

# Advances in Integrated Coastal Management for the Mediterranean & Black Sea

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## Preface

The present Special Issue on “Advances in Integrated Coastal Management (ICM) for the Mediterranean and Black Sea” originates from the *2nd International Conference / Workshop on the State-of-the-Art of ICM in the Mediterranean and the Black Sea: Immediate Needs for Research, Education/Training and Implementation (MED & Black Sea ICM 08)*, which was held on 14–18 October 2008, in Akyaka (Turkey). This event, an ideal follow up of the 1st Conference with the same title held on 2–5 November 1996 in Sarigerme (Turkey), aimed at:

- (a) introducing past and present requirements and recommendations emerging from the MEDCOAST<sup>1</sup> experience,
- (b) reviewing the development and current status of ICM in both the Mediterranean and Black Sea, and
- (c) presenting several novel ICM issues, which are emerging as critical items in the international ICM debate.

Since the first conference, as noted in Akyaka, significant progress has been made in the management of coastal

areas of either basin, at both national and regional levels, as the result of work supported and carried out by national, regional and international organizations, as well as of the efforts of the NGO community. In particular, the Protocol on Integrated Coastal Zone Management in the Mediterranean<sup>2</sup> signed by the majority of the Mediterranean countries in January 2008, which is the first regional legal instrument on this subject, is an indication of the level of present undertakings for ICM. After 12 years, it was considered timely to review once again the state-of-the-art of ICM in the Mediterranean and the Black Sea countries, utilizing the same format and making reference to the results achieved in 1996 (for details, see [ANNEX 1, Conclusions and Recommendations](#)).

Similar to the original event, the aim of the second conference was to provide a platform for Mediterranean and the Black Sea countries to share their problems and successful experiences in ICM and to contribute to bi-lateral and regional collaboration, for improved joint efforts to enhance ICM in both basins. Invited lectures, oral and poster presentations, as well as study group sessions, reviewed the main coastal management issues, systems and efforts that stand out today at the national and regional level. The lectures and presentations focused on:

- ICM topical subjects and Country reports (invited papers);
- national experiences (proposed papers);
- ICM problems in either basin (proposed papers);

<sup>1</sup> The MEDCOAST Network has grouped together a number of research Institutions, concerned with ICM issues in the Mediterranean and Black Sea, since 1993. Recently, the activities of the network culminated in the creation of the MEDCOAST Foundation, based in Dalyan, Turkey.

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<sup>2</sup> More on this topic in the opening article of this Special Issue: “Implementation Issues of the ICZM Proptocol and Mitigation Efforts”, by M. Prem.

while the study groups worked on the present needs in:

- ICM research and monitoring, regional scale projects for either basin;
- capacity building (education and training), regional collaboration;
- implementation of ICM (national and regional).

A volume of proceedings was released after the Conference, collecting all of the manuscripts submitted in relation to the topics above, and a final statement was issued (for details, see ANNEX 2, *Akyaka Declaration*). However, during the Conference, an idea was also born to collect and publish a set of peer-reviewed papers, to appear in a major international journal of the ICM sector, in order to enhance the impact of the foremost contributions presented at the Akyaka event. The papers, which were selected either to outline the state of the art in ICM affairs for the Mediterranean and Black Sea (essentially the latest developments in framework of the Barcelona Convention and of the Bucharest Convention, respectively), or on the basis of the elements of novelty they presented (modelling of ICM implementations, coastal evaluation techniques for tourism applications, new methods for establishing coastal setback lines, coastal and marine cultural heritage, ecological provinces as the basis for an ecosystem approach to ICM) and which compose the current Special Issue, are:

