them such as: consulting of plans with local authorities, establishing of pilot projects, listing of decisions to be made by appropriate authorities to implement plans, introducing of appropriate measures to assess the sustainable development factors, reinforcement of local environmental administration and its professional training adequate to new managerial tasks, and others.

Numerous other problems affecting implementation of the Baltic Programme had to be solved, parallel, among them the most important international legal aspects and financial resources.

Polish experts prepared two independent plans covering two zones of national interest. The major ideology of both elaborations is the same and reflects general recommendation of the Helsinki Commission. There are also several differences in such issues as: the role of a particular undertaking in the economy of partner countries (Poland, Russia, Germany), the consciousness and social activity of population of the area, the tradition of an international environmental collaboration, current development and organization of environmental monitoring system.

### **1. Introduction**

Since 1992 the Helsinki Commission is assisting Poland in implementing Baltic Sea Joint Comprehensive Environmental Action Program (JCP, the Baltic Program). The 4<sup>th</sup> element of the Program deals with the protection of coastal zones. Estuaries and wetlands are especially important due to their biodiversity and productivity as well as creation of a buffer against various man-made pollutants, originating from numerous economic activities (harbors, fishery, chemical & petrochemical industries, mining, others). Parallel, another group of environmental conflicts deals just with human presence, both constant, linked with local municipalities, and changing with seasonal tourism and recreation.

To put into practice Element 4 of the JCP development and implementation of Integrated Zone Management Plan for 6 priority areas was recommended. Among them two were of bilateral interest of Poland – Vistula Lagoon and Gdansk Bay (managed with Russia) as well as Oder Lagoon and Pomerania Bay near Szczecin (shared with Germany).

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The first versions of the ICZMP for these two areas were elaborated already in 1995 and it was found necessary to begin further activities within the Phase I B devoted to verify and actualize those draft plans. Several recommendations were pointed out to be completed in the Phase I B, among them such as: consulting of plans with local authorities, establishing of pilot projects, listing of decisions to be made by appropriate authorities to implement plans, introducing of appropriate measures to assess the sustainable development factors, reinforcement of local environmental administration and its professional training adequate to new managerial tasks, and others.

Numerous other problems affecting implementation of the Baltic Programme had to be solved, parallel, among them the most important international legal aspects and financial resources.

Polish experts prepared two independent plans covering two zones of national interest. The major ideology of both elaboration is the same and reflects general recommendation of the Helsinki Commission. Therefore, the case of Vistula Lagoon could be discussed as a representative example.

There are also several differences in such issues as: the role of a particular undertaking in the economy of partner countries (Poland - Russia, Poland - Germany), the consciousness and social activity of population of the area, the tradition of an international environmental collaboration, current development and organization of environmental monitoring system and others.

## 2. Mile-Stone Occurrences in Creation of Baltic Programme

At the conference of Prime Ministers of the Baltic Sea States, which was held in **Ronneby, Sweden, in September 1990, the Baltic Sea Declaration** was adopted which specified a number of fundamental principles and priorities necessary to improve the state of the marine environment of the Baltic Sea. The Declaration included also the decision concerning the development of the Baltic Sea Joint Comprehensive Environmental Action Programme, JCP, sc. the Baltic Programme.

The innovative contribution of the Ronneby conference consisted in the following:

- the Programme was formulated as a joint one - implementation priorities as regards particular elements of the Programme have been set for the whole area of interest rather than for particular country;
- the Programme was formulated so, that it would lay the foundation for assistance from international financial institutions - also within the framework of bilateral assistance. The Programme activities concentrated on so called hot-spots.

In 1992, **Programme Implementation Task Force (HELCOM PITF)** was created within the framework of the **Helsinki Commission**, with the aim of providing support for long-term implementation of the Programme. In addition to this, the HELCOM PITF is partly responsible for Programme co-ordination and monitoring. It was agreed that – beside its other functions – the Programme would provide assistance in strengthening political and legal institutions involved in the protection of the marine environment of the Baltic Sea, investment activities (focused on hot-spots), applied research, environmental education and the development of public awareness. Furthermore, it was decided that the first phase of the Programme would be focused on priority activities, whereas the second phase would consist in broadening and strengthening these activities.

The Baltic Programme consists of six elements. Element 4 "**Management Plans for Coastal Lagoons and Wetlands**" concerns environmental protection, management and planning with respect to coastal lagoons and wetlands.

**The 1<sup>st</sup> Phase of the Baltic Programme Implementation (1993-1997)** was devoted to the development and implementation of management plans for five priority areas, those included in the list

of hot-spots: the Matsalu Bay (Estonia), the Riga Bay (Estonia and Latvia), the Curonian Lagoon (Lithuania and Russia), *the Vistula Lagoon* (Poland and Russia), and **the Oder Lagoon** (Poland and Germany).

Following the **decision by the Environment Ministers of the Baltic Sea States, in 1995**, a revision of the Baltic Programme was carried out, and observations concerning Element 4 of the Programme were included in the Final Document of this revision. A relevant part of that Document, says: *>Element 4 – New Phase for Management of Coastal Lagoons and Wetlands. In the first phase of the JCP, the HELCOM PITF Working Group on Coastal Lagoons and Wetlands prepared preliminary management plans. These plans will be further develop to fully integrate their objectives into national and local planning requirements. Activities in this area have been co-ordinated by the WorldWide Fund for Nature (WWF) which has worked closely with national and local governments, local NGOs and local residents. These plans will provide the basis for implementation activities under the second phase of the JCP.*

The basis for the elaboration of plans was prepared by the WWF as a set of guidelines - "Technical Manual on Elaboration of Integrated Coastal Zone Management Plans for the Baltic Sea Task Area". The guidelines specified organisational aspects of Area Task Team (ATT) work and the development of plans, as well as the proposed subject structure and range of plans (demography; geology and topography; hydrology; climate; national and international policy, strategies and regulations; key ecosystems and species; sectoral planning and resource exploitation; pollutants and pollution changes trends; monitoring programmes and economic priorities). These issues were to be characterised with particular focus on: historical development and changes observed, the present state and anticipated changes. The basic ATT goal, of crucial importance for further work, was the delimitation of the task area. According to the WWF guidelines, the size of a task area should allow for consideration of all physical, biological and human factors which exert influence on ecological use and sustainable development of both the coastal zone and the adjoining bwlnds and wetlands. Both administrative borders and functional (socio-economic) scope were taken into consideration while finally delimiting task areas for particular ATTs.

### **3. ICZMPs in Poland within the Baltic Sea Joint Comprehensive Environmental Action Programme**

HELCOM PITF Working Group on Coastal Lagoons and Wetlands (HELCOM PITF MLW), created in 1993, has been designated to initiate and coordinate the development of integrated management plans for priority areas identified by the Baltic Programme and their implementation. Separate ATTs consisting of representatives from all administrative levels (central, regional and local), research institutions and NGOs were established for each of these areas situated within the territory of two states. It was agreed that actions taken in each of the transboundary areas would be jointly coordinated by the national ATT Chairman and his Secretary (acting as a co-chairman). In Poland, following the decision of the Ministry of Environment, the director of the Regional Board for Water Management in Gdansk was designated as the ATT Chairman for the Vistula Lagoon during the first phase of work. The elaboration of management plans was supervised by the World Wide Fund for Nature which performed the role of the Lead Party for Element 4 of the Baltic Programme, and has provided secretariat facilities to the HELCOM PITF MLW since the end of 1993.

ATTs were obliged to identify and consider all natural and anthropogenic factors and activities, which influenced the task area. The objective of the plans was:

- to identify critical problems with regard to environmental protection and the conflicts between environmental protection and different industries, as well as between particular industries,
- to identify mechanisms required for doser coordination of efforts in the field of environmental

protection and economic development;

- to elaborate guidelines for national, regional and local authorities with reference to sustainable and environmentally friendly development in the coastal areas included in plans.

In **1995** the first version of the document entitled “**ICZM Plan for the Vistula Lagoon**” was prepared by Polish and Russian experts, simultaneously adopted by Polish and Russian ATTs, and subsequently passed on to the Working Group on Coastal Lagoons and Wetlands for decision.

The MLW Working Group expressed numerous reservations concerning all plans developed during the first phase of work, and assessed that extensive modifications were needed before the second phase aiming at plan implementation could be commenced. This opinion was subsequently shared by the HELCOM PITF which resolved about the introduction of phase 1B that would primarily consist in verification and institutional preparation for plan implementation.

Guidelines for such a process being implemented as phase 1B have been elaborated by the HELCOM PITF. Following its decision, actions to be taken during this phase would include:

### ***1) Verification and updating of plans developed hitherto***

- preparation of plans for implementation:
  - plan consultation with a view to setting priority actions;
  - development of proposals for pilot projects to be undertaken;
  - listing the decisions which would enable plan implementation, to be made by authorities;
  - negotiations with the representatives of potential implementation funding units;
- development of a set of Sustainable Development Indicators, which would not only help in assessing plan implementation in Phase 2, but also provide a useful tool for all managerial levels. Consequently, the indicators should meet certain requirements:
  - be easily measurable on the basis of available data;
  - reflect trends over time; and
  - enable comparison of actual parameters to their reference values;
- institutional strengthening as regards environmental personnel, and education of natural resource users in areas under integrated management;
- development of guidelines for identification of important wetlands.

### ***2) Adoption of the plan by the governments of respective Contracting Parties, and designation of organisational units responsible for that plan implementation and its supervision.***

Following the decision of the HELCOM PITF, phase 1B should also include key actions to ensure better opportunities for gradual plan implementation; possible actions should be analysed from the point of view of the Polish and international legal system (regulations and/or agreements which secure integrated management), from organisational and institutional point of view (units and structures responsible for coordination and monitoring of the implementation process), and from the financial point of view (funding sources, principles and conditions, forms of funding; the possibility of partial implementation funding from foreign sources – implementation of pilot projects).

As a result of these general decisions, the ICZM Plan for the Vistula Lagoon had to be thoroughly analysed – with special consideration for the initiatives undertaken after plan elaboration, and the sources of information and data, which for various reasons were not available for the ATT. It was also concluded that the holistic approach to the issue of integrated management adopted by the Helsinki Commission was not sufficiently reflected in ICZM plans prepared hitherto (including the ICZM Plan for the Vistula Lagoon).

Finally, adequate attention should be paid to other initiatives at the national and international level (independent of actions taken by the Helsinki Commission), which are essential for the ICZM process, and which ought to be taken into account in subsequent phases. They include:

- **VASAB 2010** – Visions and Strategies around the Baltic Sea – a set of priority objectives for spatial development in this region, agreed by all States of the Baltic Sea Region. According to the VASAB 2010 Document, the priorities refer to:
  - environmentally, economically and socially sustainable development;
  - conservation of cultural heritage and the potential of natural environment;
  - strengthening the position of cities in the cooperation network of the Baltic Sea centres;
  - cross-sectoral coordination of activities and the creation of synergy (e.g. in the field of transport and environment).

**Owing to the VASAB 2010 Programme it was possible to develop a number of joint international operational projects as:**

- **BERNET** - sea-water pollution monitoring and prevention (including bays and lagoons);
- **PSSD** - cross-sectoral planning and management as regards sustainable development;
- **cooperation of regions and city networks** (enhanced competitiveness/improved operation);
- **restitution of areas' natural value** (unique landscape and cultural assets, tourism);
- **SUPPORTNET** - development of a marina network (small ports, yachting);
- **technological innovations** (services and jobs; environmentally sustainable energy systems);
- **development of transport** (chains and infrastructure connecting ports with the hinterland).

VASAB 2010 has made a significant contribution to the elaboration of guidelines for spatial planning of the coastal zone in the Baltic Sea region - "**Common Guidelines for the Spatial Planning in the Coastal Zone of the Baltic Sea Region**", adopted during the **Conference of Ministers for Spatial Planning**. An important initiative put forward by VASAB 2010 together with HELCOM was a **Seminar held in Gdansk, concerning so-called "Green Spots"**, i.e. the possibilities of sustainable development in areas of high environmental value and, at the same time, characterised by numerous conflicting development objectives. Such areas would obviously include lagoons from ICZM plans.

- **BALTIC 21** – of an integrated, cross-sectoral action programme for the implementation of the sustainable development concept in the Baltic Sea Region. This is the first specific programme in Europe elaborated within the framework of Regional AGENDA 21. Apart from economic sectors it includes transport, spatial management and general measures.
- **The >Euroregion Baltic<** – a long-term cooperation programme for communes and regions of south-eastern part of the Baltic Sea. This collaboration encompasses northern Poland (Pomeranian and Varmian-Masurian provinces, respectively), southern Sweden, Bornholm, Lithuanian region of Klajpeda, Latvian region of Lipava, and Kaliningrad District of Russia. The Euroregion idea is composed of several aspects including an intensified cooperation between regional authorities, self-governmental bodies and chambers of commerce. These cross-border structures were primarily implemented among Germany and France and introduced in Poland through trilateral <Euroregion Neisse> among Germany, Poland and Czech Republic. A possibility of developing of such structure in the area of interest to promote social and economic cooperation with Kaliningrad District was tested. An agreement on the state of environment and spatial planning was considered relatively easy to achieve, and further initiatives concerning the development of tourism, promotion of economy and trade exchange would follow.
- **"POLAND 2000 PLUS"** – A Concept of National Spatial Management Policy, a binding document issued by the Polish government and adopted by **the Council of Ministers in 1999**.

Together with socio-economic and environmental policy, the Concept is supposed to operate as a tool for indirect regulation of structural transition in Poland. The idea of sustainable development was adopted as a general principle of the Concept, so that development policy would be primarily a mean to improve the quality of environment and living conditions. The deteriorated quality of life and natural environment, as well as low functional efficiency of the settlement system constitute an obstacle to structural transition and the increase in economic efficiency. According to the document mentioned above, some parts of the Polish coast have been afflicted with civilisation-caused recession due to outdated infrastructure, sharp increase in unemployment as well as a relatively low level of education, especially as regards residents of villages and small towns. 'Poland 2000 plus' intends to apply a policy which will help "to overcome the recession" in such areas on the basis of a more efficient use of economic resources, environmental and cultural assets as well as the introduction of innovative incentive tools (mainly with the help of public funds, including the international ones).

- ***A new State Environmental Policy*** – a draft guideline document for actions in the field of environmental protection and green (balanced and sustainable) development of Poland on the threshold of the 21<sup>st</sup> century. Three stages of objectives implementation were distinguished:
  - the stage of implementation of the short-term objectives, simultaneous to the **pre-accession period to the EU (2000 – 2003)**;
  - the stage of implementation of the medium-term objectives in the initial **period of Poland's membership of the EU**, with transitional periods and the implementation of approximation programmes (**approximately to the year 2012**); and
  - the stage of implementation of the long-term objectives set in the **"Sustainable Development Strategy for Poland till the year 2025"** elaborated by the Polish government.

#### **4. Crucial Information and Important Features Concerning Vistula Lagoon**

The coastal zone of the Vistula Lagoon has been delimited as the optimum management area by a group of experts in consultation with the ATT. According to the WWF guidelines, the size of a Task Area should allow for consideration of all physical, biological and human factors and activities which exert influence on space and resource use and the sustainable development of the Coastal Zone, including wetlands. The current state of natural environment, and the community which inhabits the delimited area and acts within its boundaries, are closely interrelated. All human activity and spatial management associated with it, takes place in the natural environment and makes use of its resources and assets.

In order to achieve an adequate delimitation, available information and data concerning the area was compiled, gaps in this respect were identified, and existing and anticipated problems and conflicts were outlined. Both administrative borders and functional (socio-economic) scope were taken into consideration while finally delimiting the Task Area as an eco-region for management, since these borders, though not necessarily overlapping with the borders of particular ecosystems, reflect the existing administrative structure which conditions plan implementation.

The basic unit of functional structure is referred to as a geo-system, that is a unit characterised by strong internal connections – in ecology called an ecosystem. It can be designated on different spatial levels. A material structure divided into components: atmosphere, hydrosphere, geosphere, pedosphere and biosphere, as well as internal processes characteristic of these components and the exchange between the components are essential for the operation of a geo-system.

Among these components a special role has been assigned to water, which provides most basic matter transport in the natural environment, and thus constitutes the main factor contributing to the

mutual influence of environmental systems. In view of this, the Task Area encompasses all of the Vistula Lagoon catchment area both on the Polish and Russian side. This is an area sufficient to identify sources of potential negative anthropogenic impact on the Vistula Lagoon. However, it should be marked that the impact of human activity on the Vistula Lagoon differs according to the localisation of such an activity. Therefore areas of different degrees of influence on the lagoon have been distinguished:

1. In the broadest context, resource management area has been designated according to environmental criteria (geo-systems). The area roughly corresponds to the Vistula Lagoon catchment area created mainly by the river basins of the Pregola (together with its tributaries – the Lyna, the Wegorapa, the Dejma), and of the Nejma and the Prokhladnaya Rivers on the Russian side, and the Pasleka, the Nogat, the Szkarpa, the Bauda and the Elblag Rivers on the Polish side.
2. In the narrow context, the influenced area encompasses the coastal belt designated on the administrative basis on the Polish side. The area consists of a technical belt and a buffer belt, both administered by marine authorities (special national administration).
3. In view of legislative conditions concerning administrative decisions, an area corresponding to the administrative division of communes on the Polish side, and districts on the Russian side, has been designated. This area consists of communes adjoining the Vistula Lagoon and communes which exert direct influence on its waters, or else are heavily influenced by the Lagoon.

