

Name of the Partnership/Initiative:

ADRICOSM – ADRIatic sea integrated COastal areaS and river basin
Management system pilot project

Date of initiation: October 2001

Expected date of completion: October 2004

Partners Involved:

Governments:

Italian Ministry for the Environment and Territory

Others:

1. Istituto Nazionale di Geofisica e Vulcanologia (INGV), Bologna, Italy
2. Università di Bologna, Centro Interdipartimentale di Ricerca per le Scienze Ambientali, (UNIBO.CIRSA), Ravenna, Italy
3. Ente per le Nuove Tecnologie, l'Energia e l'Ambiente, Centro Ricerche Ambiente Marino, (ENEA.CRAM), Pozzuolo di Lerici, La Spezia, Italy
4. Agenzia Regionale Prevenzione e Ambiente dell'Emilia Romagna, Struttura Oceanografica Daphne, (ARPA.DAPHNE), Cesenatico, Italy
5. Consiglio Nazionale delle Ricerche, Istituto di Scienze dell'Atmosfera e del Clima, (CNR.ISAC), Roma, Italy
6. Consiglio Nazionale delle Ricerche, Istituto per la Geologia Marina, (CNR.IGM), Bologna, Italy
7. Società Generale di Ingegneria-SpA, (SGI), Sarmeola di Rubano, Padova, Italy
8. Laboratorio di Biologia Marina di Trieste, (LBM.TS), Trieste, Italy
9. Collecte, Localisation, Satellites, Space Oceanography Division, (CLS), Ramonville St. Agne, France
10. Meteo-France, Direction de la Production, (MF.DP), Toulouse, France
11. Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, (OGS), Trieste, Italy,
12. Rudjer Boskovic Institute, Center for Marine Research, (RBI.CMR), Rovinj, Croatia
13. National Institute of Biology, Marine Biological Station, (NIB.MBS), Piran, Slovenia
14. Institute of Oceanography and Fisheries, (IOF), Split, Croatia
15. University of Zagreb, Faculty of Science, Andrija Mohorovicic Geophysical Institute, (UZ.AMGI), Zagreb, Croatia
16. International Maritime Organization, International Maritime Academy, (IMO.IMA), Trieste, Italy
17. Ernst & Young, Environmental Services (E&Y), Italy
18. Faculty of Civil Engineering University of Split, Croatia
19. PULA Municipality, Croatia

Additional partnerships are envisaged

Leading Partner:

Ministry for the Environment and Territory of Italy

Department for Global Environment, International and Regional Conventions

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Main objectives of the Partnership/Initiative:

The Project objectives are the implementation of an integrated coastal zone management system in the Adriatic Sea, consisting of a predictive marine circulation module and a river basin and wastewater management module.

In particular the major aims of this project are:

- to demonstrate the feasibility of Near Real Time (NRT) coastal currents forecasts;
- to carry out the implementation of a river basin and wastewater management system in two Adriatic test site (Split and Pula, Croatia);
- to develop the integration of the river system with the coastal current forecasting.

A shelf forecasting system will be created for the Northern Adriatic Sea (Italy and Slovenia) and Croatian coastal waters, which will release weekly forecasts of currents for a six-month period. The implementation of an integrated system for planning and management of urban waste waters will be carried out for a river test site on the Croatian coasts. In addition, the coastal forecasting model will be coupled asynchronously to the river basin management model.

The key step toward integrated coastal areas and river basin management system is to connect the catchment basin runoff and the wastewater management with marine environment monitoring and forecasting since the coastal areas are strongly forced by the drainage basin inputs and disperse these inputs in a complex hydrodynamic environment.

A pilot project on the test site (ADRICOSM-PULA BAY) will allow the Municipality of Pula to implement the methodology for the preparation of the bay/coast environmental master plan.

Each partner has brought essential contributions to the implementation of the project.

This proposal involves directly the three Countries: Italy, Slovenia and Croatia, bordering the Adriatic Sea, and a large number of national and international Institutions. An exchange of expertise will take place in order to:

- build a cost-effective and scientifically designed Adriatic basin monitoring system;
- build capacity in Croatian and Slovenian centers to model the shelf areas with state of the art hydrodynamic modeling;
- create a network between all these three nations and the other European Institutions (scientific agencies, marine operational agencies and private companies), which will freely share observational and model data.

The Co-ordinator of ADRICOSM is the **National Institute of Geophysics and Volcanology (Istituto Nazionale di Geofisica e Vulcanologia - INGV)** and in cooperation with the **Italian Ministry for the Environment and Territory** has the responsibility to coordinate all activities: organization of meetings, data elaboration and dissemination and providing information and expertise on relevant technical methods to stakeholders.

ENEA (Italy), ARPA (Italy), LBM (Italy), Rudjer Boskovic Institute (Croatia), National Institute of Biology (Slovenia), Institute of Oceanography and Fisheries (Croatia) are in charge of the conduction of the monitoring activities in the coastal waters.

