





## **Introduction and background**

1. To pursue the wish to increase its contribution to MAP, in 1991 the Italian Government had informed the Contracting Parties to the Barcelona Convention that the CTM (Centro di Telerilevamento Mediterraneo) - whose operational Center is based in Scanzano, Palermo - was ready to afford full contribution within the framework of MAP's initiatives.
2. In 1992, two missions were organized by the Italian Ministry for Foreign Affairs to Egypt to present to the Egyptian authorities, at that time occupying the position of President of the Bureau, the finalities of the offer as well as the possible modalities of cooperation of CTM in the role of Regional Activity Center of MAP.
3. The Bureau, while showing interest for the proposal, asked, through the MAP Secretariat, for more information on the structure, the experience, the personnel of the Center as well as for details on the proposed working programme to be included in the MAP.
4. As a model of its potential role and contribution, in 1993 CTM organized and fully supported, a two-month training course for two Egyptian experts on remote sensing techniques, their applications and the integration with other Information Systems (e.g. GIS).
5. In May 1993 the Joint Meeting of Socio-Economic Committee and Scientific and Technical Committee examined the Italian proposal and recommended to the Contracting Parties to accept CTM as Regional Activity Center for Environment Remote Sensing in the framework of MAP. In October 1993 the Contracting Parties at the 8th Ordinary Meeting accepted the proposal after examining the relevant explanatory documents prepared by CTM.
6. The present document is a progress report of the activities carried out by the Regional Activity Center for Environment Remote Sensing (RAC/ERS) since 1993.

## **Preparatory activities following the recognition of the Center as RAC**

7. After the recognition by the Contracting Parties as RAC, CTM intensively worked to get acquainted with the MAP activities and to identify among them precise lines of work where it could substantially contribute to the overall objectives of MAP as well as to specific ongoing activities.

8. In November 1993 the Director of the Center paid a visit to the Coordinating Unit of MAP in Athens to review the involvement of RAC/ERS in MAP's activities and to formulate possible proposals. During the same mission, a visit was paid to REMPEC in Malta to exchange views and plan joint projects.

9. In January 1994 the Director attended the meeting of MED-Unit and RACs' Directors and on that occasion extensive discussions were held individually and jointly with all RAC Directors to identify specific activities where the remote sensing techniques could provide significant input. In particular the meeting set the basis for the intervention of RAC/ERS in MAP's Coastal Areas Management Programme (CAMP) since it was recognized that the outcomes of remote sensing applications could represent a reference in space and time to specific ongoing activities related to this programme and therefore provide a significant contribution to its implementation.

10. During the period October 1993-July 1994, extensive correspondence and direct contacts were maintained with the Coordinating Unit to focus on the participation of RAC/ERS in MAP.

## **Activities of CTM in the Mediterranean**

11. CTM is involved in a number of activities whose results can be put at the disposal of MAP and can therefore provide a substantial contribution to the overall objectives of MAP and its components. Among all of them, the following are pointed out.

12. CTM has been participating at, and contributing to, the Clean Seas '93 Conference (Malta, 9-11 November); the Round Table discussion on Remote Sensing and Oceanography (Paris, 17 December 1993); the Regional Seminar on the use of Remote Sensing Techniques and Geographic Information Systems for Agriculture and Environmental Protection (Tunis, 22-26 March 1994) and the World Conference on Natural Disaster Reduction (IDNDR), (Yokohama, 22-26 May 1994).

13. CTM has been also involved in the following regional projects.

a) System for the environment monitoring

14. This is a research project which aims at the definition and creation of an advanced integrated system for the environmental monitoring based on the use of remote-sensing data and their integration with conventional ones.

15. The methodological approach is based on the working out of a pattern of investigation activities which, tested on a local scale, can be extended to the whole Mediterranean Region, in order to observe and study selected parameters concerning conditions and changes of internal and coastal areas.

b) **Assessment of the Mediterranean sea conditions and resources**

16. The project aims at the observation and study of the marine environment and its resources, by the use of satellite remote-sensing data and their integration with information from different sources.

17. The primary objective is the development and the application of satellite remote-sensing methods and techniques to the quantization of marine physical parameters and their correlations with bio-oceanographic phenomena, in order to locate areas characterized by high primary productivity.

18. The final goal is the creation of an advanced information system that, tested on experimental areas in the Mediterranean sea, can subsequently be extended to the whole basin.