- this preface, introducing the MEDCOAST perspective on past as well as present ICM topics in the Mediterranean and Black Sea (in ANNEX: *1996 CONCLUSIONS AND RECOMMENDATIONS; 2008 AKYAKA DECLARATION*);
- a first review paper, dealing with the current status of ICM in the Mediterranean Sea, and with the newly adopted *Protocol on Integrated Coastal Zone Management* of the Barcelona Convention in particular; the paper is authored by M. Prem, Director a.i. of the UNEP Mediterranean Action Plan, Priority Actions Programme, Regional Activity Centre (PAP/RAC), based in Split (Croatia);
- a second review paper, dealing with the current status of ICM in the Black Sea, and with the activities of the Bucharest Convention in particular; the paper is authored by E. Antonidze, leader of the *Integrated Coastal Zone Management Advisory Group* of the Commission on the Protection of the Black Sea Against Pollution, and based at Kuban State University, in Krasnodar (Russia);
- an article on ICM implementation models, by C. House, School of Built and Natural Environment, Faculty of Applied Design and Engineering at Swansea Metropolitan University, based in Swansea (UK), describing the application of implementation

theory to facilitate ICM and improve understanding of coastal policies in the Mediterranean region and beyond;

- a case study by Z. Ullah, Southampton Solent University, Southampton (UK), and co-workers, presenting an application of the Coastal Scenic Evaluation technique, originally developed within a Mediterranean context, with the aim of providing coastal scenic assessments for tourism goals;
- a contribution by M. Sanò, Instituto de Hidráulica Ambiental IH Cantabria, Universidad de Cantabria, Santander (Spain), and co-workers to the coastal setback debate: while arbitrary setback lines could be set to halt unwise coastal development, their identification can actually be optimized, using integrated methodologies to be implemented at the local level;
- an overview of maritime archeological resources in the Holy Land, by E. Galili and B. Rosen, both with the Israel Antiquities Authority in Atlit (Israel), presented as a reminder of the awareness that is increasingly emerging in the Mediterranean region about the need to protect and preserve the coastal and marine cultural heritage;
- a report by V. Barale, senior scientist at the Institute for Environment and Sustainability, Joint Research Centre of the European Commission, Ispra (Italy), on the inclusion of orbital remote sensing techniques among the suite of tools used for assessing coastal and marine ecological provinces, as a pre-requisite for the implementation of an ecosystem approach to ICM.

Of course, this paper collection cannot provide an exhaustive coverage of the entire spectrum of items worthy of an in-depth analysis, in the present panorama of ICM topical issues in the Mediterranean and Black Sea. However, it should be enough to provide the reader with an adequate idea of what has been achieved since the first MEDCOAST Conference in 1996, and of the work still ahead of us, as highlighted by the second Conference in 2008.

## ANNEX 1

1st International Conference/Workshop on the State-of-the-Art of ICM in the Mediterranean & Black Sea: Immediate Needs for Research, Education & Training, Implementation (MED & Black Sea ICZM 96)

convened in Sarigerme, Turkey, on 2–5 November 1996. The Workshop was attended by 62 participants from 22 countries. The work was carried out in two parallel paper presentation sessions, followed by three parallel group study sessions. The Workshop was sponsored by two

prominent international programs for the Mediterranean and Black Sea, namely by the Mediterranean Action Plan/Priority Action Programs Regional Activity Center of UNEP, and the GEF Black Sea Environmental Programme, in addition to Euro-Mediterranean Center on Insular Coastal Dynamics (ICoD, Malta), the Turkish Ministries and several international and Turkish institutions. In the Closing Session, the participants of MED & Black Sea ICZM Workshop adopted the following:

#### Conclusions and Recommendations

Sarigerme, Turkey, the 5th of November 1996

#### Conclusions

1. Generally, the level of actual implementation of ICZM in the Mediterranean and Black Sea regions is variable due to different conditions. In the Mediterranean, three main groups of countries can be distinguished:
  - (a) countries equipped with sufficient experience and capability to achieve a high level of implementation;
  - (b) countries that have initiated an ICZM process and show encouraging progress;
  - (c) countries where the institutional and legal framework is not yet sufficiently developed to support an ICZM process.

In the Black Sea countries, ICZM is still at an early stage. Regional efforts, however, particularly due to the GEF Black Sea Environmental Program with the participation of the World Bank and the European Union, aimed at the establishment of prerequisites for ICZM, are carried out in a systematic way. This is encouraging adaptation of the institutional and legal frameworks that are likely to lead to substantial progress and results in the medium term, especially with improved coordination at the national level.

