

WP 5. Activity 5.4.
5.4.2 - Environmental data collection and organization

Pilot Action 5.4.2.1.
Data concerning marine and coastal habitats

(Progress report 01, December 2012.)



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Ente per l'assetto territoriale della Regione Istriana

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1. General information about the Pilot Action

1.1. Introduction

Republic of Croatia is a party (signatory country) of the UN Convention on Biological Diversity. In accordance with obligations arising from the Article 6 of the Convention, the Republic of Croatia prepared and adopted the National Strategy and Action Plan for the Protection of Biological and Landscape Diversity (NSAP) in 1999, and revised 2008 (OG 143/08). It was the first document which was providing guidelines in the nature protection policy in Croatia. The general strategic objectives outlined in the Strategy include inventorying, distribution mapping, threat assessment, formulation and implementation of action plans for the protection and monitoring of species and habitats. One of the NSAP strategic goals is to continue on defining areas important for the preservation of endangered and rare habitat types in the framework of developing NATURA 2000 network. One of the actions to be undertaken is mapping of marine habitat types (NSAP, Chapter 3.1.2.- Protection of ecological systems habitats.).

State Institute for Nature Protection has prepared draft NATURA 2000 proposal (16 September 2008) with 40% of Croatian territory covered. **But, proposal is incomplete in regards to the marine part of NATURA 2000.** Future research and systematization, as well as unification of methodologies is required especially through cooperation with all scientific littoral habitat types are included in Annex I of the Habitat Directive; estuaries, anchihaline caves, marine caves, submerged freshwater springs (vruljas), lagoons including marine lakes, coralligen, sands and mud up to 20 m depth etc. One becoming an EU member state Croatia will be obliged to establish monitoring of NATURA 2000 sites and will have to report on the status of its habitats and species to EC regularly (Article 17, Habitats Directive).



Figure 1: Draft NATURA 2000 proposal, prepared by State Institute for Nature Protection

Institute for Physical Planning Region of Istria (www.istra-istria.hr) is the central regional Institute dealing with Regional Development Plan. The Institute was established by Decision on the constitution of the Institute on 19 February 2008, basis of article 29, paragraph 2 of the Physical Planning and Building Act (OG, 76/07, 38/09) and article 36 of the Statute of the Istrian Region (Istrian Region "Official Paper", nr. 9/06 – second consolidated text and 14/06). The scope of activities according to Decision on the constitution of Institute are: elaborates and monitors the implementation of the Regional plan and plans for areas of particular significance, elaborates four-year reports aimed at improving regional planning situation in the area of the Region, evaluates the coordination of Regional plans of municipalities with the Plans of the Region, files for the documentation related to space for the Region, data collection and processing, elaborates special sector reports and analyses for the needs of the Regional Government, performs professional counseling for the needs of the executive entities of towns and municipalities, secures necessary professional support and delivery of information for the needs of work of state administration in the Region in the domain of regional planning, preparation of expert documents for **nature protection**.

The sea surrounding the Region of Istria is the most northern part of the Nord Adriatic Sea. The Croatian territory of the Western Istria coastline extends it self to the delta of Dragonja River on the West side (border with the Republic of Slovenia) up to the location Vela vrata on the East (border with the Primorsko-goranska County). The length of the Istrian coast, along islands and islets is 524 kilometres.

By implementing the **SHAPE project (Pilot Action 5.4.2.1.)**, the marine habitats of Istrian County were examined only 14% (communities of Ližnjan and Bale, part of community Medulin and part of the city of Rovinj; green line), while the data for other marine habitats in Istria, if there are, are older than 40 years (red line)



The Pilot action 5.4.2.1.
SHAPE
between coast and sea

Figure 2: Area of implementation of pilot project 5.4.2.1. (9 cities/communities; blue line)

of threatened and rare habitat types in Croatia that are protected under the Directive. During this process, the Institute discovered the existence of several additional habitat types from the Directive that were not included in the NHC, and that are present in Croatia and require protection. Furthermore, in order to establish the ecologically important areas pursuant to the Nature Protection Act and the Habitats Directive, the need arose to establish certain "habitat complexes" listed in the Directive as protected, and which in fact consist of several habitat types associated into a complex. For that reason, the first version of the NHC was supplemented with habitat types, whose descriptions were taken from the European PHYSIS database: "complex habitats": estuaries, coastal lagoons and large shallow coves and bays. In 2009, this version was supplemented in line with new findings relating to the habitat classification and published as Annex I, and the list of rare and threatened habitats types is given in Annex II of the Ordinance on Amendments to the Ordinance on habitat types, habitat map, threatened and rare habitat types and measures for conserving habitat types (Table 1).