In order to identify diversified principles of the coastal zone management, basic structural units of the Task Area were distinguished.

The coastal zone of the Vistula Lagoon - the TA is a very sensitive and valuable natural and cultural ecosystem, with highly diversified biological structure and considerable biodiversity. The zone is included in a number of law-protected areas, both on national (Polish and Russian), and international level. It is an element of the ECONET network and a part of the European system of wildlife reserves. It is also one of the BSPAs designated by HELCOM, and a part of areas specified in various international conventions, such as the Ramsar Convention.

At the same time, it is a densely populated area of ca. 750 thousand inhabitants, including almost 450 thousand people in the city of Kaliningrad and 130 thousand in the city of Elblag. There is little urban development in the remaining part of the area, where economic activity associated with coastal location and water bodies is concentrated. Commercial sea ports in Kaliningrad and Elblag, marine industry, and industries which benefit from the vicinity of ports (mainly in the Kaliningrad region), sea fishing (on the Russian side) and fishing in the Vistula Lagoon (on the Polish side) or intensified tourism in the Polish part of the Vistula Spit, could be mentioned as examples. Thus, the environmental function in the whole area is under strong pressure from economic activity which, to a different extent, affects the environment: either disturbing it in a way which affects economic foundations as well (tourism, fishery, agriculture), or exerting destructive influence (e.g. industry in the Kaliningrad region).

However, it should be noted that there are a number of areas, which indicate a currently or potentially significant range of positive synergy of resources and functions. For instance, the coastal zone of the Vistula Lagoon has got numerous attractive climatic features (e.g. a large number of sunny days, breeze circulation with stimulating and inhaling properties), which can be conducive to health improvement, if appropriately enjoyed. Additionally, the coastal zone of the Vistula Lagoon abounds in valuable groundwater resources, which so far have been exploited to a very limited

extent for medical purposes. The function of a health resort, based on these natural resources and features, could develop in harmony with the environment.

Another example is provided by agrotourism and wildlife tourism (wildlife observation, holiday stay connected with environmental education), that is being gradually developed, as well as by restructured agriculture in the areas where the principles of environmental (organic, biodynamic) management, or at least integrated management are being introduced. Agricultural land use, especially as regards meadows and wetlands, should be in agreement with the environmental function and development objectives in the area.

It should be noted that a quick achievement of sustainable development is threatened by natural factors, partly modified and regulated by man-made ones, as well as by typically socio-economic factors. Some of the threats are particularly pronounced in the coastal zone of the Vistula Lagoon. Obviously, they cannot be eliminated, but their impact can be limited or adequately directed so that it becomes a positive component of development. It can be best exemplified by the natural forces of the hydrosphere, traditionally treated as inimical and destructive. However, these phenomena can be treated as factors which influence the environment and enhance environmental and landscape assets of the area, and which can thus be useful for the promotion of the area, especially with respect to tourism. Consequently, human roles and tasks will have to be changed – these forces will no longer be opposed, but rather adjusted to and co-operated with the area development policy.

Information dissemination will constitute a prominent element of such a strategy: it will be necessary to build awareness and shape the attitudes of resource users, especially those who face the hazards, as well as to develop and promote an appropriate image of the area.

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### \*ACKNOWLEDGMENTS

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## Coastal Erosion and Land Use in Latvia

M.Sc.ing Rolands ARTURS BEBRIS\*, M.Sc. Māris OZOLINS<sup>◇</sup>

Latvia is located in the eastern coast of the Baltic sea (total area 64.6 thousand km<sup>2</sup> and characteristic with level relief (hills, lowland, flats). Population is 2.5 million from which 70% lives in towns, including 34% in the City Riga agglomeration. The Latvia's seacoast stretches for 496 km, which means that every person has relatively approximately – 20 centimetres of seashore. Of the coastline, a 300km long zone, largely on the Kurzeme coast, has been largely undisturbed and supports natural ecosystems. The beaches and dunes are mostly sandy; gravel, pebble and rocky shores are infrequent. On the beach and dunes, the ecosystems are formed by a rather small number of species, which are adapted to the unique conditions. The vegetation is usually sparse, making it very sensitive to human activity. In depressions between dunes where the moisture regime is unstable, the communities include species typical of both dunes and meadows, and even of mires and waters. Along some stretches, beaches have overgrown with reeds and bulrushes. Cliffs are rare along the Latvian coast, but they can be found near Jurkalne at Baltic Sea coast and Tuja at the Gulf of Riga.

The Baltic Sea basin is young in geological time scales. The land surface was formed during the Quaternary glacial period and the littoral areas were formed recently by several stages of the Baltic Sea development, with moraine, sand, clay and dolomite sediments. The dominating soils are podzolic. Accordingly, the seashores are not yet fully stabilised. Apart from natural processes, human activities like hydraulic structures and technical constructions, tourism and dumping of sediments from the canals into the sea contribute to coastal degradation. 120 – 150 km of the Latvian Coastline is subject to erosion. As the result of sea and human interaction, Latvia loses several hectares per year.

Large areas of agricultural lands were abandoned and many natural biotopes survive. The low management intensity on agricultural and forestland is favourable for big populations of species that are endangered throughout Europe and for biotopes almost extinct in Western Europe and Scandinavia. About 2 million hectares of land that was abandoned during the past 45 years is now overgrown with scrubs and deciduous trees of different successions, providing a mosaic landscape without human impact.

There remain many sites with natural dune plant communities that are extinct elsewhere along the Baltic Sea. Partly transformed territories – residential areas and agricultural land – occupy 27 – 28 % of the coastline. A 300-meter wide strictly protected belt along the shore of the Baltic Sea and the Gulf of Riga has been created to conserve coastal landscapes; restrictions may apply to another 5 to 10 km. A ban on forest cutting and other restrictions are in force in the protected belt to preserve biological diversity in coastal areas.

The grey dunes are covered by stable, sparse vegetation formed by lichens, bryophytes and low herbs, as well as by isolated trees and shrubs. Dune meadows have formed as a result of traditional farming methods, mostly by use as pasture. Meadows are dominated by graminoids and a humus layer has formed. Today, these areas have lost their previous importance. Significant areas of dune meadows and grey dunes have developed into forests or are overgrown. Near towns or cities, the

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dunes are trampled or have become housing zones. Relatively few stretches of grey dunes and meadows have remained.

As it is provided by National Programme on Biological Diversity, with an aim to reduce the degradation process of beach and dune ecosystems, it is necessary, for example, to determine allowed recreation pressure levels for specific coastal zones which are identified in physical plans; prevent tree planting and building on grey dunes or dune meadows; encourage use of local species for dune stabilisation, and prohibit planting of alien species on dunes; ensure availability of general information to the public on nature protection territories and belts, and the nature protection regimes along the coast.

The beaches and dunes are, of course, popular for recreation. A large part of the coastal zone falls within city territories, where fishery and harbour activities have increasing impact. Poorly planned and intensive recreation results in trampling of the beach, fore-dune and white dune vegetation, pollution of the sand, disturbance of birds during nesting, and disturbance of the habitat for insects and amphibians. Beach tending efforts remove the drift material zone and its very characteristic plant and animal communities.

In recent years, sea cliff areas have become very popular among tourists. If these beach areas lack the required facilities and a regulatory infrastructure for tourists, the typical plant and animal communities will be destroyed and erosion will intensify.

Along the Latvian coast, tourism has not been much developed, due partly to the military restrictions during the Soviet period. At the time, tourism concentrated on some towns around Riga. Most tourists to Latvia came from the Soviet Union. After privatisation, the tourism sector grew but it does not seem to contribute much to socio-economic development or cultural exchange. In spite of continuing restrictions in the protected coastal belts of northern Latvia, the sand dunes are being destroyed by visiting hikers and motorists. The development of commercial hunting as a tourist activity is also a threat to nature. Also the scattered land ownership bring definite uncertainty in the management of coastal zones.

Latvia's overall ambition is to maintain its current level of bio-diversity and landscape characteristics. Protecting bio-diversity is among the issues covered by the EU approximation process. Both the National Environmental Policy Plan and the National Programme on Biological Diversity recognise that preventing a further decrease in biological diversity is a priority. Also the preparations for transposition and implementation of the forthcoming EU Water Framework Directive indicate the complex approach of management of the coastal zones.

55 monitoring programmes (EPR, Latvia, 1998) are implemented on various nature issues, covering different habitats, protected sites, plant and animal species and measuring environmental pressure.

Regarding nature protection. NGOs are traditionally important actors. In Latvia NGOs such as the Latvian Fund for Nature, The Latvian Ornithological Society, the WWF programme for Latvia, the Children's Environmental school, the Coalition Clean Baltic (Latvia), the Environmental Protection Club and the Ecological Centre strive to develop education and raise public awareness.

Near the Baltic Sea are established 16 territories of special nature protection: biosphere reserve, 2 national parks, 2 nature parks, 9 nature reserves and 2 geomorphological objects. Total length of seashore of these objects is approximately 232 km. The most serious problem is that territories shall have very detailed management plans and that there are very limited funds to implement them. Implementing nature conservation plans is particularly urgent for coastal zones and the remaining wetlands. The coastal section Dzeni-Ainaži, Kaltene/Engure area, Lielirbe/Kolka area and

Pape/Perkone area, which have been proposed for inclusion in a system of Baltic Sea Protected Areas adopted by HELCOM 15, deserve particular attention. To comply with Natura 2000, Latvia is drawing up an inventory in connection with the CORINE biotope project.

An award of a Blue Flag is a form of eco-certification that provides a guarantee to tourists that European standards are met for bathing waters and yacht harbour facilities. Blue Flags designations are awarded each year for beaches and yacht harbour facilities, which meet criteria of water quality, safety and information. The non-governmental nature of the campaign allows involving non-governmental organisations and members of the public in improvement of bathing waters and small harbours.

In 1997, the Ministry of Environmental Protection and Regional Development of Latvia initiated preliminary work towards participation in the Blue Flag movement, with the Environmental Protection Club as the leading non-governmental organisation (accepted into FEEE in June 1998).

The National Commission on Bathing Waters and Harbours was created, consisting of interest organisations and institutions. Before 2001, it is aimed to raise Blue Flags at least 3 bathing waters and 3 yacht harbours, while closing the gap for the remaining potential BF bathing waters and yacht harbours.

The Amber Trail eco-tourism project is an option for the five coastal municipalities to develop tourism business in a sustainable way. Unfortunately, lack of the financing is probably the biggest threat to the project's accomplishment and therefore to the whole area. The precondition for creation of the Amber Trail is "Concept of Integrated Coastal Zone Management", which has been developed during last 25 years. At 1989 it was defined by Management and planning network of the University of Florida as follows: Dynamic process for use and development of the strategy of distribution of environmental, socio-cultural and organisatoric resources with an aim to protect coastal zone and use its resources in sustainable way. A lot of information work has to be done enabling the area to sustainable tourism. The traditional way to protect nature is to make a nature reserve or a national park. The main purpose is to raise funds for management of the park. This creates job opportunities by using local inhabitants as special guides on the work in maintaining the park or reserve. The Pre-Environmental impact assessment of the hiking trail shows that possible conflicts can be avoided with small efforts, and a number of opportunities exist that could prove valuable in the long run.

## Safety in Maritime Navigation as an Important Factor in the Prevention of Marine Pollution

Joaquim FERREIRA DA SILVA\*

### Summary

- Main sources of pollution in the marine environment;
- Immersions/ballast water discharges of ships and port installations;
- MARITIME ACCIDENTS;
- Pollutant cargoes:
  - Transport of hydrocarbons, crude and fuel
  - Transport of dangerous or hazardous cargo
- Maritime transportation in European coasts as an alternative to land transportation by trucks;
  
- Sensitive areas to be protected;
- Importance of training and education as an important pollution prevention measure;
- Costs of pollution against costs of prevention;

### Introduction

Each hydrocarbons spill presents its own specific problems, varying according to meteorological conditions, the nature and volume of the spill, the location of the accident and what is being threatened.

Experience gained with maritime accidents which caused extensive pollution problems with hazardous substances, mainly hydrocarbons, has demonstrated that time and organisation are important factors if we want to be successful in combating a declared pollution situation. For that reason, a fast, adequate and efficient response is absolutely essential.

### Main Pollution Sources in the Marine Environment

Around 3,2 million tons per year of petroleum products are estimated to be released into the maritime environment, from several sources. The majority comes from land based activities, mainly from city industrial residues. Hydrocarbons from ship and offshore exploration spills are estimated at 0,47 million tons which, is relatively small amount when compared with the total figure.

Marine environment pollution sources (hydrocarbons), in percentage terms (ITOPF 1990)

INDUSTRIAL AND CITY DISCHARGES	37
DISCHARGES FROM NORMAL ACTIVITIES CARRIED OUT IN SHIPS	33
ACCIDENT CAUSED SPILLS FROM SHIPS	12
EMISSION FROM THE ATMOSPHERE TO THE SEA OF POLLUTANTS	9
NATURAL SOURCES SPILLS	7
"OFF-SHORE" EXPLORATION SPILLS	2

Polluting agents can be both State and Private.

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Among the Private agents ships have been the main polluters of the sea. The most significant black tides in the world, produced by crude oil, have been:

Main world black tides (ITOPF 1999)

SHIP	LOCATION	CAUSE	SPILT CARGO
"Atlantic Empress"	Tobago, 1979	Collision with VLCC	287.000 T of crude
"Castilho de Belver"	South Africa, 1983	--	252.000 T of crude
"Amoco Cadiz"	France, 1978	Run aground	223.000 T of crude
"Haven"	Itália, 1978	Explosion	144.000 T of crude
"Braer"	U.K., 1983	Engine failure	85.000 T of crude
"Sea Empress"	U.K., 1996	Run aground	72.000 T of crude
"Exxon Valdez"	Alaska, 1989	Run aground	37.000 T of crude
"Erika"	France, 1999	Run aground	

The Portuguese coast has already suffered the impact of black tides caused by tankers, such as:

Main black tides in Portugal

SHIP	LOCATION	CAUSE	SPILT CARGO
"Jacob Maersk"	Leixões, 1975	Explosion and fire	88.000 T of crude
"Marão"	Sines, 1989	Collision with dock	4.000 T of crude
"Aragon"	Porto Santo, 1989	Explosion	30.000 T of crude
"Cercal"	Leixões, 1994	Collision with dock	2.000 T of crude

We are still suffering the effects of important spills and we have no guarantee that they will not go on happening. A detailed study of these spills shows that around 84% of all spills from tankers are under 7 tons; the majority occur during routine operations such as loading, unloading and supplying and they normally happen in ports or terminals; around 91% of these spills are relatively small, under 7 tons; spills over 700 tons are only 4% of total spills; around 63% of spills of over 700 tons result from collisions and ships running aground (White 1996).

Spills by type of accident, between 1974 and 1998 (ITOPF 1999)

TYPE OF ACCIDENT	< 7 (Ton)	7 - 700 (Ton)	> 700 (Ton)	TOTAL
<b>OPERACIONAL</b>				
Loading and unloading	2756	291	17	3064
Supplying	541	24	0	565
Other operations	1162	47	0	1209
<b>ACCIDENTS</b>				
Collision	150	229	85	464
Running aground	219	191	103	513
Hull damage	552	73	40	665
Fires and Explosions	149	16	19	184
<b>OTHER</b>	2213	159	34	2406
<b>TOTAL</b>	7742	1030	298	9070

## Polluting Cargo

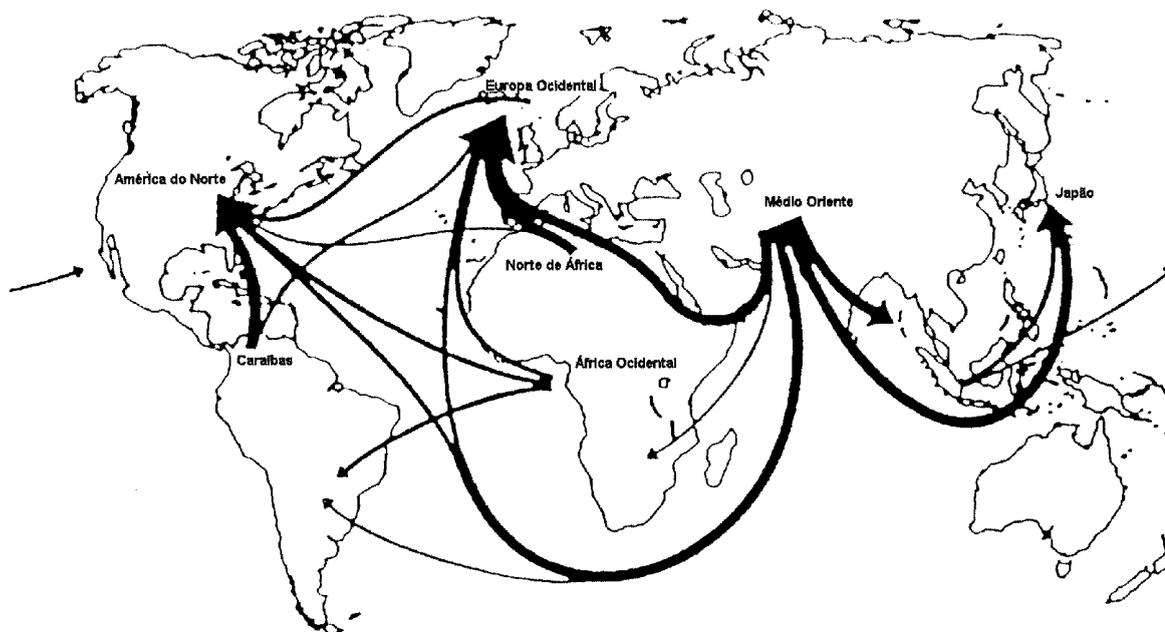
Transport of crude and fuel which are the basic fuel for power stations (Portugal has two big power stations using this hydrocarbon: Setúbal and Carregado) is the main concern in the protection of the marine environment.