2. Most ICZM efforts have been prompted by funding opportunities provided by international organizations and donors. In general, the involvement, support and assistance of international organizations in both regions has been highly beneficial.
3. ICZM initiatives have been established generally within the Ministry of the Environment, and in some cases, not involving a role for other relevant ministries. The lack of institutions (agencies) ensuring the integration of sectoral policies is presently a major obstacle for several countries. Furthermore, ICZM has been promoted through pilot projects in selected areas. In several of these projects however, the involvement of local authorities, NGOs, scientific community and

general public, appear to be insufficient or unclear. Generally, active participation of all concerned parties to the ICZM efforts are not yet at sufficient levels.

4. It is necessary for several countries to further develop their capabilities on the use of important ICZM tools and techniques, including Environmental Impact Assessment (EIA), land and sea use planning, carrying capacity assessment, Decision Support Systems (DSS), and Geographic Information System (GIS). The use of market-oriented economic instruments, such as monetary incentives for better management practices, environmental or resource use taxes, does not virtually exist throughout the region.
5. Although there has been a notable increase in the Mediterranean during the 1990's, collaborated research activities at regional or sub-regional scale, on topics which are significant for coastal and sea management, are not yet at a sufficient level. For several coastal and marine problems, collaborated research involving institutions from countries of the region or a sub-region, would be cost effective and scientifically more rational—since it would be a holistic coverage—on the one hand, and would contribute to the research capacity building of the institutions in developing countries on the other.
6. In several Mediterranean & Black Sea countries, the data and information needed for designing and implementing coastal management programs, particularly the historical data extending sufficient periods into the past, are scarcely available. The limitations on allocated funds, inability for continuing long term monitoring and data acquisition programs, and insufficient level of international cooperation for monitoring programs are the main reasons for the shortage of useful data and information. Reliability of the data available adds up to the severity of this problem.
7. The difficulties associated with the availability of existing data and information, including non-standard formats and limitations imposed on the use of data and information, impose significant limitations for ICZM plans and programs.
8. In several Mediterranean and Black Sea countries, the present capabilities for coastal and marine monitoring and data collection, including available instrumentation and personal resources, are not yet adequate.
9. Public awareness in the region on coastal and marine management issues is not generally at sufficient level to safeguard good management practices. There is a potential role for national and international NGOs in raising public awareness. Campaigns and programs are also essential for improving the awareness of the decision-makers in the region.
10. In order to achieve environmentally sustainable development, there exists an outstanding need for education

and training in ICZM of various sectors, e.g. general public, NGOs, policy makers, and professionals, and their educational and training needs are different. In the Mediterranean and Black Sea countries, the available training and educational programs in the area of coastal and marine management, incorporating a multi-disciplinary approach to resolving complex social, economic and environmental issues which are commonly observed in coastal areas, are far from being sufficient. Generally, there is a lack of educational materials. Providing specialized tools and skills to the professionals for designing and implementing ICZM programs, is presently a major challenge in the region.

11. There is a lack of information regarding real demand in the Mediterranean and Black Sea countries for integrated coastal zone managers, and various employment opportunities for professionals trained in this relatively new discipline.
12. Environmental planning and management disciplines in the region are generally narrowly focused and fragmentary, reflecting the traditional sectoral approach to education and training, and curriculum development in their respective fields. University programs in ICZM at the graduate (e.g. master degree) level in the Mediterranean and Black Sea countries are either not available or not sufficient. This is aggravated by the lack of specialized education and training materials (including text books). There exists a need for well designed curricula in major languages used in the region.
13. The number of networks in the region are in increase, with the potential to contribute to development of science and scientific tools, training and education, and implementation practices in ICZM. However, funding constraints jeopardize their sustainability and inhibit their access by a broader group of users. This is particularly true with respect to cross-regional networks (e.g. between the Mediterranean and Black Seas).

#### Recommendations

1. In several countries of the region, institutional arrangements need to be strengthened, particularly in the form of inter-agency planning and decision making, and coordinating agencies, at both national and local levels, in order to move away from classical sectoral approach towards integration of several, often conflicting interests. The role of all actors, including NGOs, scientific community, private sector, and general public, in the process of ICZM should be clearly identified and ensured in a bottom-up approach. National capabilities for using

important ICZM tools and instruments including strategic planning, GIS, land and sea use planning, models and decision support systems, EIA, cost-benefit analysis, risk analysis, and economic instruments should be enhanced. Measures for adequate enforcement of legislation should be undertaken by all countries of the region.