INGV, University of Bologna (Italy), National Institute of Biology (Slovenia), University of Zagreb (Croatia) are in charge of Adriatic Basin modelling and shelf modeling activities.

CNR – ISAC (Italy), CNR – IGM (Italy), CLS (France), Meteo-France (France), OGS

(Italy), IMO – IMA (Italy) will provide new marine data sets collected over the Adriatic Basin

SGI (Italy) is in charge of all the River Basin management system in a Croatian test site; also it is in charge of the work packages referring to modelling for all the River Basin Management System. In a Croatian test site SGI together with the **Faculty of Civil Engineering of the University of Split** and **E&Y**, will implement the methodology and provide technical assistance to the Pula Municipality to implement a river basin integrated management system focusing on sewer networks, wastewater treatment plants and receiving waters (sea).

Please also provide a brief description of the relationship of the Partnership/Initiative with the objectives of Agenda 21 as well as relevant goals and objectives of the United Nation Millennium Declaration:

The project is relevant for several objectives and provisions of Agenda 21:

In the framework of the “**Social and Economic Dimensions**” (Section 1 of Agenda 21), the project aim to reach the protection and promotion of human health and to implement actions for the integration of environment and development in decision-making.

The project applies integrated approaches to the development, assessment and management of water resources, integrated management and sustainable development of coastal areas, strengthening international, including regional, cooperation and coordination, in line with the Section 2 of the Agenda 21 on “**Protection of the Oceans, all kind of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources**”.

The objectives described in the Section 3 of the Agenda 21, “**Strengthening the Role of Major groups**” are included in the activities foreseen by the project, with the aim to strengthen the role of workers and trade unions and the role of business and industry.

Finally, the “**means of implementation**” of the project are consistent with the Section 4 (chapter 37 – National Mechanisms and International cooperation for capacity building in developing countries) of the Agenda 21, with particular attention to: improve regional and sub-regional consultative process and round table meetings to facilitate the exchange of data, information and experience in the implementation of Agenda 21.cooperation and capacity building, promotion of public awareness and training, implementation of international legal instruments and mechanisms.

*The project activities reflects some of the commitments stated in the **UN Millennium Declaration**, in particular those related to the **respect of nature**, as fundamental value (point 6 of the Declaration), and to the **protection of our common environment** (Section 4 of the Declaration), with the aim “to stop the unsustainable exploitation of water resources by developing water management strategies at the regional, national and local levels, which promote both equitable access and adequate supplies”.*

*Most of the project objectives are also reflected in the **Chairman’s Text for Negotiation** (Preparatory Committee, Fourth Session)*

IV (Protecting and Managing the natural resource base of economic and social development), where it stated that efforts are necessary in order to:

- Facilitate access to public information and participation at all levels in support of policy and decision-making related to water resources management and project implementation;
- Adopt prevention and protection measures against water shortages and water pollution,

including the discharge of polluting substances, and promote wastewater treatment technologies, including ecological sanitation.

- Develop and implement national/regional strategies, plans and programmes with regard to integrated river basin, watershed and groundwater management as well as introduce measures to improve the efficiency of water infrastructure to reduce losses and increase recycling of water;
- Employ the full range of policy instruments, including regulation, monitoring, voluntary measures, market and information-based tools, land-use management and cost recovery of water services, and adopt an integrated water basin approach;
- Support developing countries and countries with economies in transition in their efforts to monitor and assess the quantity and quality of water resources, including through the establishment of national monitoring networks and water resources databases and the development of relevant national indicators.
- Improve the scientific understanding of marine and coastal ecosystems as a fundamental basis for sound decision-making, through, actions at the global, regional and national levels to:
 - a. Increase scientific and technical collaboration at the global and regional levels including the appropriate transfer of marine science and marine technologies and techniques on conservation and management of living and non-living marine resources and expanding ocean observing capabilities for timely prediction and assessment on the state of marine environment;
 - b. Build capacity in marine science, information and management, through, *inter alia*, promote use of environmental impact assessments and environmental evaluation and reporting techniques, for projects or activities that are potentially harmful to the coastal and marine environments and their living and non-living resources.

Expected results:

The Pilot Project brings an important contribution to the achievement of sustainable development for the following reasons:

1. the project considers jointly the assessment of the risks for environment and for health, elaborating recommendations on how to act to ensure a “health-sustainable” environment for the future generations.
2. it is a programme involving three neighbouring countries: the comparison of the results and the exchange of experiences will bring to a common understanding of the existing gaps and joint evaluation of the needed actions required to reach sustainable standards.
3. the relevant added value of the project is the capacity to serve as basis for further developments in other areas, other countries, and other economic and social sectors. In particular in future application of the methodology will be emphasised the Tran boundary elements related to the management of hazardous industrial activities and their impact on environment and health and to the implementation of the international legislative instruments.
4. On the Pula test site, at the end of the ADRICOSM – PULA BAY project, the beneficiary will have at disposal methodologies and capacity to develop an integrated (RBCZ) plan of interventions finalised to environment protection including feasibility studies and preliminary design; the plan will be already oriented to the UE water framework directive. Instruments to control and monitor relevant parameters and to present results of the project and the plan will also be at the Municipality of Pula disposal.