Table 1: Habitat classification (NATURA 2000 and National Habitat Types Classification (NHC))

NATURA 2000 code	NATURA 2000 habitat type	National Habitat Types Classification (NHC)
1110	Sandbanks which are slightly covered by sea water all the time	G.3.2.1. Biocenosis of fine surface sands; G.3.2.2. Biocenosis of fine monotonous sands; G.3.3. Infralittoral large sands with more or less mud; G.3.4. Infralittoral rocks and gravels; G.4.2.2. Biocenosis of coastal detritus seabeds
*1120 (priority habitat type)	Posidonia beds (<i>Posidonia oceanicae</i>)	G.3.5. Posidonia beds
1130	Estuaries	F.1.2. Supralittoral muds; F.2.2. Supralittoral sands; G.1.1.1.2. Pelagial of estuaries; K.1. Estuaries
1140	Mudflats and sandflats not covered by sea water at low tide	F.1.2. Supralittoral muds; F.2.2. Supralittoral sands; F.3.2. Supralittoral gravels and rocks; G.2.1. Mediolittoral muddy muds and sands; G.2.2. Mediolittoral sands
*1150 (priority habitat type)	Coastal lagoons	G.2.4.4. Communities of mediolittoral karst sea lakes; G.3.1. Infralittoral sandy muds, sands grovels and rocks in euryhaline and eurithermal environment; G.3.7. Infralittoral of karst sea lakes; G.4.4. Circalittoral of karst sea lakes; K.2. Coastal lagoons

1160	Large shallow inlets and bays	F.1.2. Supralittoral muds; G.2.4.4. Communities of mediolittoral karst sea lakes; G.3.2.3. Biocenosis of muddy sands of sheltered coasts; G.3.7. Infralittoral of karst sea lakes; G.4.4. Circalittoral of karst sea lakes; K.3. Large shallow inlets and bays
1170	Reefs	F.4.2. Supralittoral rocks; G.2.4.1. Biocenosis of mediolittoral upper rocks; G.2.4.2. Biocenosis of mediolittoral lower rocks; G.3.6. Infralittoral hard seabeds and rocks; G.4.3.1. Coralligenous biocenosis; G.4.3.3. Biocenosis of deep sea rock (rock at the edge of continental shelf); G.4.3.4. Biocenosis of springs of underground type; G.5.3.1. Biocenosis of deep corals
8330	Submerged or partially submerged sea caves	G.2.4.3. Biocenosis of mediolittoral caves; G.4.3.2. Biocenosis of semi-dark caves (it also appears as an enclave in infralittoral); G.5.3.2. Biocenosis of caves and passages in complete darkness (it also appears as an enclave in upper stages)

The expert definition of a habitat included in the Nature Protection Act (OG 70/05, 139/08) is: "A habitat is a unique functional unit of an ecosystem, defined by geographical and abiotic features; all habitats of a type constitute a single habitat type."

Mapping marine habitats in Region of Istria are committed to:

- Council Directive 92/43/EEC on the conservation and natural habitats and of wild fauna and flora (Habitat Directive 1992)
- Ordinance on Amendments to the Ordinance on habitat types, habitat map, threatened and rare habitat types and measure for conserving habitat types (Official Gazette No 7/06, 119/09)
- Marine habitats – Manual for inventory and monitoring; Edition Biological diversity of Croatia (Bakran-Petricioli, T. (2007)

According to the work plan, activity of mapping marine habitats are planned during 2011.

2. Progress report

2.1. Activities already implemented

Marine habitat mapping was completed in September - November 2011.

The mapping was done in aquatories of nine towns and municipalities, along transects perpendicular to coast, inside diving fields. The habitats were mapped: down to 40 meters of depth along the Eastern coast which is steeper and less indented, and along the Southern and Western coasts, which are flatter and shallower, the mapping was done within the protected marine coastal zone, which according to Croatian legislation is 300 meters from the coastal line towards the open sea.

After the dives, the collected and analysed data were entered into the databases.

The extensive photo and video documentation with more than 2000 underwater photos and over 10 hours of video material were linked to the database of the diving field to which it belonged, together with the photos of corresponding coastal lines.