These two products are the main hydrocarbons of the persistent group, so called because they are very difficult to eradicate, once they have been spilt, both by evaporation and by emulsion. They always have a serious effect on the coastal zones.

Dangerous or hazardous materials are not greatly visible pollutants, able to catch the media or the public's attention. However, the authorities responsible for the prevention and combat of marine pollution are developing activities in the fields of training, prevention and pollution control as part of the fight against the spills of such substances because they cause great damage to marine ecology and the atmosphere above the area where the chemical spills occur.

## Maritime transportation along the Portuguese coast as an alternative to land transportation by lorries

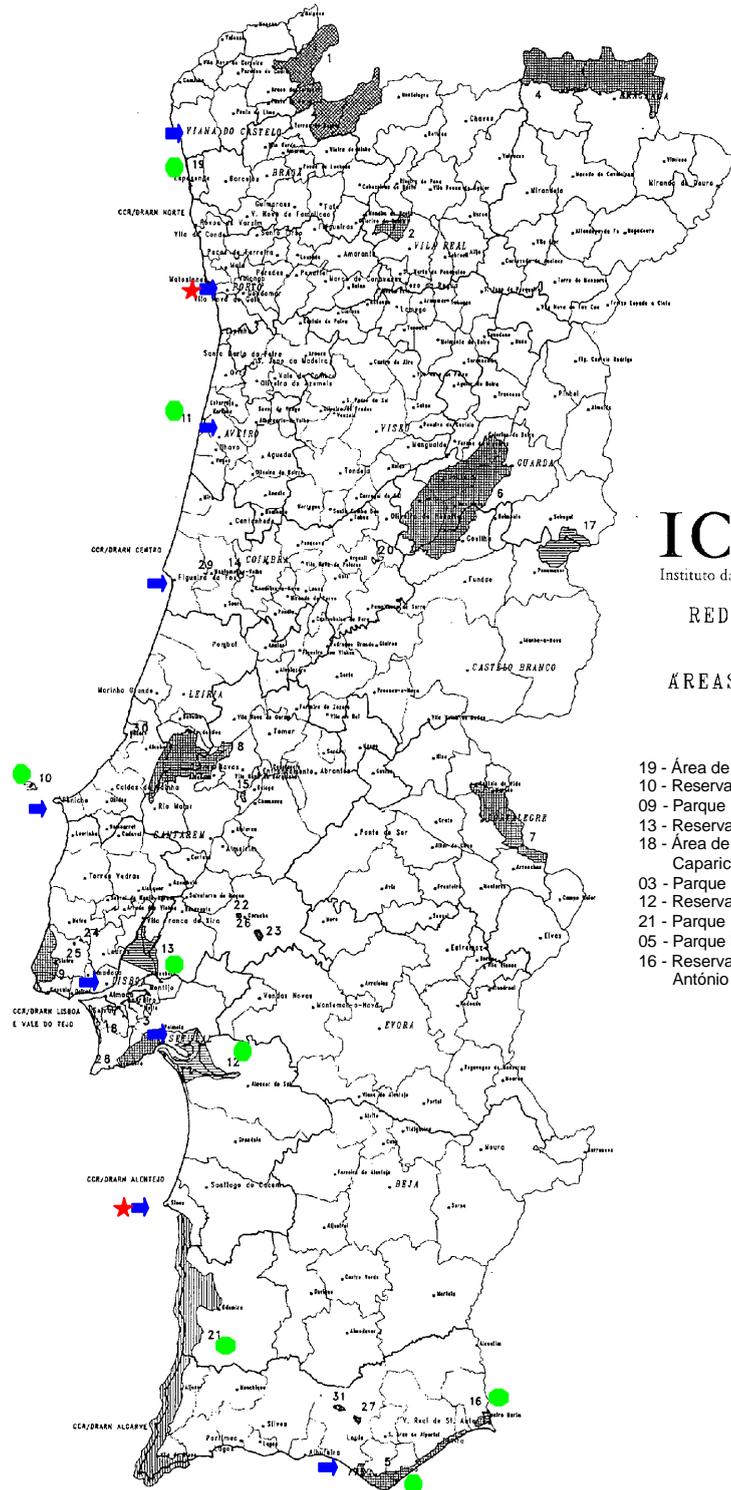
Nowadays, European coasts have the most saturated areas of world navigation. The following map shows the main maritime transport routes for oil (1987) (adapted from Frago, 1990 *in* Sousa, 1991).



## **Sensitive Areas to be Protected**

A number of protected areas were established in continental Portugal, some of them having a coastal component (See Map - ★oil terminals; 0main ports; ●protected areas). Two Marine Reserves have already been established: the Marine Reserve of Berlenga and the Marine Nature Park of Luís Saldanha (Nature Park of Arrábida).

All these areas may be considered as sensitive areas that need to be protected due to their special characteristics and the amount of maritime navigation along the Portuguese coast.



**ICN**   
 Instituto da Conservação da Natureza

**REDE NACIONAL  
 DE  
 ÁREAS PROTEGIDAS**

- 19 - Área de Paisagem Protegida do Litoral de Esposende
- 10 - Reserva Natural da Berlenga
- 09 - Parque Natural Sintra Cascais
- 13 - Reserva Natural do Estuário do Tejo
- 18 - Área de Paisagem Protegida da Arriba Fóssil da Costa da Caparica
- 03 - Parque Natural da Arrábida
- 12 - Reserva Natural do Estuário do Sado
- 21 - Parque Natural do Sudoeste Alentejano e Costa Vicentina
- 05 - Parque Natural da Ria Formosa
- 16 - Reserva Natural do Sapal de Castro Marim e Vila Real de Sto. António

## **Training, Practice and Drills**

They are the three key aspects of prevention and are essential for any kind of successful intervention against any marine pollution incident.

Emergency Plans, both local and national, are the necessary link for that success. In Portugal, the Plan Clean Sea Plan (Council of Ministers Resolution n.25/93, D.R. n.88, 15 April 1993) constitutes the --- of that action.

## **Pollution Costs**

The costs of each incident for the environment, both local and, sometimes, hundreds of miles from the incident, are well known worldwide.

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**WORKSHOP 2: THE WATER FRAMEWORK DIRECTIVE AND ITS IMPACT ON COASTAL ZONE  
MANAGEMENT**

**(ANNEX VII)**

**CHAIRMAN: ANTÓNIO GONÇALVES HENRIQUES**

**RAPPORTEUR: DIRK UYTENDAELE**

**PARTICIPANTS:** *Hubert DAVID; Eugénio SEQUEIRA; Tomasz WINNICKI; J. SMITZ; Joërg JANNING; Hanne Stensen CHRISTENSEN; Pirkko SELIN; Richard MACRORY; Agneta ANDERSSON; Marion HUGHES; Siv NÄSLUND; Mário BAPTISTA COELHO; Miguel POZO DE CASTRO; Steve GIBSON.*

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**The Water Framework Directive and its Implications for the Integrated Coastal  
Zone Management**

D. Miguel POZO DE CASTRO \*

**Abstract**

This communication is based on the text of the Common Position Paper (EC) N. 41/1999, dated the 22<sup>nd</sup> of October, approved by the Council for the European Union with a view of adopting the Directive establishing a Community framework for water policy and decision making. Whenever appropriate, reference is also made to Amendments approved by the European Parliament during the second reading of the Co-decision procedure, in a text dated 16 February 2000.

A description of what is understood by “Integrated Management of the Coastal Zone” is the first step taken, in order to centre the analysis of the possible implications of the Directive. For that purpose, basic reference is made to the criteria adopted by the “Guiding Legislation for the Sustainable Management of the Coastal Zones”, in its April 1999 version, both documents having been written by the Council of Europe.

Under this perspective a review of the Directive’s articles is made, underling the most innovative or relevant aspects. The implications for coastal management are analysed from the point of view of their contribution towards the following types of integration:

- Spatial integration or joint consideration of marine and land areas, including those inland areas that have a significant influence on coastal processes.
- Competence integration, that is, the competencies of the different levels of government (international, national, regional, local and administrative).
- Integration of planning and execution levels in all involved socio-economic levels.
- Integration of economic, environmental and social aspects.
- Integration, in terms of time, of the different provisions and plans, taking both short term and long term approaches.

The general conclusion that must be made is that the new Framework Directive on water policy represents a significant step forward towards the sustainable management of the coastal zone, since it favours a better integration at all levels, therefore improving the present situation.

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**WORKSHOP 3: SUSTAINABLE TOURISM  
(ANNEX VIII)**

**CHAIRMAN: JOÃO ALBINO SILVA**  
**RAPORTEUR: VICKY ETHERIDGE**

**PARTICIPANTS:** *László HARASZTHY; Frantisek KOLOCÁNY; Harriet LONKA; Margarida CANCELA DE ABREU; Jan VERHEEKE; Franc LOBNIK; Matjaz LOBNIK; Sanni MANNINEN; Jacques LARET; Daniel FIGUEIRA DA SILVA; Marta PASTOR; Marlene MARQUES.*

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**Tourism and Environment: Progress Towards Integration and Sustainability**

Domingo JIMÉNEZ-BELTRAN\*

**Abstract**

Recently, the European Council invited some of its respective Councils (Transport, Agriculture, Industry, Energy, Internal Market, Development) to work out strategies for integration of environment into their policies, as well as to set up reporting mechanism for the E.U. on progress towards sectoral integration. One of the aims is to develop regular indicator-based reporting through which the environmental performance of the specific sector and the progress made towards integration can be monitored. The indicator reports will be complemented by technical studies and focus reports on specific policy issues.

Although Tourism has not been so far targeted within this process, the issue of integrating environmental concerns into the development of the tourism sector has been recognised since the EU 5th Environmental Action programme. Moreover, when the Council approved in 1999 the Commission communication "Enhancing tourism's potential for employment", four priority areas were decided upon among which 'promoting environmental protection and sustainable development in tourism'.

Within this framework, the European Environment Agency issued in 1999, in consultation with Commission services, a management report on tourism and environment at European level that outlines a practical framework for assessing the issues and for the identification of relevant indicators.

Based on this specific report and on the main findings of other EEA big reports, namely the 'State and pressures of the marine and coastal Mediterranean Environment' and the 'EU environment at the turn of the Century' the need for an European framework will be highlighted, based on Indicators, having in consideration their characteristics.

The main problems faced by the development of the indicators will be focused, namely: a) a wide consultation with stakeholders is needed; b) up to now no relevant statistics are available, meaning that the projects here proposed will form the start of a new generation of tourism-environment statistics, in the context of global, European and national initiatives and mentioning the role of the players in a framework of regional development.

*Note: The opinions expressed by the speaker are of a personal nature and do not necessarily reflect the views of the EEA, the European Commission or any other Community Institution.*

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\* Executive Director – European Environmental Agency

## **Sustainable Tourism in Europe: The Need for an Integrated Approach**

Th.A.M. BECKERS\* & Ir. G.C. WEERNEKERS<sup>+</sup>

### **Introduction**

Tourism relationship with the environment is complex. Given its scale and global extent, it is inevitable that tourism has important impacts. These impacts are related to resource consumption, as well as to pollution and waste generated by tourism activities, including impacts from transport. At the same time, beaches and mountains, rivers, forests and biodiversity make the environment a basic resource upon which the tourism industry depends to thrive and grow, and threats to the environment threaten the viability of the tourism industry.

At the 6<sup>th</sup> Annual Conference of European Environmental Advisory Councils in 1998 sustainable tourism was on the agenda. Sustainable tourism must be defined broadly and a broad range of measures is to be taken. Guiding principles should be integrated in other policies, e.g. transport and infrastructure.

In January 1999, the United Nations (UNEP) published an addendum with a broad view on tourism and environmental protection. The main adverse impacts of tourism on the environment include pressure on natural resources in particular in regions such as the Mediterranean (land and landscape, marine resources, atmosphere, freshwater), harm to wildlife and habitats, pollution and wastes, social and cultural pressures. In the Netherlands the relation between tourism, nature and environment was put on the agenda since the publication of the advice 'Are we going too far' by the Dutch Council for Nature Policy in 1994. In 1999 a study is done with an evaluation and interpretation of the results of this advice. The Dutch example also leads to the general conclusion: a broad and integral approach is needed. In EU policy sustainable tourism as an issue does not have high priority. Some attention is given in the context of transport. Intentions are good, but practice needs more attention. Concrete measures still fail until now.

Tourism is one of the worlds most important economic sectors and one of the most dynamic as well. Governments and non-governmental organisations no longer can neglect the ecological costs and benefits of tourism. Environmental considerations should be incorporated in the decision making process and daily operations of policy makers and the private sector in tourism. The European Union should take its responsibility in developing and implementing policies and tools for environmentally-sound and nature-based tourism, within an integrated approach.

### **Sustainable tourism at the 6<sup>th</sup> EEAC Conference in 1998**

At the 6<sup>th</sup> annual conference of European Environmental Advisory Councils (17-19 September 1998 in Tuusula, Finland, organised by the Finnish Council for Environment and Natural resources) sustainable tourism was on the agenda. Experiences and views regarding 'Policy Integration and Implementation' were exchanged and discussed. Also present were representatives from DGXI and the European Environment Agency. On the conference special workshops were organised, one on Tourism and one on Transport and Infrastructure. Key issues and conclusions are:

1. Sustainable tourism must be defined broadly. Two aspects are important: recreational travel, and the 'environmental footprint', i.e. the local impacts on nature and landscapes.

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2. A broad range of measures is to be taken: improving knowledge and data, support to local communities, understanding between visitors and their hosts, diminishing social and environmental damage (an important task for the EU!), no support to non-sustainable forms of transport, reflect the real social and environmental costs, identify and bring together examples of good practice.
3. Eleven guiding principles must be employed to improve political decision-making on transport and infrastructure issues and to safeguard space and quality in urban and rural (tourist) areas: avoidance, precaution, careful decision making, translocation, (re)development, compensation, using best available technology and practice, polluter-pays, open information, public participation and self commitment and own responsibility.

### **Tourism and sustainable development: a broad approach is needed**

In January 1999, the Commission on Sustainable Development of the United Nations Environment Programme published 'Tourism and sustainable development' in accordance with arrangements agreed to by the Inter-Agency Committee on Sustainable Development. This publication is the result of consultation and information exchange between United Nations Agencies, international organisations, interested government agencies and a range of other institutions and individuals, and is based on the results of the Seventh session of the Commission on Sustainable Development, 19-30 April 1998.

It provides a broad view on Tourism and environmental protection (Environmental impacts on tourism, Environmental threats to tourism and Contribution of tourism on environmental conservation). Environmental policy challenges and recommendations are formulated for the tourist industry, for national Governments, for non-governmental organisations and for the international community.

Key issues and conclusions of the UNEP Commission on Sustainable Development in 1999 are:

1. Tourism and environmental protection needs a broad approach: environmental impacts on tourism (pressure on natural resources, harm to wildlife and habitats, the generation of pollution and wastes, and social and cultural pressures), environmental threats to tourism (global warming and rises in sea level, loss of biological diversity, damage to tourism sites and local air pollution), and contribution of tourism on environmental conservation (parks, protected areas, raising awareness and better understanding of costs and benefits). This broad approach is internationally recognised.
2. Environmental policy has challenges for the tourist industry, for national Governments, for non-governmental organisations and for the international community. The whole chain from consumers choices to management in destination areas is important. A broad range of measures is to be taken, e.g.:
  - promotion of environmental management of tourism facilities, environmental codes of conduct and ecolabels, raising awareness of tourists of the environment and social implications of their holidays and dialogue with the local communities are tasks for the tourism industry;
  - national strategies for sustainable tourism, appropriate regulatory mechanisms and tools, terrestrial and marine protected areas and support of voluntary initiatives by the tourist industry, further developing and implementing the legislative and policy frameworks, and raising awareness, building capacity and promoting effective action for sustainable tourism for the national governments;

- contribution to development and implementation of environmental standards, raising awareness and education is an important task for non-governmental organisations;
- developing partnership, use of economic instruments, involvement of tourism boards, focus on transport and monitoring are tasks for the international community.