Specific targets of the Partnership/Initiative and timeframe for their achievement:

Within the year 2004, the initiative will try to achieve the following specific targets: to organize a demonstration project for the integrated management of Adriatic Sea coastal areas and river basin water resources. It will be based upon four basic modules:

Module 1 - The construction of a Near Real Time monitoring and modeling system to accurately forecast the short-term variability of the coastal areas circulation.

Module 2 - The implementation of an integrated planning and management system of urban drainage and wastewater utilities in a test site for the Croatian coasts.

Module 3 - The development of an interface (of the river basin module) with the marine coastal area forecasting module.

Module 4 – The management of the Project and the capacity building.

These modules are designed to be consistent with the international directives defined in the UNESCO-IOC Coastal Global Ocean Observing System (C-GOOS) and the UNEP-Mediterranean Action Plan Integrated Coastal Areas and River Management Program. The Project objectives fit within the scope of the EU V Framework activities for key action “Sustainable Marine Ecosystem”. The Project fits also within the rationale of the Coordinated Adriatic Observing System (CAOS), which is a scientifically designed system for the understanding and control of environmental issues related to nutrient load and trophic dynamics of the Adriatic Sea.

The Project duration of 3 years is subdivided into 3 periods: preparation, forecasting, and assessment. During the forecasting period a Trial Forecast Period (TFP) is defined where trial forecasts of marine currents will be released in delayed mode. During the successive Targeted Operational Period (TOP) the forecasts will be released in Near Real Time (NRT).

Coordination and Implementation mechanism

Please provide a brief description of expected coordination/implementation mechanism of the Partnership/Initiative.

Coordination and implementation of the project are ensured through the establishment of an International Working Group, composed by the project responsible scientific of each Institutions.

The Working Group is responsible for general survey and co-ordination of all project activities, and the technical staffs are responsible for the implementation and testing of the methodology and for the draft of the final reports.

Arrangements for funding

Current Funders: Lit. 7.550.000.000

All the project is financed by Italian Ministry For the Environment and Territory

Arrangements for capacity building and technology transfer

The Capacity Building activities are an essential part of the project and they are aimed to:

- Strengthen capacity building through the organization of specific courses to train local technical staff from municipalities, water utilities and water authorities.
- improve the knowledge of the beneficiary Countries on the main International Conventions and European Directives addressed by the project;
- train experts, people responsible for the industrial sites, workers on European and international requirements to satisfy safety and environmental protection standards;
- give assistance to the local team for the elaboration of the final reports.

- find common tools to increase the public participation in environmental matters and to establish a procedure for risk communication.

INGV will provide for the technical coordination of the whole project and the preparation of specific studies.

These activities are carried out through:

- Management workshop;
- Scientific Thematic Workshop;
- training courses;
- general workshops

Monitoring – operational activities closely coupled with management of the programme. Monitoring will be done by INGV.

Technology transfer:

The data exchanged and collected in the Project will be disseminated through an ftp and Web telecommunication system. In situ and satellite data will be collected for 12 months, within which 6-month data will be transmitted Near Real Time (NRT).

Regular meetings will be organized between international experts, in order to discuss methodologies, results and background data.

Links of Partnership/Initiative with on-going sustainable development activities at the international and/or regional level (if any)

Please provide a brief description:

This Pilot Project has been designed to follow the recommendations of the Preparatory High Level Expert Meeting “Comprehensive Joint Water Environment Protection Program for the Adriatic-Ionian Region” held in Split, Croatia, 8-10 may 2000 in the contest of Ionian-Adriatic Initiative (IAI). Moreover, it builds upon the trilateral Italian-Slovenian and Croatian agreement for scientific and technological collaboration in the Adriatic Sea.

In particular ADRICOSM will play an essential role in the thematic issues of the Working Group 1 “Monitoring Programme and Research on Adriatic and Ionian Seas” and Working Group 3 “River Basin management plan for the Adriatic” of Ionian-Adriatic Initiative (IAI).

Monitoring Arrangements

Website:

A new website dedicated to the partnership will be developed. It will establish links with the partner websites, provide regular updates, and feature extensive reports on activities.

Reports:

The Partnership will produce three types of reports to monitor activities of partners and to monitor progress against the overall goals of the partnership.

Final Report on scientific methodology guidelines for the problem under study.

Other relevant information:

The project has the characteristics to be repeatable in other regions of the Adriatic Basin.

We expect in the next years to expand the partnership to include the other countries (Bosnia Herzegovina, Montenegro, Albania and Greece).

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