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ERS/RAC EVALUATION REPORT

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EXECUTIVE SUMMARY

This document presents an Evaluation Report for ERS/RAC (Environmental Remote Sensing/Regional Activity Centre) based in Italy. Founded in 1993, ERS/RAC constitutes a National Focal Point (NFP) for the UNEP/MAP (Mediterranean Action Plan) and to date, the Centre has had the primary responsibility of delivering Remote Sensing/Earth Observation (EO)-based monitoring expertise and capacity to select users across the Mediterranean.

As the evaluation process has highlighted, the delivery of this technical support was achieved to a certain degree but with decidedly mixed results. The operations of the Centre and its overall effectiveness have been severely hampered by a number of institutional, managerial and financial constraints. These impediments, combined with additional operational problems, never allowed the Centre to reach its full capacity and stymied its ability to meet increasing demands for the specialised (monitoring) support and expertise ERS/RAC offered to clients.

Notwithstanding the obstacles, which are currently being addressed and removed, ERS/RAC did manage to attain some significant deliverables. While many of these achievements were project-specific and thematically/geographically limited in scope, they provide building blocks and valuable lessons learned for the proposed reform of ERS/RAC and its mandate.

This Evaluation Report outlines a “road map” towards a comprehensive reform process, which will refocus and orientate the mandate of ERS/RAC from a stricly remote sensing (monitoring) capacity to a broader range of IC (Information and Communication) Services. This re-orientation has been widely endorsed by MAP Contracting Parties/actors and will require core changes in the Centre’s institutional mandate, organisational structure, technical and operational capacity, and resource requirements including personnel and financial.

The planned reforms will effectively “rebrand” ERS/RAC to INFORAC. Subsequently, it will function as a dedicated service provider, delivering value-added IC services in response to defined user and policy requirements and the overall demands of MAP. The services it offers will be avaliable, reliable, affordable and sustainable and deliver positive impacts for users that will be routinely evaluated as part of service validation and improvement procedures. The service delivery model will be built around a MAP Service Network implemented at the regional level across the Mediterranean, which INFORAC will initiate and maintain using a number of coordination (e.g. Integrated Web Portal) and collaboration (e.g. partnership building and “brokering”) mechanisms. Furthermore, the service network will allow the closer integration of key stakeholders and resources, which will greatly empower the thematically-specific activities of INFORAC in the areas of:

- Pollution Prevention & Control,
- Sustainable Management of Coastal Zones,
- Integrating Environment & Development (through shared database management across the MAP constituency).

The planned activities of ERS/RAC are outlined in detail in the 2004-2005 Biennium Project Document, which will be periodically reviewed to ensure convergence with the overall reform plan.

The recommended actions required to facilitate reforms including some pragmatic “next steps” are also presented in the final sections of this Evaluation Report. These suggestions warrant careful review by interested MAP parties and further elaboration prior to actual implementation.

In summary, the environmental and development challenges of the Mediterranean basin remain highly complex and most challenging. Through INFORAC, Italy as a pivotal and influential country in the region, is committed to playing a proactive and innovative role in protecting the basin’s diverse resources and in defining a more sustainable future.

For over three decades, MAP (and its signatory nations) have made valuable contributions to the goal of sustainable development in the region. However here too, re-evaluation and reforms are necessary to accommodate the profound social, economic and environmental changes impacting the basin. In addition, there are demands for MAP to become increasingly “action oriented,” true to its original appellation as a Mediterranean Action Plan and in response to the needs of its diverse beneficiaries. To this end, focused IC-capabilities and services can play an important enabling role and INFORAC is committed to meeting user requirements at many levels.

This will occur by strengthening the shared information management (IC) capacity of MAP components internally, as well as supporting the activities of its cross-sectoral constituency as they make vital individual contributions to the collective goal of sustainable development in the Mediterranean.

INTRODUCTION

Over recent years and with accelerating global inter-dependence, insecurity has emerged as a universal challenge, particularly with respect to the inter-related requirements of environmental management, socio-economic development and geopolitical stability. Consequently, insecurity is a highly complex and multi-faceted problem that impacts populations to varying extents. For example, it may originate from man-induced causes such as conflicts or the depletion and degradation of essential natural resources such as water. Alternatively, events with natural origins including earthquakes and floods cause localised but acute insecurity for the affected populations. Finally, there are the cumulative, progressive changes with potentially serious global impacts over the long term. They include climate change, sea-level rise, the loss of biodiversity and associated consequences of global change that are now more fully understood.

As an increasingly integrated and inter-dependent region, the Mediterranean Basin including its neighbouring countries can no longer be complacent and/or feel secure in a world replete with potential and actual insecurity. This sobering fact is being recognised at the highest political and decision-making levels and has influenced a number of long term initiatives and programmes that seek practical solutions to complex challenges across a diversity of themes including environmental management and sustainable development.

It is within this framework that this Evaluation Report has been compiled. The document not only examines the specific findings of a critical evaluation of ERS/RAC in Italy but also outlines a pathway towards reforms. Given the complex and dynamic nature of the challenges described above, ERS/RAC (also referred to as “the Centre”) is committed to re-orienting and improving its structure, resources, management and services so that it may contribute and support stakeholders and participants in the MAP (The Mediterranean Action Plan) as well as other beneficiaries across the region.

Having established valuable technical capacities, expertise and experience within its original mandate of “environmental remote sensing”, ERS/RAC intends to redefine its mandate and consolidate support services to embrace the most relevant capacities offered by IC (Information and Communication) that directly address the priority requirements of users and stakholders across the Mediterranean Basin. This includes promoting the development of an operational information system/network to support the environmental policies and related actions of MAP.