2.1.1. The Results

Altogether, 174 km of coastal line and a total surface of 42,20 km² of the Istrian County have been mapped. Six rare and endangered NATURA 2000 habitat types were noted, as well as 24 habitat types according to the Croatian habitat classification.

2.2. Planned activities up to the end of the Pilot Action

The planned activities were made in accordance with the work plan.

3. Problems (if any) in implementation and planned measures to mitigate

All activities are harmonized and in line with the work plan, as well as with the time plan.

4. Links to the GIS Adriatic basin level or local level:

The data about Istrian marine habitats will become a part of GIS Atlas for the Adriatic region which will be produced in the framework of the SHAPE project.

Marine habitats of Istrian County charted in digitized maps on a scale 1:25000 (extension sdf; Figure 3).

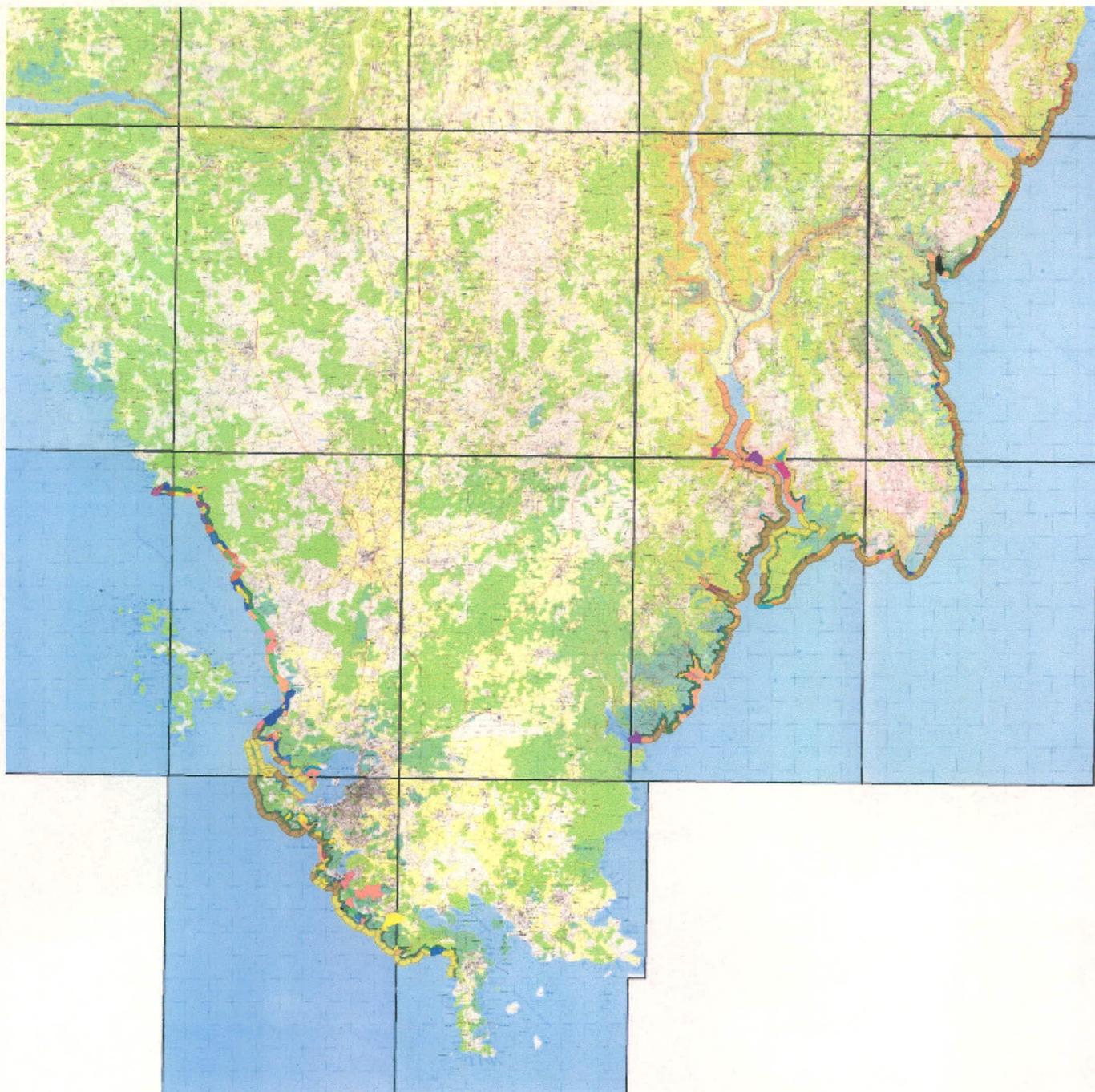


Figure 3: The results of Pilot action 5.4.2.1. (Marine mapping habitats in Istria County)