The general conclusion can be drawn that the necessity of a broad and integrated approach is recognised that the intentions are good, but that the implementation of measures on national and international level is going (too) slow. The need of national, European and international measures is broadly recognised, but concrete steps are not yet officially made.

### **Focus on the Mediterranean**

In 1999 the UNEP Commission on Sustainable Development also focused on examples of sustainable tourism in the Mediterranean, with recommendations for action: financial mechanisms, pilot projects, capacity building for governments and organisations directed to sustainable development and measures to support sustainable tourism in island regions.

A group of experts on sustainable tourism, meeting at Antalya, Turkey, from 17 to 19 September 1998, under the framework of the Mediterranean Commission on Sustainable Development, highlighted the means to make sustainable tourism a reality for the region. The meeting considered conventions, framework agreements, procedures and protocols; financial mechanisms, such as taxes on the environment, tourism taxes, requirements to reinvest profits in regions with tourism installations, fines for non-compliance, subsidies for the environmental upgrading of facilities, development of agro-tourism and tourism development in difficult areas; technical assistance and advice; and land use planning and protective laws.

The meeting noted that efforts currently being put into such mechanisms throughout the region do not yet match the needs for widespread effective action, and the better integration of Mediterranean tourism with sustainable development demands major efforts on training, awareness-raising, and exchange of experience and best practice information, as well as organisation of the strong participation of the local population. Action is also needed on:

- Financial mechanisms to enable tourism sector to contribute to the quality of destinations.
- Network of pilot projects and establishment of a 'Mediterranean eco-label' for environmental quality of destinations and installations.
- Capacity-building for States, regions and tourist destinations to bring about successful integration of tourism with sustainable development.
- Measures to support tourism in the Mediterranean island regions.

Focused on the Mediterranean the conclusion can be drawn too: a broad and integrated approach of sustainable tourism is needed.

### **'Are we going too far?': a Dutch example**

Given the deterioration of nature and environment, the Dutch Council for Nature Policy has looked at the relationship between tourism, including eco-tourism, and nature and the environment. In 1994 the council published the advice 'Are we going too far?' as an aid for (further) discussion and reflection for the Government, for the tourist industry, for non-governmental organisations and for

the international community. Only on the basis of reflection on the (possible) effects of our tourist activities and alternatives naturally and environmentally friendly solutions can be stimulated and are people able to make their own choices in freedom and responsibility.

Key issues in the advice 'Are we going too far' (1994) are:

1. Tourism focusing on nature has similar negative and positive effects. The industry and nature conservationists have taken steps to try and control tourism. The concept of 'sustainable tourism' was introduced and activities were developed to work out the concept. The Council strongly supported a broad range of measures in the opinion that they should be promoted and introduced on a wider scale.
2. Many forms of tourism, particularly where flying is involved, go against the environmental principles and objectives as laid down in the National Environmental Policy Plan. These include: save energy (for future generations), environmental quality must not deteriorate, remove the causes of environmental damage at the source instead of fighting the symptoms, act on the 'polluter pays' principle, prevent unnecessary pollution, and make people individually responsible for the environment.
3. Address the problem at the source: consumers, producers and politicians. Focus on the question at the core of the problem: do we have to go and see everything, which seems attractive and interesting to us and at what price do we allow ourselves the space and freedom to do so? In line with the Rio Declaration this should be put high on the social and political agenda.
4. Pay more attention to outbound tourism in policy and policy papers. The government should make outbound tourism and its accompanying environmental effects a policy issue in the elaboration of the National Environmental Policy Plan.

Recommendations of the Dutch Council for Nature Policy in 1994 are:

1. Information should be made available to make people aware of the effects of tourism on the environment and give them opportunity to make an informed choice.
2. Arguing that people's consumption pattern should change drastically or that behaviour patterns in the area of outdoor recreation and tourism should be broken, is not enough. Government air traffic promoting policies should also change drastically, e.g. by the introduction of excise duties and an environmental levy ('ecotax') on kerosene.
3. In the context of the National Plan for Environmental Education a fundamental re-think should take place on tourism as a phenomenon covering the producer-side (the tourist industry) as well as the consumer-side (the tourist).
4. Holidays at home or at destinations that can be reached without the use of an aeroplane or motorcar should be promoted. In the development of recreational policies more attention should be given to activities in and around cities (walking, cycling, etc.). Activities that consume lots of not renewable energy and raw materials should be discouraged.
5. Ecotourism or nature-oriented recreation at home should be promoted. This can vary from recreating in urban surroundings (in national parks, e.g.) to recreating in the resilient nature of nature development areas. All forms of stay-at-home holidays (activity holidays, cultural trips etc.) should be promoted.

6. The possibilities of an eco-mark for the tourism industry should be studied (quality requirements, the use of 'ecotourism' might be protected).

## **Evaluation and interpretation of the Dutch example**

In 1999 in the Netherlands a study was done 'Explanations of sustainable consumption' by Globus, Institute for Globalisation and sustainable Development in Tilburg, by order of the Department of Environment, and in the context of the development of a new National Environmental Policy Plan. Part of the study was a case study 'Sustainable Tourism', containing an evaluation and interpretation of the results of the advice 'Are we going too far?'

Key issues in the evaluation and interpretation in 1999 are:

1. At first the Dutch travel and charter agencies reacted defensive and denied or trivialised environmental damage as a result of holidaying. But the opposition role of the tourism sector was soon replaced by a strategy towards co-operation and consultation. The tourism sector took control of the discussion with success and redefined the problem. Following the more progressive position of foreign colleagues, good care for the environment was presented as the natural capital in tourism development. The focus was more and more put on environmental care during the transport and on the development of environmentally friendly and nature-directed supply in destination areas.
2. The urgent advice to give higher priority to outgoing tourism in the context of the Dutch National Environmental Policy Plan has hardly had any effect. The impression is that the role of the Dutch government has been staying rather passive and has been restricted to consultation. Concrete policy measures and structural initiatives have been out of question.
3. A policy directed to the stimulation of sustainable development in tourism makes environmental innovations necessary in four areas:
  - 'modes of production', for example the development of sustainable alternatives or the changing of the rules of tourist offers;
  - 'modes of provision', for example information and education on environmental effects of the various ways of transport;
  - 'modes of access', for example the passing on of environmental costs in the prices of journey and residence;
  - 'modes of use', for example spatial zoning, an eco-quality-mark and environmental care systems in tourist accommodations.

The Dutch example also leads to the general conclusion: a broad and integrated approach is needed.

## **The European Environment: European Union Policy**

In EU-policy two different incentives can be seen. At one hand the EU formulates objectives and conditions for (sustainable) tourism, mostly in the context of papers or measures on transport. Sustainable tourism as such does not seem to be an issue with high priority on the agendas of the EC or the European Parliament. At the other hand the EU is - together with national governments and others - responsible for disturbing or destroying the environment, e.g. by developing new highways or airports in destination areas in the context of regional development.

Examples of papers on transport are:

*Transport; sustainable mobility: 2000-2004 action programme (EC) (COM (1998) 716 final; Not yet published in the Official Journal).* Objective is to implement a Common Transport Policy, which is safe, efficient, competitive and socially and environmentally friendly. The development of transport services must take account of their possible effects on the environment. So the Commission is giving priority to sustainable forms of transport. In accordance with the guidelines laid down at the Kyoto Conference, it will give particular attention to measures to limit the extent to which transport systems contribute to climate change. It will also tackle the problems of noise and other emissions from aircraft.

*Transport Charging; Common transport infrastructure charging framework in the European Union (EC)*

*(White Paper, COM (1998) 466 final; Not yet published in the Official Journal).* Objective is to show the need for gradual harmonisation at Community level for the charging principles applied in the various commercial modes of transport. The paper outlines the priority actions for the period 1998 - 2004.

To take into account the different situations of the various modes of transport in respect of Community legislation and the complex issues involved in developing new charges, the Commission advocates step-by-step implementation of the common charging framework. Three phases are proposed:

- 1998-2002: introduction of charging systems for railway infrastructure and airports;
- 2001-2004: harmonisation and adjustment of charging systems, in particular for heavy goods vehicles and rail transport;
- beyond 2004: revision of the Community framework in the light of experience drawn from the first two phases.

The White Paper outlines the priority actions to be taken in the first two stages. Apart from the development of consistent costing and accounting practices, measures are envisaged:

- for road transport: electronic charging, electronic fee collection systems, funding of road-pricing research, development of harmonised methods for determining road infrastructure costs, revision of State aid legislation, etc.;
- for rail transport: proposal for a directive on rail infrastructure charging, revision of State aid legislation;
- for inland waterways: revision of State aid legislation;
- for aviation: a) measures relating to air traffic services, covering air transport and the environment, the taxation of aviation fuel, pollution charges and levels, and the financing of air traffic management infrastructure, and b) measures relating to airports, covering airport charges, airport capacity and airport-cost developments in the EU;
- for maritime transport: increased transparency of port financing.

Measures are also planned in the field of transport-related tax policy. Finally, the White Paper gives a socio-economic evaluation of the proposed strategy, analysing the general economic effects, the distributional effects and the effects on peripheral or less developed regions.

But: a deadline for implementation of the legislation in the Member States is not applicable. A date of entry into force is also not applicable!

Key issues and conclusions are:

1. Sustainable tourism as an issue does not have high priority in EU policy; plans, documents or measures can hardly be found. Some attention is given in the context of transport.
2. Development of transport services must take account of their possible effects on the environment. The Commission is giving priority to sustainable forms of transport. In accordance with the guidelines laid down at the Kyoto Conference, it will give particular attention to measures to limit the extent to which transport systems contribute to climate change. It will also tackle the problems of noise and other emissions from aircraft.
3. The recent White Paper of the EU on Transport recognises to show the need for gradual harmonisation at Community level for the charging principles applied in the various commercial modes of transport.
4. The paper outlines the priority actions to be taken in the period 1998 - 2004. Deadline for implementation of the legislation in the Member States and date of entry into force are not applicable. On EU level the intentions are good, but practice needs more attention. Concrete measures still fail until now.

## Coastal Sustainable Tourism

Marta PASTOR\*

During the latest decades tourism has become one of the most important economic sectors. Tourism activity has an influence on hundreds of persons, is part of the quality of life of the citizens of many countries. Its good performance is one of the economic ratios in general. In Spain this information is more important because tourism represents more than the 10% of the Gross national Product, an annual income of 4,4 billion pesetas (more than 26.000 million euros) and generates more than one million jobs.

Lately sustainable growth has become part of every activity.

To all these assumptions, we have to add another one, the relationship between tourism and the environment is very close. Fortunately, those times when everything had its price and when the tourism destinations were created without taking into account the environment, are over.

Spain, one of the first tourist world powers, has also one of the greatest natural reserves in Europe. To marry both, tourism industry and the protection of the environment, is one of the aims of the Spanish administration.

The State Department of Economy and of Environment have assumed their responsibility and launched a Sustainable Tourism Programme. This programme was based in the "Plan de Estrategias y Actuaciones de la Administración General del Estado" on February 1997, and the "Acuerdo Marco de cooperación entre el Ministerio de economía y Hacienda y el Ministerio de Medio Ambiente para el desarrollo de un programa de turismo sostenible" on 23 April 1998. The latter document has been put into practice in the "Sustainable Tourism Plan" that was approved in the Sectorial Conference of Tourism the 1<sup>st</sup> of July 1998. All the administrations: State, autonomous communities and local have put into practice actions to achieve a sustainable tourism.

The Sustainable Tourism Plan is structured into five big programmes: Planning, environmental management, Tourism and Protected Natural areas, Training and International Relations.

In reference to the Planning in touristic destinations, the actions developed have been oriented to the environmental improvement through two mechanisms: the interdepartmental cooperation and the carrying out of new experiments in specific destinations.

The tourist chooses his holidays depending on the destination. That is why it is important to work on this level, because it has a great effect on the touristic experience. The programme is based on the achievement of a general view of the destination, that is; environmental development and quality of life for its inhabitants, planned on the long term.

The core of the project is to plan a global strategy for the development of the touristic activity, and not to react to specific Demand trends of the tourism supply. The latter situation can produce an excessive density in a certain destination, inadequate infrastructures and low economic rentability.

The programme foresees two big types of actions:

On one hand the actions in each destination. These actions have been developed by the State Secretary of Commerce and Tourism in coordination with the autonomous communities and the local

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\* Spain

administration, and they are called: Tourism Excellence Plans and Tourism Promotion plans. The first step to the implementation of one of the two plans is to define a Local Agenda 21. The Agenda 21 defines good sustainable practices, with special reference to the local level and the the necessity to integrate the environmental and development problems on the decision making.

The actions on each destination pursue a global strategy and it is based on the believe that the local administrations are the ones that have to liderate the proyectos. Two reasons support this argument, they have the competence for the application of many of the public policies to obtain a sustainable development, and in second place because they are the administration closest to the citizenship. However, this lidership has to be carried out with the other administrations and private ownership. The programme is put into practice with the signature of a colaboration agreement between the three administrations (General, autonomous and local), with a paritary founding, and the private ownership. The general and autonomous administration do not only contribute economically but also with its expertise, coordinating all the different proyectos that can be carried out in the same municipallity.

The process to choose a touristic destination to implement a Plan is as follows. Firstly, the local administration has to address a formal request to the Autonomous Administration. The request has to be completed with a memory that will describe the destination and its characteristics, the objectives pursued and the actions proposed, three years view, for the amelioratement of the destination. The autonomous communities are the ones that analyze the requests and address to the general State Administration the selection of destinations. The final decision depends on the quality of the proyect and its viability.

Due to financial restrictions is not possible to carry out all the necessary actions. The long term objective of the plans is to send the message to the entrepreneurship that there is a public compromise with the touristic activity of a particular destination and that is worthy to invest in it. In addition the two departments have compromise to ensure the inversion on those destinations choosen.

There can be distinguished two types of plans depending on the product: those tradicional destinations “sun and beach” and the emergent destinations with great touristic potencial.

### **Tourism Excellence Plans**

The traditional coastal destinations, those who began to develop on the 60’s and 70’s, have to have a special tratment because they are the prime touristic destinations. One of the biggest problems of these places is the overpopulation of their inner city, this problem affects the touristic experience and the environment.

These destinations are the most threatened by the development of new destinations more concerned with the environmental problems. The touristic buildings and infrastructures in other competitive countries with “sun and beach” products have low buildings, big green spaces and a quality view of the products. In a few years, the spanish tourism sector will be unable to compete with other countries because of the deterioration of the tourism buildings and infrastructure.

Because of the above and the believe of the amelioratement of the destinations, the State Secretary of Commerce and Tourism saw the necessity of carrying out global solutions that would integrate all the Administrations and touristic entrepreneurship. The aim of these plans is to promote the “excellence” on the touristic destinations considered globally, it is not a brand but more a way of perform in a particular place and produce a better result.

Since 1993 until now there have been signed these Plans:

**Baleares**

Calviá  
Menorca  
Alcudia  
San Antonio de Portmany

**Valencia-Murcia**

Gandía  
La Manga  
Peñíscola  
Mar menor  
Oropesa  
Águilas  
Mazarrón

**Andalucía**

Torremolinos  
Conil  
Tarifa  
Fuengirola

Roquetas de Mar

Málaga  
Almuñecar  
Benalmádena

**Canarias**

Valle de la Orotava  
Gran Canaria Sur  
Las Palmas de Gran Canaria

**Cornisa Cantábrica**

Llanes  
San Sebastian  
Ribadesella  
Bayona  
Laredo  
San Vicente de la Barquera  
Cataluña  
Calella  
Lloret  
Salou  
Cambrilis

The aims pursued with the Touristic Excellence Plans is to:

- Diversify the touristic supply.
- **Enlarge** the quality of the destinations, specially on the environment factors that affect the touristic satisfaction.
- To adequate the product to the Demand trends
- Lessening the seasonal effect of the touristic demand and supply.

These aims are pursued through programmes that describe those actions needed on each destination. The different projects included in the Excellence Plans can be grouped into five actions:

1.- Inner city refurbishment and surroundings, special reference to beaches. The types of projects are:

- Amelioratement of beaches.
- Equipment such as urban furniture, lightening, etc.
- Signposting.
- Accesibility: parkings, roads and highways etc.
- Embellishment: landscapes
- Inner city refurbishment: facades, the old parts of the city etc.
- Green areas.

2.- Diversification and enrichment of the tourist supply, basic elements for lessening the seasonal effect.