2. ICZM should be integrated into national development strategies by catalyzing domestic and external sources of funding, and by providing arrangements for preparation and execution of ICZM plans, programs and pilot projects.
3. The socio-economic benefits of ICZM should be publicized and communicated to the policy makers and professionals. Similarly, rigorous cost-benefit analysis and other environmental economic tools should be applied to policies and management regimes affecting coastal and marine areas to identify true social and environmental costs associated with decisions. A tourist tax should be levied throughout the region, and the revenues collected should be used for environmental rehabilitation and infrastructure.
4. For demonstrating the benefits of ICZM and for enhancing national capabilities, local scale pilot projects, with active participation of local authorities, NGOs, scientific community, private sector, and with inputs from the general public, would be highly beneficial. Arrangements should be made for implementation and follow up of pilot projects as essential tools for further strengthening of ICZM in both regions. It would be beneficial to establish procedures for monitoring, evaluation and reporting, following the implementation of ICZM programs and pilot projects.
5. The Mediterranean and Black Sea Action Plans should design and implement mechanisms for encouraging Parties to the relevant Conventions to develop effective de-centralized cooperation at bilateral and/or regional scale, for generating information and designing tools and methodologies for ICZM and for developing the required expertise and human resources in the countries. A standing unit, including representation of NGOs and the scientific community, should be established under the Action Plans for the purposes of monitoring the national progresses of the riparian countries in conforming with the agreed regional goals and actions, and reporting the state-of-the-progress reports at regular intervals. The Mediterranean Commission for Sustainable Development may carry out this function for the Mediterranean.
6. A fact finding study aiming at identification of common regional or sub-regional coastal and marine

issues and problems on the one hand, and national resources (infrastructural and human) and needs for addressing these issues on the other, would be highly valuable to design the future programs involving collaborated research, data collection and monitoring. A logical procedure for such a study would be:

- (a) short state-of-the-art reports for each country by national experts,
- (b) a questionnaire sent to all institutions mentioned in national reports,
- (c) a team of experts visiting each of the Mediterranean and Black Sea countries for on-site observation of capabilities and issues, and
- (d) preparation of the regional fact finding report.

MEDCOAST network could be used for carrying out this study.

7. Creation of decentralized networks of academic institutions for collaborated research on important coastal and marine issues, through a holistic approach at regional or sub-regional scale, should be encouraged and supported by inter-national organizations and donors active in the region. Significant benefits would be derived from regional or sub-regional research projects on several important issues including; wind and wave climate; coastal erosion; water pollution modelling; coastal and marine ecosystems; ecosystem modelling; management issues of special coastal areas such as lagoons, wetlands, dunes, etc.; management of migratory endangered species; fisheries research; tourism; coastal resource use patterns, etc.
8. Consolidation of the available information on coastal and marine resources, uses, and issues, together with environmental quality parameters, for generating a GIS data base for the entire Mediterranean and Black Sea, would greatly help the existing and future management efforts at national and regional levels.
9. Common international formats and standards for monitoring and data collection should be followed by all institutions of the riparian countries in order to facilitate the ready ensemble of the data and accuracy of the information. Both of these features are essential for building a reliable data base, national or regional. A regional coastal and marine center should be established, which could promote the common formats and standards, and could function as a server to guide users to the source where the required data and/or information is available.
10. Creation of updated directories of individual experts and institutions (research, training/ education, implementation), working on issues relevant to coastal and marine management in the Mediterranean and Black Sea countries, would provide a valuable source of information, which would contribute to enhancement of collaboration in the region. These directories could be put into internet, under MEDCOAST home page, and can be updated regularly.
11. An internationally accredited university degree in ICZM at the masters level, which would be available for students from the region, should be developed with external resources currently directed at non-degree level training (e.g. certificate or diploma). As an interim measure to fill the need for formal training of ICZM professionals and to foster their continuing development, twinning arrangements between universities, within and outside the region, with expertise in ICZM, should be encouraged. This would avail the Mediterranean and Black Sea institutions of expertise not readily available in either region. An assessment quantifying the ICZM training needs in the region, and the demand for ICZM professionals, including current and projected employment opportunities, should be undertaken.
12. Centralized and decentralized networks should be promoted and supported for enhancing the sharing of experience and information at inter-national, inter-regional (e.g. Mediterranean and Black Sea), and regional levels. Networks in both regions should be mutually inclusive, accessible and reinforcing. There should be a more effective interaction and collaboration between two regions in designing and implementing ICZM.
13. In the light of the above conclusions and recommendations, MEDCOAST should:
  - (a) encourage and support professionals to better contribute to the enhancement of public awareness in the field of ICZM;
  - (b) develop a masters level education and training program in coastal and sea management for the Mediterranean and Black Seas, and continue with the already existing short term training programs;
  - (c) facilitate joint projects by involving the institutions within its network so as to encourage collaborative research at the regional or sub-regional level;
  - (d) act as a data and information storage and management center for serving data and information which, when passed to the scientific community via newsletter, internet, workshops and training programs, etc., would also diffuse out to the general public.