The spatial indicators available to the Institute for Physical Planning Region of Istria according to the INSPIRE directive shows table 2:

Table 2: Available spatial indicators for Region of Istria

DATA TITLE	TOPIC CATEGORIES IN ACCORDANCE WITH EN ISO 19115 (INSPIRE)	DATA SOURCE	RESOURCE LOCATOR the link(s) to the resource and/or the link to additional information about the resource	REFERRING DOCUMENT program/document/directive
		Country		
ECOLOGICAL FEATURES				
Habitat types	Biota	Republic of Croatia (State Institute for Nature Protection), Istria County (Institute for Physical Planning Region of Istria)	www.dzpz.hr ; www.istra-istra.hr	The Ordinance on habitat types, habitat map, threatened and rare habitat types and habitat type conservation measures, OG 07/06, 119/09), Habitat directive (92/43/EEC)
Important bird areas	Biota	Republic of Croatia (State Institute for Nature Protection), Istria County (Institute for Physical Planning Region of Istria)	www.dzpz.hr ; www.istra-istra.hr	The Nature protection Act, OG 70/05, 139/08), Habitat directive (92/43/EEC)
Zostera meadows	Biota	Republic of Croatia (State Institute for Nature Protection), Istria County (Institute for Physical Planning Region of Istria)	www.istra-istra.hr	The Ordinance on habitat types, habitat map, threatened and rare habitat types and habitat type conservation measures, OG 07/06, 119/09), Habitat directive (92/43/EEC)
Posidonia meadows	Biota	Republic of Croatia (State Institute for Nature Protection), Istria County (Institute for Physical Planning Region of Istria)	www.istra-istra.hr	The Ordinance on habitat types, habitat map, threatened and rare habitat types and habitat type conservation measures, OG 07/06, 119/09), Habitat directive (92/43/EEC)
PROTECTED AREAS				
Important ecological areas	Environment	Republic of Croatia (State Institute for Nature Protection)	www.dzpz.hr ; www.istra-istra.hr	The Nature protection Act, OG 70/05, 139/08), The Regulation on the proclamation of the ecological network (OG 109/07)
Natural heritage areas	Environment	Republic of Croatia (State Institute for Nature Protection), Istria County (Institute for Physical Planning Region of Istria)	www.dzpz.hr ; www.istra-istra.hr	The Nature protection Act, OG 70/05, 139/08), The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05, 14/05,10/08,7/10

National protected areas	Environment	Republic of Croatia (State Institute for Nature Protection)	www.dzpz.hr ; www.istra-istra.hr	The Nature protection Act, OG 70/05, 139/08), The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
UNESCO sites	Environment	Republic of Croatia (Ministry of culture)	www.min-kulture.hr ; www.istra-istra.hr	The Cultural Heritage Act, OG 69/99,151/03,157/03,87/09,88/10,61/11,25/12; The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Natura 2000 sites	Environment	Republic of Croatia (State Institute for Nature Protection)	www.dzpz.hr	The Ordinance on habitat types, habitat map, threatened and rare habitat types and habitat type conservation measures, OG 07/06, 119/09), Habitat directive (92/43/EEC)
Cultural heritage areas		Republic of Croatia (Ministry of culture)	www.min-kulture.hr	The Cultural Heritage Act, OG 69/99,151/03,157/03,87/09,88/10,61/11,25/12; The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Arheological sites		Republic of Croatia (Ministry of culture)	www.min-kulture.hr	The Cultural Heritage Act, OG 69/99,151/03,157/03,87/09,88/10,61/11,25/12; The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Protected coastal areas	Environment	Republic of Croatia (Ministry of Construction and Physical Planning)	www.mgipu.hr ; www.istra-istra.hr	The Physical Planning and Building Act (OG 76/07, 38/09, 55/11, 90/11, 50/12), The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10

SHIPPING

Maritime traffic	Geoscientific Information	Republic of Croatia (Ministry of Maritime affairs, Transport and Infrastructure); Istria County	www.istra-istra.hr	The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Ports		Republic of Croatia (Ministry of Maritime affairs, Transport and Infrastructure); Istria County	www.istra-istra.hr	The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10