- Tourist Information offices creation.
- Museums
- Touristic pathways
- Complementary activities to the touristic ones; universities.
- Sport tourism: golf, navigation.

- Cultural activities: festivals
- Congressional tourism.

3.- Environment actions.

- Studies about environmental impact.
- Implementation of the Local Agenda 21
- Protection plans.
- Reafforestation and protection of natural areas.

4.- Training, promotion and awareness to the entrepreneurship, populations and tourists.

5.- Quality evaluation

- Implementation of an indicator system.

6.- Commercial actions.

### **Tourism Promotion Plans.**

The targets of the Tourism Promotion Plan programmes are those areas still developing a tourist industry and their objective is to accelerate their development but from a sustainable point of view. This is the case of areas with abundant resources concerning historical heritage and natural areas of considerable quality or beauty. Notwithstanding, it is necessary the existence of some type of tourist lodging, because the economic and social development depends on the possibility of staying in the destination at least for one night. Experience shows that many historical and natural areas are only visited, without an important spending on the destination.

There are two types of destinations targeted:

**Inner city tourism:** Those cities with an important historical heritage that do not attract tourism or those cities that attract tourism but with a very low spending on them. In addition negative impacts such as mismanagement and low quality of life threaten the sustainability of these destinations.

The problems given special attention are: historical heritage and arquitectonical buildings, the coordination of all the ones that participate on the **management of city tourism** and any aspect that can affect the environmental quality.

**Destinations with important natural areas:** is very important that the planning is made on the base of sustainability. The capacity is a very important element to take into account once we decide to build tourist infrastructure, without forgetting the environmental impact. The aims of the Tourism Promotion Plan are:

- Value added and touristic use of resources.
- Survey and design of the policies and strategies of the product, price, promotion and comercial.
- To strengthen the entrepreneurship.
- Creation of new products taking into account the environment
- Management of the resources, services and tourist supply on a particular destination.
- The Tourism Promotion Plan began on 1996 and until now there have been signed for the following :

**Aragón**  
Valle de Tena

**Extremadura**  
Zafra

Valle de Benasque  
Sierra de Gúdar  
**Cataluña**  
Valle de Boí  
Baix Empordá  
**Castilla y León**  
Cuéllar  
Peñafiel  
Ávila  
Segovia

Trujillo  
**Cornisa Cantábrica**  
Valle de Trubia  
Pobla de Trives  
**Madrid**  
Aranjuez  
**Castilla la Mancha**  
Cuenca  
**Andalucía**  
Axarquía

The actions developed on these kinds of Plans are:

1.- Value added and touristic use of resources:

- Embellishment
- Historic inner part of the city
- Tourist Signposting

2.- Environment Management

- Clean places
- Green areas
- Protection of natural areas

3.- Creation of new products

- Museums
- Tourist pathways.

4.- Strengthen the entrepreneurship

- Training of the entrepreneurship
- Economic aid.

5.- Cultural promotion

- Festivals, award of prizes.

6.- Management of the services supply

- Transport
- Information offices
- Commerce

7.- Design of the tourist development strategies and policies.

8.- Communication to the population.

1) The second programme concerns the environment management of the tourist companies and the local authorities. The tourist sector, relies on the use of the environment as a basic resource ( sun, beach, sea). Therefore, the success of a destination depends on the well conservation of its environment.

Without doubt , the first to know this are the tourist managers,however the public administration can't stay behind. Specially when some aspects such as noise, cleaning and public services are the ones that need more urgently a better management.

The guideline followed has been the implementation of the **EMAS**. This award is known all around Europe so it is easily recognised by the tourists. Other interesting characters of this award are: it is voluntary, the firm or municipality are the ones that establish their objectives, the aims and the results. In second place it is based on the communication to the public of the objectives and aims to reach.

The most developed project is the "Green Municipality", implemented between the General Secretariat of Tourism and the Federation of Municipalities. This project is pioneering in Europe. Since 1999 the aim is to implement this project in 10 municipalities more.

Another similar project is the environmental management project in Hotels, that wants the implementation of environmental management systems according to the community regulation 1836/93 in 17 hotels at the same time that the quality system. The following actions will take place on the first stage:

- Initial review of situation
- Training
- System design
- Training in each area
- Implementation of the environmental management system
- Workshops
- Presentation and Evaluation

On the second stage it will be developed a training system to design and implement the EMAS in 100 hotels. On the third stage there will be developed some tools to ameliorate the environmental management of hotels.

2) Tourism and natural protected areas. Lately a new tourism is emerging, that one that is concerned with the environment and the sustainable development. This type of tourism implies the enjoyment of the natural resources. More than three million hectare of protected natural areas have been visited by six million tourists. The environmental tourist management has to become, therefore, in a powerful tool for the sustainable development.

3) Tourist Training and sustainable development. The General Secretariat of tourism and the Official School of Tourism are making a great effort to communicate to the principal destinations the touristic policy, with special attention to the environmental problems. The training is focused on: authorities, Technical posts and managers

4) International Relations. It is very important to spread internationally the experiences on tourism and environment. In addition, all the different administrations are trying to have a common position for the elaboration of laws and International Conventions. During the last year Spain has liderate the Mediterranean Commission on Sustainable Development.

In reference to the Coastal Sustainable Tourism the law 22/1988 (28 July ) limit the property of lands near the sea to protect the environment. There are three limits: protection, passage, sea access.

Protection: It is referred to an area of 100 metres from the the shore to the land. This area can be, maximum, 100 metres larger, if that is the decision of the three administrations. In this area it is forbidden to:

- Build
- Construction or modification of transport
- Destrucción of dry goods.
- High voltage Electricity
- Residue

- Publicity

Passage: 6 meters from the shore to the land that should be left as pathways.

Sea access: To protect the beaches, the law foresees enough parkings far away from the shore and a correct signposting.

Influence areas: Ordination territoriality and town-planning over terrain include in this area whose wide will be 500 metres minimum from the interior of the beach, it will respect the requirements of protection of the public domain maritime-terrestrial through the next subjects:

- There will be a reservation of ground to leave the car in the zones of beach.
- The build will be adapted due to the legislation.

Too, on this area everybody will have the licence with the authorization to be able to do the disposal.

Respect to the public domain, it will be free, public and free of charge for the normal uses which have to do with the nature such as walk, fish, swim so and on. So, the uses which they can be dangerous, will be able to protect under the existence of reserve.

Use of beaches: it will not be of private use. Anyway the activities such as camping, publicity through of cartels, valleys, will be forbidden. The Administration of the State will have the tutelage and police.

So, the state can use the tutelage for the total or partial use of some competences of public domain maritime-terrestrial.

The adscription can be used of public domain maritime-terrestrial to the Communities for the build of new ports and transport route.

On the other hand, the activities will need a prior authorization although without need installations or works, these can be dangerous.

To finish its very important everything about the concession of public domain maritime-terrestrial.

So that everything told beforehand have an effect, truly, the consequences must be in disposition of the Administration to carry out a rule of penalties and sanctions.

With reference to the **growth of the population on the coastal zones**, a study from the University of Malaga shows a positive change on the perception of tourism, the reasons are:

The data of the economic growth of the area support this thesis. An example of the tourist positive effects is the repopulation of many rural areas. A paradigm of this situation has been the "Rincón de Victoria".

On Malaga, the population growth of the coastal zones has a great influence on the inside areas, this situation is not observed in other country towns such as Huelva or Almeria, where the municipalities far away from the sea are not influenced by the growth of the coastal areas.

The growth development in Malaga can last many years more as the working population represents more than the 60% of the total.

**WORKSHOP 4: MARINE PROTECTED AREAS AND NATURAL RESOURCES CONSERVATION  
(ANNEX IX)**

**CHAIRMAN: ANTÓNIO CRUZADO**

**RAPPORTEUR: ANTÓNIO DOMINGOS ABREU**

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**Marine Protected Areas and Natural Resources Conservation**

Luís VICENTE\*

**Presentation**

*Protected Area* is the common designation (although not completely correct) for *Specially Protected Natural Area*. This expression embodies the idea that, today, Nature as a whole, has (or should have) due to its intrinsic value, a permanent and global protection status, and that there are certain portions that are (or should be), for its great conservationist importance, subjected to a special protection status.

The establishment of an European network and national networks, in spite of local areas, of *Specially Protected Marine Areas* will improve the protection of rare species and habitats, and, moreover, will allow the conjunctly scientific monitoring of the coastal communities state.

The establishment of systems of *Specially Protected Marine Areas* has the following goals:

1. to maintain the ecological systems functional as Life support systems;
2. to preserve genetic diversity, which is dangerously impoverishing;
3. to assure the sustainable use, for us and for the future generations, of the species and ecosystems.

How to achieve these aims?

Is scientific knowledge necessary? What kind of scientific knowledge is required?

The adoption of measures concerning the coastal communities' conservation is urgent. What measures are needed?

The main sources of management problems are:

1. some resource uses are incompatible;
2. frequently, the difficulty in determining the use priority;
3. ignorance;
4. wrong previous decisions.

A crucial problem deals with the lack of definition concerning authority. Usually, it is the adoption of contradictory politics that leads to dramatic situations concerning Nature conservation.

It is urgent, in the European countries, the definition of one only organism with authority in this area, which decides on the use priorities. Is it utopic? Is a supranational legislation operational?

What should be the main features of a supranational legislation? And of the national laws?

What should the classification proposals include?

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## **Marine Protected Areas and Natural Resources Conservation Basis for their integration in a model for sustainable development**

António DOMINGOS ABREU<sup>1</sup>

### **Abstract**

Nature conservation and the conservation of the natural resources of coastal zones, as an essential foundation for sustainable development, implies the recognition of the need to **integrate in** sectoral and global policies a **set** of principles, knowledge, practices and other support systems to decision making. In this context, it should be considered a priority: **(a)** Knowledge of biodiversity and coastal natural systems; **(b)** Use of updated information systems on the state of the coastal zones environment; **(c)** Understanding the value of goods and services sustained by coastal ecosystems; **(d)** Previous evaluation and monitoring of impacts on coastal zones caused by different activities and pressures; **(e)** Valorisation and implementation of integrated management systems of marine protected areas; **(f)** Creation of mechanisms in order to allow the different actors and activity sectors, affecting coastal zones, to **participate in decision making processes**.

Despite its vast coastal area, Portugal has only recently begun establishing marine protected areas. Coastal Zone Planning Legislation, integrating and interacting with other actions and directives originated by commitments recognising the importance that Portugal gives today to the sea, must be instruments at the service of the sustainable development of the Portuguese coastal zones.

Due to their particular nature, coastal zones are a biophysical unit of very special characteristics that have allowed the settlement of populations and the development of human activities throughout the history of different civilisations. As a consequence of recognising that connection between coastal zones and their biophysical aptitudes, it has become urgent to develop initiatives that may help an integrated management of coastal zones, compatible with the population's economic and social development models.

From the onset, the need to know the structure of coastal environments has to be taken into consideration, both regarding predominant substrata and orographies and their specific biodiversity. Issues like the rise of the sea level and the safety of populations and activities in the coastal zones depend substantially on the state of conservation of coastal ecosystems and their natural structures and dynamics. Knowledge about the main biotic and abiotic characteristics of coastal environments provides the availability of relevant data, with multiple applications, such as:

- conservation of biodiversity;
- sustainable exploitation of stocks of species of commercial interest;
- establishment of a system of indicators on environment quality and, therefore, monitoring programmes;
- pollution control;
- biophysical planning

A growth of investment in the area of knowledge acquisition of marine coastal biodiversity is occurring in Portugal, namely through university research and work being done by some governmental services more directly related with fisheries, aquaculture and nature conservation.

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<sup>1</sup> National Council for Environment and Sustainable Development

However, information and data obtained until now are scattered, published in very specific scientific papers or not yet published. Adding to these gaps there is the absence of a system capable of integrating existing information and make it available to all potential users, both for scientific purposes and activities and for the management of protected areas. Due to the fact that there is no integration of information on marine systems, it becomes impossible to define environmental monitoring programmes, proposals for action in the field of natural resources management, as well as entertainment and education programmes based on the value of nature.

The establishment of marine protected areas may contribute significantly to a better awareness of the importance and value of coastal environments. There are several types of reasons for the establishment of marine protected areas but, in general, they all have the common aim of conservation, which can be oriented to specific goals, according to different operational options.

Some of these options and goals can be:

- Protection and management of ecosystems in a global perspective of biodiversity conservation;
- Protection of threatened habitats, species or populations;
- Protection of special areas, important for the life cycle of certain species;
- Protection of the marine environment against human activities taking place in coastal areas;
- Well-being of human populations;
- Development of research and knowledge acquisition on marine systems;
- Articulation between the different nature conservation programmes and economic and social development;
- Promotion of environmental education and information as participation instruments;
- Recuperation of damaged areas and ecosystems.

In Portugal, the establishment of marine protected areas is not advancing at a rate compatible with the importance of integrated management of the coastal zones, in the natural and social context of the country. Despite recent commitments recognising the need to have these instruments supporting an integrated management of the coastal area, the present situation tells us that we are still far from reaching the number and type of marine protected areas needed for Portugal.

The few marine protected areas that exist at the moment in Portugal were established through somehow isolated initiatives dealing with time or space related issues. The Nature Reserve of Garajau (Madeira), with the main objective of protecting a certain species of fish (Black Grouper – *Epinephelus guaza*) and the first two marine protected areas in continental Portugal (Arrábida and Berlengas), established at the time of the International Year of the Oceans (1998), are examples of these initiatives. They culminated a period of time when Portugal took on a particular role in the international community regarding the conservation of the marine environment. These two marine protected areas did not, however, take on an independent statute and were included in two great land reserves already in existence.

Taking into account the biophysical characteristics of the Portuguese coast, as well as the present guidelines for the establishment of marine protected areas, Portugal should consider the

establishment of an integrated system of marine reserves. Different statutes should be defined for these areas so as to ensure that the coastal ecological complexity that exists in Portugal is minimally represented. Looking at the determining factors for the establishment of protected areas, a network of marine reserves should consider as priorities the issues of biodiversity conservation, landscape and natural geological heritage sites protection, erosion prevention and population safety. The study and dissemination of local cultural values, normally associated to traditional activities such as traditional fishing, small businesses related to shellfish, gastronomy or small boat building must also be included in the operational objectives of marine protected areas, because of their potential value for environmental and cultural tourism.

Finally, marine protected areas must take into account their connection to the ocean and not limit themselves to coastal environments. The spirit of the Lisbon Principles on sustainable management of the Ocean must be highlighted here, namely in the context of global Ocean governance, able to integrate all actions and participants involved in the marine domain.

The elaboration and implementation of legal instruments for the biophysical planning, namely the Coastal Areas Management Plans, presently in the final stages of drafting, are important steps for an integrated management of coastal areas because they can integrate some of the above mentioned principles. Traditionally, territorial Management Plans are mainly directed at urban issues and do not recognise the fundamental role of the natural coastal systems in the definition of the capacities of the coastal areas. Because Coastal Areas Management Plans are able to recognise the specific characteristics of each segment of the Portuguese coast, they can be useful indicators for the definition of an integrated system of marine protected areas. The integration of nature conservation, as one of the priorities for a sustainable development model for the coastal areas, would then be possible, when considering the approval of planning regulations for the coastal zone. Protected marine areas would then take on an essential role.

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## Shellfish Exploitation and Nature Conservation in Dutch Coastal Waters

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### Abstract

Shellfish exploitation in Dutch coastal waters concerns mariculture of oysters (*Ostrea*, *Crassostrea*) and mussels (*Mytilus*), as well as fisheries for cockles (*Cerastoderma*), *Spisula* and *Ensis*. Part of the mussel culture is the fishery for seed mussels. Oyster and mussel cultures have been practised for more than a century, whereas the mechanised cockle fishery is about 25 years old. *Spisula* fishery is a recent development and the *Ensis* fishery is still in the experimental phase. Economically, the mussel culture is by far the most important industry with an annual result of about 60 million Euro.

From 1981 onwards nearly all Dutch inshore waters have been designated nature conservation areas. During the first years fisheries and nature conservation were able to exist together in relative harmony. This ended when a series of mild winters in 1988, 1989 and 1990 resulted in three consecutive years without spatfall of mussels and cockles. In this situation the shellfish industry virtually removed the last mussels and cockles from the coastal waters resulting in the disappearance of intertidal mussel beds and cockle beds and strongly increased mortality of mollusc feeding birds. Hence, nature conservationists required the shellfish industry to be stopped.

To solve this problem the Dutch government closed part of the coastal waters for shell fisheries and regulated the fishery in the remaining part by a system of co-management. In addition in years with low shellfish stocks 60% of the food required by the shellfish-feeding birds had to be preserved by the fishermen. To check whether this system would result in a reconciliation of fisheries and nature conservation a four-year research program was carried out.