19. To support the development of the use of remote sensing in the mediterranean region, CTM has applied for funding for the following projects:

i) **Monitoring of the Mediterranean Sea by microwave satellite**

20. This project was prepared jointly with Satellite Observing System (U.K.) and has been submitted to the European Space Agency to be funded by the CE.

ii) **Project for technical assistance to the Maltese Governemnt**

21. Together with the Malta Remote Sensing Center and the Maltese Planning Authority, a joint project for technical assistance by CTM has been submitted for funding to the CE, in order to support the Maltese Government in planning actions and policies in the environmental field. Similar initiatives may be extended to other mediterranean coastal Countries.

## **Activities of RAC/ERS in the framework of MAP**

22. The following are the activities carried out by RAC/ERS in the framework of MAP in the period October 1993-July 1994.

### Inventory of Remote Sensing Mediterranean Centers

23. Following the designation of CTM as RAC, the Center, in consultation with the MAP Coordinating Unit, started working on the preparation of an inventory of all Mediterranean Centers dealing with Remote Sensing techniques.

24. Questionnaires, designed to enable the computerization of the information were sent out to 38 Institute on May 1994 and, by the end of July, responses were received from 8 Institutes.

25. The activity aims at identifying Centers, facilities, technical resources, expertise, on-going or achieved projects and services, which are based on the use of satellite data for the observation and study of the Mediterranean Environment.

26. The long-term goal of the activity is to draw-up an overview of selected actions of common interest that might be undertaken by calling all the Mediterranean Centers to cooperate, taking into account the potentialities and experiences of each of them. To this purpose a guideline for a coherent analysis of requirements and objectives for a joint activity is under preparation and will be distributed by the end of 1994.

#### Conference MED 21 on the Sustainable Development in the Mediterranean

27. RAC/ERS has been fully involved in the preparation of the Ministerial Conference which will take place in Tunis on 1st November 1994. The Director of the Center participated at the Committee Meetings and presented a report on Environmental Observation Tool proposed to be included in the Agenda 21 Document that the Meeting will adopt.

#### Coastal Areas Management Programmes (CAMPs)

28. The RAC/ERS has identified, in agreement with the other RACs and the Coordinating Unit, CAMPs as one of the main field where the remote sensing techniques could provide a significant contribution to the development of the approved activities. As a result, extensive work was carried out to propose individual or joint projects with other RACs for the ongoing CAMPs of Fuka-Matrouh, Albanian Coast, and Sfax. Several missions were organized in the three regions to discuss with the national authorities on priority areas of work as well as training needs.

#### Fuka-Matrouh CAMP

29. The RAC/ERS plans to contribute to the Fuka-Matrouh CAMP through the development of a project based on the use of remotely sensed data for the analysis of:

- areas subject to desertification and erosion processes;
- fringe areas of degraded and urban zones.

30. RAC/ERS is also ready to provide technical assistance to local institutions which will be involved in the development of the project. Operational cooperation with PAP/RAC is being discussed.

#### Albanian CAMP

31. The RAC/ERS' planned intervention aims at the study of the recent coastline evolution in order to identify vulnerable areas to be protected by conservation measures.

32. The programme is divided into three phases:

- study on the applicability of remote-sensing and selection of the test areas;
- identification of the time range for the observation of changes in the coastline;
- assessment of the shoreline changes which can be observed by satellite remote-sensing and its comparison with existing cartography.

33. The Albanian Hydrometeorological Institute is ready to provide local support to the project.

#### Sfax CAMP

34. The RAC/ERS' intervention aims at identifying the main contributions of remote-sensing technology to the management and control of the environmental changes in the Sfax Area with reference to:

- marine polluting phenomena;
- climate changes;
- mapping of coastal zones;
- inventory of water resources;
- geographic representation of protected areas and historical sites;
- application of integrated advanced systems for coastal zone management.

35. A training course to two Tunisian experts, who will participate to the project, has been already carried out.

#### Monitoring of Vegetation in the Mediterranean Region

36. This project aims at carrying out an updated repetitive and synoptic monitoring of the distribution of vegetation classes and draught areas as well as their changes in time and space by processing remote-sensing data acquired from satellites.

#### Training Courses and educational activities

37. As it was mentioned in the present document, since 1993 RAC/ERS has supported two training courses on remote-sensing technologies and applications, for experts of Coastal Countries: a two-months training for Egyptian experts provided information on the main topic related to remote sensing, and allowed the attendants to become really confident with the main software employed for remote-sensing and GIS; a five-days course for Tunisian experts was planned to give the trainees elements to evaluate the contribution that remote-sensing can provide for environmental planning and management.

38. Other RAC/ERS initiatives are being set up in order to strengthen training and assistance activities, exchange and distribution of technical results, in order to increase the sharing of knowledges and resources among the Mediterranean Countries.