BACKGROUND

Terrestrial

Administrative boundaries	Boundaries	Istria County	www.istra-istra.hr	The Law on the areas of regions, Towns and Municipalities in the Republic of Croatia, OG 10/97, 124/97, 50/98, 68/98, 22/99, 42/99, 117/99, 128/99, 44/00,129/00, 92/01, 79/02, 83/02, 25/03, 107/03, The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Corine land cover	Imagery / Base Maps / Earth Cover	Istria County	www.istra-istra.hr	The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10

Land use	Planning / Cadastre	Istria County	www.istra-istria.hr	The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Rivers	Inland Waters	Istria County	www.istra-istria.hr	The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Population density	Society	Istria County	www.istra-istria.hr	The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Traffic (road, rail and air traffic)	Transportation	Istria County	www.istra-istria.hr	The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10
Elevation	Elevation	State Geodetic Administration	www.dgu.hr	State geodetic maps
Marine				
Depth contours	Oceans	State Geodetic Administration	www.dgu.hr	State geodetic maps
Territorial waters	Boundaries	Istria County	www.istra-istria.hr	The Physical Plan Region of Istria, Istrian Region Official paper 2/02,1/05,4/05,14/05,10/08,7/10

5. Implication of the Pilot Action for MSP and ICZM in your area

Region of Istria aims at applying an ecosystem-based approach to the management of human activities taking place in coastal and marine spaces. Coastal development along the Istria coast needs to be tackled with an integrated approach, in order to safeguard people and properties from extreme events, maintain environmental flows and ecosystems functions, protect coastal landscapes and ensure public accessibility to the shore (ICZM, MSP).

The Region of Istria will complete and integrating the framework of knowledge on the marine-coastal environment. Marine planning will contribute to the effective management of marine activities and more sustainable use of marine resources.

Marine habitats will be base for future location NATURA 2000 marine site in Region of Istria. Also, this marine data will be use in process of Strategic Environmental Assessment that is in the making because of amendments of Physical Plan Region of Istria.

The pilot action 5.4.2.1. is supporting implementation of the Protocol in following articles:

- **Article 5** (Objectives of integrated coastal zone management)

(d) ensure preservation of the integrity of coastal ecosystems, landscapes and geomorphology;

- **Article 6** (General principles of integrated coastal zone management)

a) The biological wealth and the natural dynamics and functioning of the intertidal area and the complementary and interdependent nature of the marine part and the land part forming a single entity shall be taken particularly into account.

c) The ecosystems approach to coastal planning and management shall be applied so as to ensure the sustainable development of coastal zones.

- **Article 7** (Coordination)

2. Competent national, regional and local coastal zone authorities shall, insofar as practicable, work together to strengthen the coherence and effectiveness of the coastal strategies, plans and

programmes established.

- Article 10 (Specific coastal ecosystems)

The Parties shall take measures to protect the characteristics of certain specific coastal ecosystems, as follows :

2. Marine habitats

The Parties, recognizing the need to protect marine areas hosting habitats and species of high conservation value, irrespective of their classification as protected areas, shall:

- (a) adopt measures to ensure the protection and conservation, through legislation, planning and management of marine and coastal areas, in particular of those hosting habitats and species of high conservation value;

(b) undertake to promote regional and international cooperation for the implementation of common programmes on the protection of marine habitats.

-Article 16 (Monitoring and observation mechanisms and networks)

1. The Parties shall use and strengthen existing appropriate mechanisms for monitoring and observation, or create new ones if necessary. They shall also prepare and regularly update national inventories of coastal zones which should cover, to the extent possible, information on resources and activities, as well as on institutions, legislation and planning that may influence coastal zones.

2. In order to promote exchange of scientific experience, data and good practices, the Parties shall participate, at the appropriate administrative and scientific level, in a Mediterranean coastal zone network, in cooperation with the Organization.

3. With a view to facilitating the regular observation of the state and evolution of coastal zones, the Parties shall set out an agreed reference format and process to collect appropriate data in national inventories.

4. The Parties shall take all necessary means to ensure public access to the information derived from monitoring and observation mechanisms and networks.

-Article 25 (Training and research)

2. The Parties undertake, directly or with the assistance of the Organization or the competent international organizations, to promote scientific and technical research into integrated coastal zone management, particularly through the exchange of scientific and technical information and the coordination of their research programmes on themes of common interest.