However, in 1998, after this four-year period, the results of the research were largely inconclusive, partly due to the fact that two ice-winters during this period caused a large variance of the data. Nevertheless the government had to decide on further measures to reconcile shellfish exploitation and nature protection. Scientific evidence formed the base of the decision-making process. However, as a result of the nature of the null hypotheses formulated and the large variance of the data, most null hypotheses could not be rejected. This implies the possibility that type II errors (accepting a false null hypothesis) have occurred. Thus the benefit of the doubt in most cases went to fisheries. As a consequence of an existing policy of the Dutch government the precautionary principle has not been used in the decision-making.

Key words: *Cerastoderma edule*, cockle fishery, nature conservation, Dutch Wadden Sea

## Introduction

### *Shellfish: fisheries and cultures*

Shellfish have been fished in Dutch coastal waters (Fig. 1) since times immemorial. In the second part of the 19th century shellfish cultures were established for the European flat oyster (*Ostrea edulis* Linnaeus) and the blue mussel (*Mytilus edulis* Linnaeus). The flat oyster has disappeared completely, however, due to overexploitation, habitat change, and introduction of disease, and after experiments with various species of *Crassostrea*, the Japanese oyster *Crassostrea gigas* (Thunberg) is now cultivated. The mussel culture, however, is by far the most important with an average (1990-1996) nett added value per year of about Hfl. 125 million (= about Euro 60 million). This value includes the shore activities in packaging and trade.

At present fisheries exist for cockles (*Cerastoderma edule* (Linnaeus)), spisulas (*Spisula subtruncata* (Da Costa)) and razor clams (*Ensis americanus* (Binney)). The cockle fishery is by far the most

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important with an average nett added value per year of about Hfl. 40 million (= about Euro 20 million). Again this includes shore activities as well. *Spisulas* are the subject of a minor fishery, which developed recently, and the fishery for razor clams is still in an experimental phase following the accidental introduction of this species from North-America in the 1980s.

The remainder of this paper will pay some attention to the mussel culture and concentrate especially on the cockle fishery. The mussel culture developed from earlier mussel fisheries. It is based on the collection of mainly first-year seed mussels from wild beds, which are transplanted to culture lots situated mainly subtidally at the bottom of the coastal waters. After 1-3 years of growth the mussels are harvested from the plots, purified either in artificial basins or in the Oosterschelde estuary near Yerseke and sold (Fig. 2). Originally the mussel culture was concentrated in the Zeeland area in the SW-Netherlands, but after problems with the parasitic copepod *Mytilicola intestinalis* about 1950, part of the cultures was transferred to the Wadden Sea in the northern part of The Netherlands. At present the culture lots occupy about 65 km<sup>2</sup> in the Wadden Sea and about 40 km<sup>2</sup> in the Oosterschelde, being about 2.5% and 11 % of the total estuarine areas, respectively. The seed mussels are fished in a much larger area, however. Although dependent on abundance the exact locations differ from year to year, they may originate from the entire estuarine area. On average 80% used to come from subtidal locations and the remainder from musselbeds at the tidal flats (pers. comm. Dr. N. Dankers). About 60 firms are involved in the mussel culture; the number of firms is restricted by the number of available plots, which have to be rented from the state.

The cockle fishery originally was practised by hand-dredging in shallow water. In the sixties, however, suction dredges were developed and in the seventies and eighties shallow-draught vessels were specially built for suction-dredging cockles from the tidal flats at high tide. A single vessel is able to catch about 50 tons of cockles per hour; this represents a market value of about Hfl. 50,000 (= about Euro 25,000). Cockle fisheries are practised in all Dutch estuarine waters, provided that salinity is sufficiently high for the occurrence of cockles. A major difference with the fishery for seed mussels is that cockles occur almost exclusively in intertidal areas, so that is where the fishery is concentrated. Fig. 3 shows the annual harvest of the Dutch cockle fisheries in the period 1975-1998. 22 Firms with 23 vessels are involved in this fishery in 1998. The number of firms is restricted by a license system.

### *Nature protection*

Nature protection in the coastal waters of The Netherlands developed mainly after about 1975 (Wolff, 1997). In 1976 the Dutch government proposed to protect the Wadden Sea by a so-called >Key Decision on Physical Planning=. This act stated that the primary objective for the development of the Wadden Sea was its protection as a nature conservation area. Human activities, including shellfish culture and fisheries, were made subordinate to this primary objective, but in most cases could continue. For the mussel culture it was even explicitly stated that in the years to come an annual harvest of 100,000 tons from Oosterschelde and Wadden Sea together had to be possible. In 1980 the plans were accepted by Parliament. In 1981 1100 km<sup>2</sup> of mainly tidal flats were put under the Dutch Nature Conservation Act. As a political compromise fisheries were supposed to have a general exemption from the strict regulations of this act. In 1993 another 1500 km<sup>2</sup> of the Wadden Sea were given protected status under the Nature Conservation Act meaning that nearly the entire Wadden Sea was given protected status by law. In addition the Dutch Wadden Sea became a Ramsar site in 1984, a UNESCO Man and Biosphere Reserve in 1987, a Special Protection Area under the European Community Bird Directive in 1991 and a Special Area for Conservation (SAC) under the European Union Habitat Directive in 1998.

In the Zeeland area a policy document was adopted for the Oosterschelde estuary, the main area for shellfish, in 1982. It stated that first priority should be given to nature conservation. Subject to the requirements of conservation, fisheries and aquacultures should have second priority. Tourism and

recreation came third. In 1990, 222 km<sup>2</sup> of the Oosterschelde estuary were protected formally under the Nature Conservation Act, i.e. about 60% of the estuary. The Oosterschelde is also a Ramsar site.

### **Interaction of the shellfish industry and nature conservation**

Shellfish culture and fisheries in Dutch estuaries traditionally have been activities with few restrictions, except for some regulations in the interest of the industry itself. In the 1980s, however, the shellfish industry suddenly found itself in the middle of a protected nature area.

Based on scientific research nature conservationists had little difficulty in accepting the shellfish industry in the early 1980s. De Vlas (1982) investigated the ecological impact of the cockle fisheries and concluded that the fleet could cover maximally 3% of the total area of the estuaries per year. Within the area fished mortality of non-target species varied from a few to several tens of %, but recovery was rapid and usually took a few years only. Of the adult cockle stock a few percent were removed in good years, in average years about 10% and possibly several tens of percents in meagre years. De Vlas (1982) supposed that in the latter type of years cockle fishermen might be competitors with mollusc feeding birds such as oystercatchers (*Haematopus ostralegus*) and eider duck (*Somateria mollissima*). Data to support the latter conclusion were lacking at that time, however. Wolff & Binsbergen (1985) in a brochure on the management and protection of the Wadden Sea stated that in principle the shellfish industry in the protected area is acceptable. What matters is the scale and the place of the activities, they wrote.

This perception of the shellfish industry changed around 1990. Beukema (1993) wrote: AIn the course of 1990, stocks of mussels (...) declined to unprecedentedly low levels in the Dutch Wadden Sea. Hardly a wild mussel bed was left on the tidal flats as a consequence of three years (1988, 1989, 1990) with failing recruitment and intensive fishing for seed mussels. During these three years recruitment of cockles also failed, whereas fishing was continued. (...) oystercatcher and eider experienced food shortage. Significant numbers of eiders left the Dutch Wadden Sea or died, whereas oystercatchers remained abundant throughout the winter in most of the Dutch Wadden Sea. Alternative prey species [of oystercatchers] in the Dutch Wadden Sea experienced unusually high mortality rates in the appropriate size classes@.

Now the conservationists became aware of the strong impact the shellfish industry could have. Intertidal musselbeds, a common feature of the tidal flats, had been fished away nearly completely. Intertidal seagrass beds, a rare type of vegetation, were seriously damaged. Shellfish feeding birds, such as eider duck and oystercatcher, showed enhanced mortality. Because of these developments the conservation organisations pleaded for regulatory measures by the Dutch government.

### **New regulations**

In 1992 the Minister of Agriculture, Nature Conservation and Fisheries proposed a new policy for the period 1993-1997 with, among others, the following measures:

- 26% of the intertidal flats of the Wadden Sea and 15% of those of the Oosterschelde estuary would be closed completely to fisheries;
- for the remaining area the fishermen had to develop a management plan (co-management) not only to regulate fisheries but also to protect and restore natural values such as intertidal mussel beds and seagrass beds;

- in years with a low shellfish stock 70% of the food requirements (cockles and mussels) of two shellfish-feeding birds, viz. oystercatcher and eider duck, had to be safeguarded for the birds; the fishery would be closed if less than this quantity was available;
- ecological studies should be carried out to decide whether the measures led to improvement of the damaged ecosystem;
- in 1998 it should be decided whether the restrictions on the shellfish industry should remain, or should be tightened or loosened.

In 1993 the Dutch Parliament approved the new policy, but also decided that a reservation of 60% of the shellfish stock was enough for the birds.

In 1993-94 the general government policy for the protection and management of the Wadden Sea (PKB, 1993, 1994) was reviewed as well. This policy document introduces the precautionary principle for new activities: > ... if the best available information results in doubts about the absence of possibly important negative effects on the ecosystem, the benefit of the doubt will act in favour of the preservation of the Wadden Sea ...=. In the case of shellfish exploitation the precautionary principle has not been applied in 1992-93. Two factors may have played a part in this: (1) the shellfish industry was an existing activity which had acquired legal rights because it existed before the protective measures were introduced, and (2) the government may have believed that the effects of shellfish exploitation were known well enough (e.g., De Vlas, 1982; Beukema, 1993) and that the only problem was to restore the damage done in the years 1988-90.

### **Research to evaluate the effects of the new regulations on shellfish exploitation**

The research required by the Minister of Fisheries was carried out by four government institutions, viz. the Institute for Forestry and Nature Research (an institute for nature conservation research), the Institute for Agricultural Economics, the National Institute for Fisheries Research, and the National Institute for Coastal and Marine Management.

The aims of the research to evaluate the effects of regulations on shellfish exploitation were: (1) to determine if the measures taken would lead to restoration of the original state of the Wadden Sea and Oosterschelde ecosystems; and (2) to see if the safeguarding of 60% of the bird food was sufficient to prevent excessive bird mortality.

However, with regard to the first question it appears that these ecosystems do not possess a single original state. Under the influence of climatic differences between seasons and years and of tides and waves the systems are continuously changing. So there was no description available of **the** original state of the ecosystem, although descriptions existed of former states. The obvious solution was to look for a control area. However, due to the widespread impact of the fisheries around 1990 no such undisturbed control area was available. So, it was decided to compare the developments in the areas completely closed for the fisheries with those in the areas still open. The reasoning behind this was that developments in the closed area most likely would be into the direction of the undisturbed state.

The null hypothesis was that for most parameters, except for the biomass of cockles, no differences would be found between areas closed and open to the fisheries. Significant positive differences between closed and open areas would imply restoration of damage in the closed areas, but also a negative effect of the fisheries in the open areas. For the seagrass and mussel beds another hypothesis, viz. an increasing area of these habitats, might be considered as well. For the closed areas this implies an earlier effect of fisheries; for the open areas it means that the new regulations do have the required

positive effect on nature values. In both cases the null hypothesis would be that the area of musselbeds and that of seagrass beds did not change between years.

With regard to the second research question, - the effect of 60% food reservation for the birds-, the (null) hypothesis to be tested was that the availability of at least 60% of the available food, would not result in higher bird mortality than average. A second null hypothesis was that lower bird numbers than average in the entire Dutch Wadden Sea would not occur.

It was decided that, among others, the following items should be studied:

- occurrence and development of seagrass beds;
- occurrence and development of intertidal mussel beds;
- biomass of cockles;
- biomass of possible alternative bird prey species, such as *Macoma balthica*;
- bird densities on the tidal flats at low tide;
- bird numbers on the high tide roosts at high tide;

Beforehand, it was realised that a study period of four years might be too short to observe restoration of an >original = situation, because The Netherlands experience winters with ice in the estuaries on average every 5-10 years. In such winters the ecological situation in the estuaries is thoroughly disturbed and this, of course, might lead to data with a large variance in the planned study. Such data might lead to inconclusive results. Especially to cover this situation a simulation model of the bird - fisheries interaction was to be developed as a back-up.

## **Conclusions of the research to evaluate the effects of new regulations on shellfish exploitation**

In 1997 the results of the study could be summarised as follows (Anonymous, 1998; Smit *et al.*, 1998):

- natural factors such as low recruitment of shellfish, cold winters, and storms had a considerable impact on the development of the populations of shellfish and those of shellfish-feeding birds;
- because of low shellfish stocks as well as self-adopted management rules of the fishing industry the larger part of the area open for fisheries was not fished for cockles and mussels. In particular, the fishermen avoided seagrass beds and places where intertidal musselbeds were likely to develop. A quota system for seed mussels resulted in a much higher efficiency of the cultures and, hence, a lower demand for seed mussels;
- although intertidal musselbeds had hardly been fished, musselbeds had only partly come back both in the closed and open areas; in 1990-92 about 0.1 km<sup>2</sup> of an original 40 km<sup>2</sup> was left; in 1997 some 10-20 km<sup>2</sup> had returned;
- the standing stock of cockles remained in the period 1993-1997 at a lower level than in the period before 1988. Fishing for cockles occurred in 1993, 1994, and 1995 only. In the closed areas cockle densities were higher than in the open areas;
- in the period 1993-1997 the number of oystercatchers was lower than in the period 1980-1990. Mortality of first-year oystercatchers had increased. The positive effect of the 60% food reservation for birds could not be demonstrated because in 1992 and 1997 less than 60% was available (and the fishery was not opened at all);
- eider ducks did not show high mortality after 1991-92, but the total number in the Dutch Wadden Sea was about 30,000 (about 20%) less than in previous years. The earlier growth of the Dutch breeding population had come to a halt or even turned into a decrease.
- seagrass beds had slightly increased in both the closed and the open areas;
- the cockle industry experienced a period with negative economic results, due both to low cockle stocks and the restrictions on the fishery;

- the mussel industry experienced a period with relatively positive economic results.

Although we have no evidence that the fishermen did not carry out the regulations, the ecological field study largely failed to demonstrate a positive effect on the ecosystem. Simulations with simple models showed a clear positive development, but with regard to the field situation this outcome apparently is unrealistic. More realistic models are still under development but require much additional field and laboratory work to achieve a sufficient extent of realism.

An important cause of the unclear outcome of the study was that during the four-year study period two extremely cold winters occurred. This was an unlikely scenario, but it did happen.

## Two additional studies

Nève & van Noordwijk (1997) in a study commissioned by a Dutch conservation organisation, and carried out by the Netherlands Institute of Ecology of the Royal Netherlands Academy of Arts and Sciences, reported on oystercatcher mortality rates derived from ring recoveries in the period 1980-1996. This allowed estimates of mortality rates up to 1994. They found that oystercatcher survival rate is mainly determined by the abundance of mussels and the number of frost days per winter. In addition they showed a clear increasing trend of mortality in the period under study. Although these results are in agreement with the field observations on mussel density in the Wadden Sea, the study unfortunately hardly overlaps with the study described above on the effects of new regulations.

The production of a second report (Piersma & Koolhaas, 1997), paid by two private conservation organisations, resulted as a side-product from nearly 10 years of research by the Netherlands Institute for Sea Research, an institute run by the Netherlands Science Foundation. Based on extensive data it developed the hypothesis that intensive fishery for shellfish around the island of Griend in the Wadden Sea in 1988-1990 had resulted in changes of the sediment texture which in turn led to strongly reduced settlement of various bivalves and consequently much lower bivalve stocks and strongly reduced numbers of bivalve-feeding birds. The nature of the data did not allow a rigorous test of this hypothesis, however. Piersma & Koolhaas (1997) suggested that ultimately this >negative biodepository spiral= might affect the entire Wadden Sea. They underpinned their suggestion with numerous references showing that overexploitation in fisheries may result in destruction of the resource. Finally they suggested that as a precautionary measure the shellfish industry should be banned from the Wadden Sea.

The shellfish industry paid for a contra-expertise (Duiker *et al.*, 1998) which concluded that a change of the sediment texture could not be proven with the existing data. At the same time this contra-expertise concluded that more study was required to give a final answer.

The study by Piersma and Koolhaas (1997) suggests a series of hypotheses to be tested, the most crucial one being the change of sediment texture. In all cases the null hypothesis is that no changes occur when comparing before and after fisheries.

## Decision making

### *Evaluation report*

The report *Evaluation of the measures in the coastal fisheries during the first phase (1993-1997)* (Anonymous, 1998) presents mainly the conclusions of the research carried out by the four government institutes, but it incorporates the conclusions of the report by Nève & van Noordwijk (1997) commissioned by a conservation organisation. The >government= report was written by a team of government officers from both the fisheries and the nature conservation departments. The conclusions

were discussed in a larger group with representatives of various government agencies, the research institutes, fisheries organisations, and private nature conservation organisations. This resulted in a set of conclusions, which could be supported by most participants. No attention was paid to uncertainties with possibly far-reaching consequences. Possible statistical errors were not discussed. No advice was given on the policy for the next period.