The participants of the MED & Black Sea ICZM Workshop 96 recommends the establishment of an International (MEDCOAST) Center to serve as a permanent base and facility for carrying out the above functions, together with the already developed MEDCOAST activities.

14. The above thirteen recommendations can not be implemented without the assistance of the international development community, in partnership with the national and regional institutions of the regions, including the public sector, private sector, educational and research organizations, networks, NGOs and community based organizations. International organizations and donors active in the region are encouraged to identify and support regional environmental and scientific networks, research, training and educational activities, pilot ICZM implementation projects and ICZM programs, development and enhancement of the national ICZM capabilities, and investment activities required by ICZM, which are particularly appropriate to their mandate and program scope in the Mediterranean and Black Sea regions.

## ANNEX 2

2nd International Conference/Workshop on the State-of-the-Art of ICM in the Mediterranean & Black Sea: Immediate Needs for Research, Education & Training, Implementation (MED & Black Sea ICZM 08)

### Akyaka Declaration

convened in Akyaka, Turkey, on 14–18 October 2008, 12 years after the 1st conference/workshop organized in 1996 (Sarigerme, Turkey). The Conference was attended by 62 participants representing 22 countries, UNEP's Mediterranean Action Plan and the Black Sea Commission Permanent Secretariat. The work was carried out in oral and poster paper presentation sessions, followed by four discussion sessions. The Conference was co-organised by two prominent international programs for the Mediterranean and Black Sea, namely by the Mediterranean Action Plan/ Priority Action Programs Regional Activity Centre of UNEP, and the Black Sea Commission Permanent Secretariat and supported by the UNEP MAP Coordinating Unit, the Municipality of Akyaka and two Turkish Universities.

We, 62 participants representing 22 countries, UNEP's Mediterranean Action Plan Priority Actions Programme and the Black Sea Commission Permanent Secretariat, in appreciation of the charms of the Town of Akyaka and the Gokova Bay, enhanced by the warm Turkish hospitality, and