#### *Report shellfish industry*

The government department for fisheries had contributed to the report cited above and thus could not have any diverging views. The shellfish industry presented a report (Produktschap Vis, 1998) with the view of the fishermen on the developments. They largely agreed with the conclusions of the evaluation report, they stressed that the industry had carried out all regulations as required and they proposed (1) to carry on the management policy of the period 1993-1997 and (2) to find compensation for the economic damage of the cockle industry.

#### *Viewpoints from nature conservation*

The government organisation for nature conservation had contributed to the >Evaluation report= cited above and thus could not have any diverging views. However, in The Netherlands private conservation organisations traditionally have a large influence on conservation policy of the government. In the case of shell fisheries several voices were heard. The federation of private environmental organisations in the Province of Zeeland, where the Oosterschelde estuary is situated, as well as the influential Wadden Sea Society more or less agreed with the conclusions of the >Evaluation report=. The Dutch branch of Bird Life International, however, based itself on the study by Piersma & Koolhaas (1997) and required the termination of shell fisheries in the Wadden Sea. This viewpoint of BirdLife International was elucidated by the authors of the latter report in a series of publications in Dutch periodicals. Their reasoning was that the Dutch government is working along the line that shell fisheries can proceed as long as it cannot be demonstrated that they have a negative effect on nature conservation values. However, Piersma and Koolhaas (l.c.) suggest that the possible damage by the shell fisheries is not well investigated. In statistical terms this means that the chance of committing a Type-I error (erroneously concluding that there is an effect) is minimised. Instead, they suggest, a Type-II error (erroneously concluding there is no effect) should be minimised, since irreparable damage might be inflicted on the protected Wadden Sea ecosystem. In addition Piersma and Koolhaas advocate that the government should use the precautionary principle, because there is reason to assume that damage to the Wadden Sea ecosystem occurs, although there is not yet scientific evidence to prove this.

#### *Advice Wadden Sea Advisory Council*

In relation to the protective measures for the Wadden Sea a =Wadden Sea Advisory Council= has been established. This Council consisting of representants of various societal groups as well as a few scientists advises the government on all policy matters with respect to the Wadden Sea. The Council based itself on the government report and concluded (Waddenadviesraad, 1998) that the government policy to reduce the impact of shellfish exploitation on the Wadden Sea ecosystem, had been successful. The Council advised to continue the policy of the previous period as well as the monitoring of the ecological impact of the shellfish activities until 2003. In addition the Council advised to continue the studies into the ecological effects of shellfish exploitation since it was felt that these are insufficiently understood. The Council neither wanted, at least not explicitly, to demonstrate that shellfish activities do not cause damage, nor did it mention the precautionary principle.

#### *Advice Council for the Rural Area*

The Council for the Rural Area advises the Minister of Agriculture, Nature Conservation and Fisheries on all relevant policy matters. It also advised on the policy for shell fisheries in the Dutch coastal waters (RLG, 1998). In doing so it based itself on all available scientific evidence, both from the side of government and from the side of nature conservation. A general conclusion of the Council was that human interventions in protected nature areas should not be allowed, unless it can be shown that no damage will be caused to nature. Fisheries in coastal waters, however, have acquired legal rights because they existed before conservation legislation was introduced. Thus the Council concluded that fisheries in Dutch coastal waters protected as nature areas should be allowed, although this may not apply to all types of fishery. The Council saw no problems with shrimp fisheries and oyster cultures. Mussel culture can be accepted provided that seed mussels are fished in subtidal areas. Artisanal fisheries for cockles can be accepted because of the limited size of this fishery. However, the Council believed that mechanised fishery for cockles cannot be reconciled with the protection of nature in the coastal waters. Because of the technical development of this fishery and the fact that nearly all cockles occur on the tidal flats few opportunities seem to exist for a solution. The Council concluded that the scientific results do not show clearly enough that fishery for cockles causes irreparable damage, but at the same time the Council recommends to continue the scientific studies for another 6 years to make probable that the cockle fishery **does not cause** damage to protected areas. If this is not possible the cockle fisheries should be terminated two years later. The Council does not mention the precautionary principle.

*Conclusion by the Minister of Agriculture, Nature Conservation and Fisheries*

The Minister of Agriculture, Nature Conservation and Fisheries (1998a, b) concluded that

- < restoration of intertidal musselbeds should be aimed for;
- < the preservation of 60% of the food demand of the birds had worked;
- < the shellfish industry had shown impeccable behaviour, although the cockle fisheries had experienced economic damage.

He thus wanted:

- < to make an extra effort to restore intertidal musselbeds;
- < no fishing in vulnerable habitats such as intertidal mussel beds and seagrass beds;
- < to continue the earlier zoning measures (closure of 26% of the Wadden Sea and 15% of the Oosterschelde estuary), with some additions;
- < to restrict fisheries in all other areas; seed mussels should be fished on the tidal flats only if there is no seed available in the tidal channels;
- < to continue his policy to preserve 60% of the food demand of shellfish-feeding birds;
- < to continue his policy with regard to the artisanal cockle fishermen, i.e., these fishers can continue their trade;
- < to start another 6 year monitoring and research programme, especially to provide an answer about the damage caused by the cockle fisheries in order to decide on the future of this fishery.

Hence the Minister accepted the results of the research he commissioned. In addition, for the mechanised cockle fishery he shifted the burden of proof as suggested by the nature conservation organisations and, as recommended by the Council for the Rural Area, he commissioned another 6 year research period to make probable that the cockle fishery does not cause damage. The Minister did not refer to the precautionary principle.

*Conclusion of the Parliament*

The Permanent Committee for Agriculture, Nature Conservation and Fisheries of the Netherlands Parliament discussed the note of the Minister mentioned above. Parliamentarians of six different parties

presented their views. All accepted the scientific conclusions of the >official= Evaluation Report and the advice of the Council for the Rural Area. They differed, however, in the policy conclusions they connected to the scientific evidence. None of the parties invoked the precautionary principle. In the end, the policy of the Minister was supported.

## Discussion and conclusions

In the discussions on the acceptability of cockle fishery several different hypotheses, and hence several different null hypotheses, were used explicitly or implicitly (Table 1). The testing of these hypotheses is subject to errors. In all cases the null hypothesis could be true but nevertheless rejected because of a rather improbable statistical outcome. The rejection of a true null hypothesis is called a Type I statistical error. Alternatively, it is possible that we accept the null hypothesis, although it is not true. This acceptance of a false null hypothesis is called a Type II statistical error (Sokal & Rohlf, 1969).

Table 1 shows which viewpoint, - fisheries or nature conservation -, would profit from different possible outcomes of the tests of the various hypotheses. For example, what would be the effect of a Type I error (erroneously concluding there is an effect) for the first hypothesis? In that case we would conclude that the fishing industry had an effect, most likely a negative effect, on the restoration of the Wadden Sea ecosystem. This would support the viewpoint of nature conservation.

The original study commissioned by the government set out to demonstrate that a particular management policy for the shellfish industry in the protected nature areas formed by the estuaries of The Netherlands did result in restoration of lost values of nature protection. Already at the beginning it was made clear by the institutes charged with this task that such a study stood a fair chance of being inconclusive because of a too large variance of the data due to cold winters. However, the government first decided that ecological research had to result in conclusions within four years and next asked its scientists how they expected to do that.

However, what would be the effect of data with a large variance? Most likely is that most or all null hypotheses were accepted. In this situation a Type II error is quite possible, i.e. that in several or even all cases we draw the erroneous conclusion that no effect occurs, although in fact an effect is present. If this occurred it would be mainly in favour of fisheries and, hence, negative for conservation interests. In this investigation a Type-I error (erroneously concluding that an effect of fisheries occurs; such a conclusion in most cases would favour conservation) is less likely due to the large variability of the system investigated and the limited research capacity.

Table 1 also shows the inequality between fisheries and nature conservation with regard to the null hypotheses. This is caused to a large extent by the fact that only null hypotheses can be defined which are based on the assumption of no effect. There exists no information allowing to defining other null hypotheses in quantitative terms, although this could be done arbitrarily, of course. The only solution would be to aim for large power of the statistical tests used (Sokal & Rohlf, 1969; Peterman & M=Gonigle, 1992; Dayton *et al.*, 1995).

The official report explicitly or implicitly used most of the hypotheses formulated above. The benefit of the doubt thus mainly went to fisheries.

The two advisory councils based their advice on the results of the scientific research and tried to find a logical conclusion in case of conflicting evidence. For the situation at hand they did not want to conclude that the shellfish industry caused irreparable damage (they did not want to make a Type-I error), but the Advisory Council for the Rural Area advised to use the next 6 years for a study to make probable that cockle fishery does not damage the ecosystem (thus a Type-II error should be minimised). Both Councils did not refer to the precautionary principle.

The Minister of Agriculture, Nature Conservation and Fisheries and the Parliament accepted the results of the research commissioned and thus implicitly the possible minimisation of a Type-I error. In addition the Minister took into account the possibility of a Type-II error, since he commissioned another 6 year research period to determine whether the cockle fishery possibly causes damage. The Minister did not refer to the precautionary principle.

The above paragraphs also show the importance of the phrasing of the research question. The government (and the shellfish industry) believed that nature could be sufficiently protected in combination with fisheries for shellfish; they thus wanted to know whether new regulations for the shellfish industry would lead to restoration of lost natural values. (Some of) the nature conservation organisations and scientists believed that nature protection cannot be reconciled with the shellfish industry; thus they wanted to make probable that the shellfish industry caused irreparable damage. It is interesting to see that for the cockle fisheries the government moved from its original point of view towards that of the conservation organisations. It now has to be made probable that the cockle fishery does not cause damage.

\* Raad Voor Hat Landlijk Gebied – Council for the Rural Area - Netherlands

**Table 1. Who gets the benefit? For each null hypothesis mentioned in this paper (see text) it is indicated which party, - fisheries or nature conservation -, profits from a certain outcome of statistical tests. >Accepted= = acceptance of a true null hypothesis; >Type I error= = rejection of a true null hypothesis; >Type II error= = acceptance of a false null hypothesis.**

Null hypothesis	Acceptance	Type I error	Type II error
No increase of musselbeds in areas open to fishery	CONS.	FISH.	CONS.
No increase of musselbeds in areas closed to fishery	FISH.	CONS.	FISH.
Development open and closed areas equal	FISH.	CONS.	FISH.
No difference in bird mortality	FISH.	CONS.	FISH.
No difference in bird numbers in areas open to fishery	FISH.	CONS.	FISH.
No difference in bird numbers in areas closed to fishery	(CONS?)	(FIS?)	(CON?)
No difference in sediment texture before and after fish.	FISH.	CONS.	FISH.
No difference in biota before and after fishery	FISH.	CONS.	FISH.

#### Figure legends

Fig. 1. Map of the Netherlands showing coastal waters and estuaries used for shellfish culture and fisheries.

Fig. 2. Annual results of the Dutch mussel culture expressed as tons \* 1000 wet weight.

Fig. 3. Annual results of the Dutch cockle fisheries expressed as tons \* 1000 wet weight.

## Integration of Environmental Considerations in the Common Fisheries Policy

Sue COLLINS\*

### Abstract

Fishing is the most widespread human activity in the marine environment and has a significant effect on the marine ecosystem. Most commercially important fish species are over exploited and many are at historically low levels. In many cases their present rates of exploitation are considered by fisheries scientist to be unsustainable.

Some current fisheries practices also result in unwanted by-catches of marine mammals, seabirds and benthic species and the physical action of some fishing methods has altered sea bed habitats. This has led to long term changes in species biodiversity. Ultimately there is the possibility of economic or biological extinction of species from some European waters.

The existing Common Fisheries Policy (CFP) regime, which provides the European legislative and institutional framework for fisheries management, completes its twenty-year term in 2002. There is heightened urgency for changing the way we manage fisheries and debate has already begun on the future of the CFP.

The UK statutory nature conservation agencies are undertaking joint work aimed at influencing the CFP so that it is reformed to take account of environmental considerations and reduces damage to the marine ecosystem.

### Introduction

The review of the CFP in 2002 is seen as a significant opportunity to influence the inclusion of environmental considerations within European fisheries policy. The Commission is only legally obliged to review a relatively small part of the CFP - the "Shetland box" and access to the 6 and 12 miles zones. However, the Commission are presently undertaking a more comprehensive analysis of the policy and have stated that open dialogue across all interest groups can contribute to building a CFP for the future.

It is widely acknowledged by all the stakeholders that changes are required to the CFP, which secure the livelihoods of fishermen and the conservation of marine species and habitats. It is also recognised that achieving such changes presents formidable challenges.

The UK statutory conservation agencies - English Nature (EN), the Countryside Council for Wales (CCW), Scottish Natural Heritage (SNH) and the Joint Nature Conservation Committee (JNCC) - established a fisheries working group in the early 1990's. This group has used its combined specialisms and experience to inform the development of national policies and legislation relating to fisheries and nature conservation. The focus of the group now includes the CFP and supports the CFP Influencing Project.

This paper outlines the effects of fisheries on marine wildlife, highlights the lack of environmental consideration there has been in fisheries management, describes changes in policy, which require environmental integration within the present CFP and discusses the actions the agencies are undertaking to feed into the integration process.

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\* English Nature

## The Effects of Fishing

Within all European and territorial waters many methods of fishing are used. Aspects of this fishing practises can have significant direct effects on and, within, key nature conservation sites such as Marine Nature Reserves (MNRs) and marine Special Areas of Conservation (SACs), for example:

- The removal of commercially valuable species – Biological indicators used to evaluate whether the mature stock of each species is able to sustain itself show that over 50% of the mature stocks fished by the EU fleets exceed safe limits and are at historically low levels;
- The mortality of non-commercial species – This includes marine mammals, seabirds, non-commercial fish species and some benthic species protected by national and international wildlife legislation;
- Increased food from discarded catch or from animals killed or damaged in the path of the fishing gear – A likely consequence from this increased food supply is an increase in scavenging animals, in particular seabirds and benthic species;
- Alteration of the seabed, due to the action of some fishing gears – This includes seabed features, protected by European wildlife legislation, which provide suitable substrates for diverse benthic communities;
- “Fishing litter” and other associated debris – Accidentally lost and deliberately dumped fishing gear can continue to fish, catching target and non target species for long periods, before eventually deteriorating.

There are also complex indirect effects associated with these changes, such as, structural changes in habitats affecting species assemblages and modification of predator-prey relationships. These are difficult to assess or predict but sustained over exploitation significantly increases the risk of affecting habitats or species which occupy a keystone role in the ecosystem. This can have potentially serious consequences for the food chain and the wider marine environment.

## Managing the Effects of Fishing

The conservation element of the CFP has been specifically based on the conservation and management of fish stocks. Despite its development most of the important commercial species are fished at rates considered unsustainable. Excessive fishing effort<sup>2</sup> and fishing capacity<sup>3</sup> are the main cause of this decline. As effort and capacity have increased fish stocks have become over-exploited.

The term “conservation” is widely used in relation to fisheries but its interpretation and application contrasts to that used when referring to “nature conservation”. Within the context of fisheries it refers to the rational and sustainable exploitation of fish stocks; within the context of nature conservation it has a broader application referring to the sustainable use and maintenance of species and habitat diversity. The management of the wider effects of fishing have, therefore, been minimal.

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<sup>2</sup> *Fishing effort* – is the amount of fishing undertaken by a vessel. It is expressed in various forms, depending on the method of fishing, e.g., a trawler may be hours fishing or days at sea, a potter may be number of pots deployed.

<sup>3</sup> *Fishing capacity* – is the potential of a vessel to catch fish. It is measured in gross registered tonnage and engine capacity (kW).

## Changes in Policy

In recent years there has been a gradual shift in the policy approach to fisheries. This has resulted from an increased level of understanding of the wider effects of fishing. However, changes in policy still need to be developed and effectively implemented within fisheries management.

The concept of sustainable development and the precautionary principle have been introduced in the Treaty of Rome and have been reflected in Article 2 of Regulation 3760/92 of the CFP:

*"...the general objectives of the Common Fisheries Policy shall be to protect and conserve available and accessible living marine aquatic resources, and to provide for rational and responsible exploitation on a sustainable basis, in appropriate economic and social conditions for the sector, taking account of the implications for the marine ecosystem, and in particular taking account of the needs of both producers and consumers."*

In 1997, an Intermediate Ministerial Meeting (IMM) on the Integration of Fisheries and Environmental Issues was held in Bergen, Norway. North Sea coastal state fisheries and environment ministers agreed that the management of the North Sea should be based on, respectively, sustainable development, the precautionary approach and an ecosystem approach.

Article 2 of the Amsterdam Treaty highlights that environmental protection must be integrated into the definition and implementation of the Community policies and activities. A high level initiative - the Cardiff process - has sought to translate this into meaningful action by calling for the development of environmental integration strategies for a range of sectoral Councils, including fisheries.

The EC Biodiversity Strategy (COM (98) 42) was published in 1998. It sets out a process to develop and implement sectoral and cross sectoral Action Plans. The Action plans are intended to link the major issues with the sectoral policies so that the obligations under the Convention of Biological Diversity can be translated into practical action.

Implementation of the Habitats Directive has helped to drive the integration process, particularly at a Member State level by providing a locus to reduce or remove the adverse effects of fishing. It has also helped to legitimise the participation and role of nature conservation organisations in the management of fisheries. Now, as a result of judicial review in the UK, this extends beyond territorial waters of Member States.

## Influencing Changes to the Common Fisheries Policy

In light of the shift in fisheries and environmental policy, the statutory nature conservation agencies have committed to a "CFP Influencing Project", the overall aim of which is the integration of environmental objectives within fisheries policy.

The project is based on targeting a relatively small number of the most influential elements of the CFP. Their improvement will reduce the significance of many of the adverse effects of fishing on the marine environment and ensure a long term future for the fishing industry. The objectives of the project are:

- ❑ A significant reduction in fishing effort and capacity;
- ❑ The use of appropriate management methods and tools;
- ❑ Retention of the 6 and 12 mile access arrangements and the "Shetland Box";

- Improved awareness of the interaction between fisheries and the environment to generate better understanding and to underpin management decisions.

The project consists of 9 inter-related tasks:

1. Consensus building with the main UK fishing industry representatives to develop a common position on the benefits of ecologically sustainable fisheries for the industry and natural heritage - e.g. participation in the Scottish Inshore Fisheries Advisory Group.
2. Improve the links between fisheries and environmental policy at national and European level by focusing on UK fisheries and environment departments, DG Fisheries and DG Environment - e.g. We meet regulatory with UK departments and are awaiting confirmation for a secondment to the Commission to assist in the fisheries/environment integration process.
3. Develop a European network for organisations with a role similar to our own and develop a consensus view on European fisheries policy and management - e.g. Having organised a European Workshop on fisheries and the environment we have established an electronic network for corresponding and sharing information.
4. Integrate environmental objectives within fisheries policy by developing and advocating the implementation of an ecosystem based approach to European fisheries management - e.g. We are consulting on two commissioned reports, which provide the basis for an ecosystem approach to the CFP.
5. Promote the implementation of the precautionary principle by developing practical examples within existing management frameworks -e.g. We are compiling examples of how fisheries management has or could be used in a precautionary fashion and will consult on our findings and views.
6. Seek to establish at least one offshore area closed to all extractive forms of exploitation in order that the effects on commercial fish stocks and the marine environment can be monitored - e.g. Some fishermen are actively exploring the use of no take zones. In order to explain to as many fishermen as possible the potential benefits of no take zones, we have produced a video with the fishing industry and NGOs.
7. Promote the "greening" of structural funds so that they support the development of more environmentally friendly forms of fishing and support the development of alternative forms of fisheries management - e.g. We are seeking to ensure that "Agenda 2000" funding for fisheries initiatives take account of environmental considerations, we favour a "regional seas" approach to management and have undertaken a study to review the institutional framework for such an approach.
8. Improve understanding and awareness of environmental and fisheries interactions with user groups, fisheries managers and the general public - e.g. A report on the effects of fishing on Natura 2000 habitats and species has been produced to inform SAC management groups.
9. Develop a complimentary programme of work with NGOs in order that similar messages are being promoted by as many people as possible - e.g. Regular contact with the key NGOs involved in the fisheries debate has ensured that similar issues are being targeted.

The work of the CFP Influencing Project can be summarised by the following statement:

*"We seek an ecosystem based approach with greater application of the precautionary principle. We believe this would be best achieved through a decentralised Common Fisheries Policy with an institutional framework based on a regionalised approach and the maintenance of existing inshore fishery limits.*

*There is a particular need for targeted and effective reduction in fishing effort and capacity coupled with the development of appropriate management tools such as No Take Zones. All of which needs to be taken forward and supported by greater understanding and awareness".*

## **Conclusions**

The review of the CFP in 2002 provides an unmissable opportunity to review current management policy for both commercial fisheries and sustainable marine ecosystems in the light of recent international agreements and EU Treaty obligations. The CFP has not yet fully embraced these obligations.

Dialogue between the stakeholders is essential, many common aims and objectives exist. Work at a national level can compliment and contribute to EC policy development. The results of this work need to be disseminated as widely as possible to ensure an understanding of the issues and potential solutions. Consensus of views across Europe will increase the chances of influencing changes to fisheries policy so that it takes account of environmental considerations.

# Conference Evaluation Sheet

## FINAL RESULTS

We would greatly appreciate your feedback on the 8th EEAC Annual Conference. Could you please take a few minutes to complete this evaluation sheet, and either hand your response to CNADS or Focal Point Service staff member.

For each question, please circle a number indicating your opinion.

1. Deficient 2. Average 3. Good 4. Very Good 5 Excellent

I. Your overall impressions of the Conference						
	1	2	3	4	5	
a) The duration of the Conference	-	18,2%	27,3%	54,5%	-	
b) The organization of the Conference	-	-	9,1%	9,1%	81,8%	
c) The provision of relevant materials	-	-	18,2%	45,4%	36,4%	
d) Satisfaction with the Conference results	-	-	45,4%	45,4%	9,2%	
II. The Sessions						
a) EEAC Plenary Session: Thematic working Groups	N/R					
Interest value of presentations	-	20,0%	10,0%	60,0%	10,0%	-
Quality of open discussion	-	10,0%	30,0%	60,0%	-	-
Satisfaction with results	-	10,0%	30,0%	60,0%	-	-
b) EEAC Plenary Session: Steering Committee Report						
Interests value of reports of sectoral Work.Groups and future structure	-	-	18,2%	45,4%	36,4%	
Quality of open discussion	-	18,2%	27,3%	27,3%	27,3%	
Satisfaction with results	-	-	27,3%	54,5%	18,2%	
c) Presentation of EEAC member Councils						
Interest value of presentations	10,0%	10,0%	40,0%	30,0%	10,0%	-
Quality of open discussion	10,0%	20,0%	40,0%	30,0%	-	-
Satisfaction with results	-	30,0%	40,0%	20,0%	10,0%	-
d) Thematic Plenary Sessions						
Interest value of presentations	-	-	-	54,5%	45,4%	
Quality of open discussion	-	-	9,1%	63,6%	27,3%	
Satisfaction with results	-	-	-	63,6%	36,4%	
e) Working Groups (thematic)						
Interest value of presentations	-	9,1%	18,2%	45,4%	27,3%	
Quality of open discussion	-	9,1%	27,3%	45,4%	18,2%	
Satisfaction with results	-	-	27,3%	63,6%	9,1%	

**What aspect of the Conference did you find the most useful?\***

Thematic day; contacts and relationships; excursions and social activities.

.....

**What aspect of the Conference did you find least useful?\***

To be closed in the Hotel; overloaded sessions.

.....

**How could future Annual Conferences be improved? \***

More scientific excursions; more space for informal meetings; receiving plenary papers in advance and "national" positions.

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\* The most important issues are by hierarchical order

## Press Release

1. Twenty six European Environment Consultative Councils, represented by about 100 members, met in Sesimbra, for three days – from the 2<sup>nd</sup> to the 4<sup>th</sup> of June 2000. The 8<sup>th</sup> Annual Conference, organised by the Portuguese National Council for Environment and Sustainable Development, had the underlying concern of achieving a better balance between North/South and East/West.
2. The Secretary for Environment, Eng. Rui Gonçalves, representing the Minister for Environment and Land Management, attended the opening session. After the formal opening of the Conference, the European Councils elected a new President for the next two years, Richard Macrory, from England, and two new Vice-Presidents, Harriet Lonka, from Finland and Viriato Soromenho-Marques, from Portugal. The Councils also approved recommendations to be presented to the several decision making bodies of the European Union, regarding several substantive matters relating to the 6<sup>th</sup> Community Programme for Environmental Action, E.U. energy policy and the agro-environmental instruments connected to the Common Agricultural Policy of the E.U. The Declaration of Sesimbra, a true Charter of Principles and Objectives of the European Environment Councils was also approved.
3. The new Focal Point for the network of European Environment Consultative Councils was elected and, once again, the Portuguese Council (CNADS) was designated to be part of this co-ordinating body. CNADS belongs to the Focal Point since the Budapest Conference, in September 1999.
4. The theme of the Conference was “The Coastal Zones Sustainable Development Policies in Europe” and the participants were divided among four Working Groups with the following themes:
  - Integrated Management of Off-shore and Land-based Activities;
  - The New Water Framework Directive and its Impact on Coastal Zone Management;
  - Sustainable Tourism in Coastal Zones;
  - Marine Protected Areas and Natural Resources Conservation.
5. Several international experts took part in the debates, namely the Director General of the European Agency for Environment, Domingo Jimenez Beltrán and the representative of the European Commissioner for the Environment, Bruno Julien, senior officer of DG Environment. After the debates, the representatives of the Councils approved an important number of general Conclusions and Recommendations, some of them of a more specific nature, such as:
  - i. To support all initiatives aiming at public awareness raising, in particular of economic agents and users of coastal zones, to the fragility of coastal ecosystems, which must be seen as the continuation and integral part of the European space and not as an indefinite and unlimited frontier.
  - ii. To call the attention of all political and social actors to the fact that the present inertia regarding the challenges faced by coastal areas reflects the inadequacies of existing political strategies and administrative systems – out of touch with reality and segmented. The fragmented and sectoral structure of the scientific system that supports political decision making is also inadequate and a new concept of Planning should be adopted, integrating not only the terrestrial space but also the marine one, where Coastal Zones have a fundamental role.
  - iii. To encourage all initiatives reinforcing multi-disciplinary approaches and strengthening our knowledge of the ecological, economic and social value of coastal zones, as well as mobilise relevant actions and programmes.

- iv. To highlight the seriousness of the many problems and threats affecting coastal zones and how they are undermining European policies for environment and sustainable development. There are many risks with no adequate responses, such as: voluntary and accidental pollution, fishing and agriculture impacts, population pressure both from growing urban development of coastal areas and the out of control growth of tourism infra-structures, expansion of ports, among others.
- v. How urgent it is to apply all existing indicators and political instruments, as well as the need to develop more precise ones, capable of evaluating both the changes in the state of the environment of coastal zones and the degree of success of related policies.
- vi. To welcome the European Commission Demonstration Programme for the Integrated Management of Coastal Zones, announced by the European Commission in 1995, and appeal to the European Council and the European Parliament to continue and improve those programmes.
- vii. To call on EU institutions to ensure that the principles of sustainable management of the coastal area are taken into consideration in the next review of existing European policies, such as the Common Fisheries Policy.
- viii. To encourage the Union and its member States to enlarge the network of protected marine areas, integrating them in a common strategy, coherent with nature conservation objectives and adopting a wider perspective, going beyond the “*terrestrial*” concept of space.
- ix. To welcome the next Water Framework Directive, which reflects an integrated concept of water systems that involves the coastal areas. Now, the challenge we face is whether the Union and its member States have the capability of implementing the principles of the Directive, in a rapid and effective manner. This is particularly important in respect of restoring ecological quality of coastal waters and areas, namely by preventing land and marine pollution.
- x. To select tourism as a critical problem for the next decades. Land use and transport have enormous consequences and the Union must develop new indicators, instruments and intervention programmes as a matter of urgency.
- xi. To call for better leadership and capacity to take initiatives from the Union, regarding the implementation of a sustainable development model for the coastal zones. This could be done, namely, by increasing the demands for environmental quality of projects that have significant impact on the coastal areas and require approval and financing by the Union.
- xii. To encourage the Union, member States and the different sectors involved to change their political ideology, their administrative practices and the generation of relevant scientific information, which are the basis for success in achieving the difficult objective of Sustainable Management of Coastal Zones.

# Sesimbra Declaration

## 0 - Preliminary Clearing Up

*The «Sesimbra Declaration», which appears as an addendum in these Proceedings was presented in Sesimbra by Viriato Soromenho-Marques, from the Portuguese CNADS, as a contribution to the definition of a future «EEAC Charter of Principles».*

*This document was widely discussed, although, without reaching consensus. Therefore, the decision was taken to initiate a larger debate on this matter, departing from this version, and using namely the Internet medium. So, this is a non binding and fully open document for discussion. A final decision about the adoption of a «Charter of Principles» will eventually take place in the 9th EEAC Conference, next year.*

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## I - Preamble

The European Environmental Advisory Councils (EEAC) is a network of independent environmental bodies -- with a wide range of organisational scopes. Established after the 1993 Annual Conference, held in Berlin, it initiated a long path towards the improvement of collaboration mechanisms between members. A Steering Committee and a Focal Point were created at the Stockholm Conference, which became important tools for an improved exchange of information, a more effective method of learning from each other, and an efficient network structure of functioning.

The development process of the network, which welcomed various new councils, brought with it the necessity of a clarification debate about the common principles and goals that bring together so many and so diverse advisory bodies. The Sesimbra Conference was the time and place chosen to tackle this important matter.

## II - Roots and Identity

The EEAC network reflects the changing reality of Europe at the turn of the century. Its essential characteristics are the following:

1. The dynamics of the European Union process, which affects all the other European countries and also the international system's balance.
2. The profound diversity of European culture rooted in a complex history both rich in innovation and in conflict.
3. The amazing plurality of natural and linguistic legacy, countries, nations, political structures and administrative organisations and procedures.
4. The convergence of policies under the same constitutional ideas of human rights, representative power, and democracy.

5. The assumption of a more solidary Europe -- based on the respect of nations and individuals -- as the most suitable political path to face the global challenges of future.
6. Understanding that environmental crisis is probably the major task which the world and Europe have to face in the coming decades, if history and civilisation are expected to evolve in peace and hope.

### **III - Principles**

The EEAC network acknowledges the legacy of more than three decades of continuous experience both in national and in international environmental policy and law.

The EEAC assumes the important principles expressed in the Stockholm (1972) and Rio (1992) Summits, among which the vital ones are these:

1. The perspective of sustainable development as the most far reaching and comprehensive historical aim for the humankind.
2. The urgency of translating the goal of sustainability in clear indicators and behaviour patterns regarding the integrity of ecosystems and environmental balance, both for individuals and corporations, political bodies and all other collective entities.
3. The need to understand the complex social consequences of the environmental justice issue both inside every political community and in international relations, including world trade.
4. The enlargement of the concepts of justice and fairness to the dimension of time, which means accountability of present generations before those who are still waiting to be born.
5. The respect for all-living creatures and natural ecosystems in order to preserve the biodiversity of the Earth's biosphere.
6. The fostering of a political culture for peace so as to facilitate negotiated common strategies to face common problems.

### **IV - Permanent Goals**

In order to comply with principles, the EEAC network acknowledges the following permanent goals, both at national, EU and global levels:

1. Enhance environmental science research and information exchange in order to enlarge the basis of the political decision-making process.
2. Strengthen political integration among every public policy under criteria and aims driven by environmental concerns.
3. Develop initiatives to improve exchanges of experience and the adoption of a critical comparative approach in order to select expertise with relevant positive impacts both at national, EU and global levels.
4. Increase civil society's participation, namely non-governmental organisations, in all the stages of the environmental political process.

5. Encourage dialogue among public authorities, environmental and consumers NGOs and the business sector in order to attain more sustainable production, transportation and consumption patterns.
6. Establish political priorities, deserving long-term public and private funding for scientific research and monitoring.
7. Foster international co-operation with non-European environmental advisory bodies, from developed and developing countries.
8. Contribute to a better integration between northern, southern and accession EU Member States.
9. Influence all the relevant political actors and institutions active in the EU environmental political decision making process.
10. Design global influencing strategies aimed at tackling global environmental issues at the highest international levels, namely inside the United Nations system.

**Viriato Soromenho-Marques**  
**CNADS**

## Ideas to the EEAC Network

1. To create a who is Who in the EEAC?, to allow a deeper of our human resources, in order to the development of expertise circulation.
2. To create a *Profile of EEAC Organisations*, to a better identification of the different types of organisations within the network, their scientific capabilities, their political and social links and representation potential.
3. To publish a list of the *EEAC Bibliographic Resources*, containing all the published materials along the life of the different councils. These materials could be organised by chronological and conceptual criteria

(example: books; studies on certain specific subjects; public statements; reports; etc.)

4. To initiate a set of EEAC Expertise Seminars, aimed to certain specific social and political relevant groups, like public administration officials, NGOs leaders, business sector, municipal and regional officials. These seminars shall deal with crossroads vital areas, such as:

Agricultural; Urban Management; Water Policy; Tourism; Coastal Zones; Nature Conservation; Waste Policies; Transportation, etc

In spite of being carried in different European Countries these seminars shall be maintained in a common numerical series, expressing their common origin and unity of purpose.

5. To publish a series of *EEAC Environmental Comparative Studies*, in which certain areas of environmental public policy and politics shall be addressed by known experts (or teams of experts) allowing a comparative understanding both inside the European Union as also in terms of a transatlantic perspective (17.04.2000)

**Viriato Soromenho-Marques**  
**CNADS**