- Knowing the uniqueness of the Mediterranean and the Black Sea coastal environment, the importance of the coastal areas for economic development of the riparian states and their culture since antiquities, as well as for people from elsewhere who repeatedly choose these areas for recreation;
- Being aware of the Mediterranean countries under the framework of the UNEP's Mediterranean Action Plan (MAP) and the Black Sea countries under the system set forth by the Bucharest Convention and the Black Sea Commission for regional collaboration in various environmental issues including improvement of integrated coastal management in their regions;
- Congratulating the Mediterranean countries for preparing and accepting the recent Protocol on Integrated Coastal Zone Management for the Mediterranean and noting that this is the first ever international legal instrument targeting better management of coastal areas;
- Applauding the interest of the European Union for contributing to capacity enhancement of the non-EU states of the Mediterranean and Black Sea countries to better managing their coastal and marine areas;
- Concerned by the fact that the interest for economic development still overtaking from time to time conservation and protection concerns in both regions, which often result in unrecoverable, important losses;
- Appreciating the 18-year long MEDCOAST activities for advancing integrated coastal management in the Mediterranean and the Black Sea countries by generating means for sharing data, information, knowledge and experience and by offering opportunities for region-wide capacity building and welcoming the establishment of the Mediterranean Coastal Foundation; unanimously agree to bring out the following observations and recommendations to the attention of the national, regional and international institutions dealing with coastal and marine issues, as well as of the public:
  1. Despite significant work carried out by the Mediterranean Action Plan and the Black Sea Commission as well as other regional and other international programs, support of donor institutions, noteworthy efforts of non-governmental organizations for advancing integrated coastal management in the Mediterranean and the Black Sea countries, the progress has been desperately slow in developing national management structures capable for integrated management of coastal areas based on scientific data and information and involvement of major stakeholders. It is observed that thirteen findings of the 1996 Conference and fourteen recommendations are still valid after 12 years due to this extremely slow progress. We do not wish to re-list all these findings and recommendations and make reference to the old document which can be found in MEDCOAST's web site ([www.medcoast.org.tr](http://www.medcoast.org.tr)).
  2. The Protocol on Integrated Coastal Zone Management for the Mediterranean provides useful guidance to national, regional and local administrations of the

Mediterranean countries in shaping their integrated coastal management systems, programmes and projects. It is at the same a powerful instrument for academics, NGOs and the civil society in general for urging the authorities to initiate and implement an integrated coastal management system and programs in their specific countries. We urge the governments of the Mediterranean and Black Sea countries to ratify without delay all protocols under the Barcelona and Bucharest Conventions and to comply meticulously with the rules and regulations set forth by these regional legislative documents. At the same time, we call on the academics, NGOs and the civil society to work for speeding up the process of ratification and the implementation of the regional protocols by the authorities of their respective countries. It would be useful to organize a pan-Mediterranean workshop to be attended by representatives of the governmental institutions, academics, NGOs and private sector for discussing the implementation issues of the ICZM Protocol with the goal of speeding up its enforcement.

3. We recommend comprehensive regional assessments, to be carried out by the regional institutions and the scientific community, of the state of integrated coastal management in the Mediterranean and the Black Sea countries together with successes and failures of the significant programmes and projects carried out in the past or the problems and shortcomings of those in implementation today. This effort would no doubt be extremely useful for deriving a list of valuable “lessons learnt”, shedding light to the areas where urgent improvement is needed and deducing a set of recommendations for designing new intergovernmental or donor-driven programs, projects and other actions in order to achieve best results from limited opportunities and scarce funds in the future.
4. The SMAP III call of the European Union, which provides financial support to eight projects preparing coastal management action plans for specific sites in six non-EU countries of the Mediterranean, reflects the importance given by the European Union to enhancement of integrated coastal management in these countries. However, the success and impact of these projects are severely limited by a number of factors including the insufficient local and national ownership of several projects, leadership of six projects by EU institutions, the low level of involvement of national experts and insufficient support from national governments. European Union and other international donors are urged to support integrated coastal management projects in the Mediterranean and the Black Sea countries that are really demand-driven projects from local to national scale (rather than brought in from outside), target a change in the existing management system (rather than preparing just a plan), use the national expertise in full, invest in national capacity building in order to have a level of continuity after the project ends.
5. The Mediterranean Programmes of the European Union that supported Euro-Mediterranean networks in several fields (environment, media, local government, etc) in early 1990’s were effective for capacity building in the EU and non-EU Mediterranean countries. Continuation of several successful networks like MEDWET, MEDCITIES, MEDCOAST in to our times proves the usefulness of this initiative. The European Union is urged to start a new program for supporting thematic Euro-Mediterranean-Black Sea networks of institutions and experts dealing with important issues contributing to coastal management like coastal erosion and shoreline management, beach management, management of specially protected coastal and marine areas, ecosystem management, conservation of flagship marine species, land use planning in the coastal zone, coastal management in changing climate, etc. Initiation and support for cross-basin networks of NGOs, local administrators and private sector involved in issues of coastal management would also be useful.