Within the environmental management sector, the delivery of content-relevant and timely information to key beneficiaries especially decision and policy makers is not a new requirement and has been the focus of numerous projects, programmes and initiatives of varying scale and effectiveness. To this end, ERS/RAC intends to offer an innovative and practical approach to IC service delivery (outlined later under recommendations), which will creatively support this goal within the overall context and objectives of MAP. In future, the “success” of ERS/RAC will not be assessed by simply making available and/or delivering technical services (on a project-specific basis) but through the objective measurement of derived benefits to users from the local, national and regional levels across the Mediterranean Basin.

BACKGROUND TO THE EVALUATION OF ERS/RAC

The evaluation of ERS/RAC was initiated as part of a wide ranging review and evaluation process across many aspects and elements of MAP. Indeed, the ongoing external evaluation of MAP suggests that it is at a “crossroads” thirty years after its launch and consequently, a strategic and operational evaluation is required. Although on a micro-scale, this same motivation applies to the evaluation of ERS/RAC, which has experienced both positive and negative changes since its inception over a decade ago.

The 13th Ordinary Meeting of the Contracting Parties (COP) to the Convention for the Protection of the Mediterranean Sea against Pollution and its Protocols (The Barcelona Convention)”, held in Catania, Italy on 11-14 November 2003 adopted Recommendation I.A.2.1, entitled MAP and RACs evaluation, in which the COP called on the Secretariat:

“To launch an external evaluation of ERS/RAC, drawing on the lessons learned from the previous evaluations in terms of approach, methodology and criteria”.

Within this context, ERS/RAC in close consultation with the MAP Coordinating Unit (MEDU) and the Italian Ministry for the Environment and Territory engaged the services of consultants on a part time basis during the period 1 September 2004 – 1 November 2005 to work on the evaluation process (please refer to consultancy terms of reference). The work of the two consultants was pro-actively supported by ERS/RAC.

Following the formal consultancy and its rather time constrained information collection and evaluation process, ERS/RAC continued the process through a number of formal and informal mechanisms (see later for description). The results complemented and expanded upon the findings of the consultants, and also supplemented their value.

Indeed, this report and especially the final recommendations reflects a culmination and synthesis of multi-disciplinary efforts over a six month period. Consequently, the results are presented with a high degree of confidence with respect to their accuracy, relevance and comprehensive nature. Most importantly perhaps, the outputs of the evaluation process have allowed the formulation of a pragmatic ‘road-map’ for the reform of ERS/RAC and defining its future contributions to MAP.

METHODOLOGY, SCOPE AND SCHEDULE OF THE EVALUATION PROCESS

The evaluation was designed to comprehensively assess the activities carried out by ERS/RAC by comparing its original organisational mandate and objectives with actual outputs and results that were achieved over the course of its operations to date.

In addition, an effort was made to consider the cost/benefits of key activities (although this was difficult to assess due to constraints/limitations affecting ERS/RAC – see later). Overall, the evaluation was driven by the cardinal question of whether ERS/RAC was able to fulfil identified (user) needs and if it promoted and contributed to the broader MAP objectives of protecting the environment of the Mediterranean basin while improving its prospects for sustainable development.

The evaluation methodology involved a number of (data collection) mechanisms, which included:

- Desk Review of relevant documentation
- Limited circulation questionnaire sent to key stakeholders in MAP
- Collection of comments via email including remarks on earlier drafts of this report
- Telephone interviews
- Personal interviews especially with senior decision and policy makers with an interest in MAP
- The consultants undertook 5 (travel) missions to support the evaluation process
- Over 50 institutions listed in the Directory of MAP Partners and Components were contacted and invited to make contributions resulting in a variable but nonetheless, useful level of responsiveness
- Finally, inputs and suggestions regarding the future of ERS/RAC were sought during formal meetings related to ERS/RAC and/or MAP.

For example, the evaluation carefully considered the COP 13 Recommendations II.D: INTEGRATING ENVIRONMENT AND DEVELOPMENT, namely:

“To support ERS/RAC activities and the new objectives of the Italian Centre towards an Information and Communication Technology by the 14th Meeting of Contracting Parties in 2005;

To request that Italy sign a Host Country Agreement with UNEP/MAP, clarifying the status and structure of ERS/RAC, as well as its objectives and contributions to UNEP/MAP;

To request the Italian authorities to draw up and develop a new programme for the Italian RAC focused towards an Information and Communication Technology Centre, in close cooperation with the UNEP/MAP Secretariat, taking into account the suggestions of other countries, and present a proposal for consideration by the Contracting Parties in 2005.”

Not surprisingly, the preceding suggestions from the COP 13 meeting had a significant impact on the evaluation process and in shaping its final recommendations. In addition, they had special relevance to the proposed reforms and future status/structure of ERS/RAC, including the need:

"To implement its programme of activities in close cooperation with concerned MAP components and to extend its scope of activities to Information and Communication Technologies;;

In terms of the actual evaluation schedule, a number of events/dates are noteworthy. In particular, while the formal consultancy-evaluation was carried out under an extremely tight schedule (over a two month period), the continuation of the evaluation process has been less time-constrained and therefore, useful in supplementing and consolidating findings. Notable dates include:

- September-October 2004, consultant questionnaire was distributed to all MFPs and MAP Components eliciting responses and inputs;
- 28 October 2004, Consultants submitted an ealy draft report to the MAP Coordinating Unit (MEDU) and the Italian Ministry for the Environment;
- November-December 2004, final questionnaire responses were gathered with follow up by phone, as required;
- 16 December 2004, a meeting on the External Evaluation of ERS/RAC was held in Catania, Italy with all RAC NFPs (National Focal Points) and MAP Components were invited to attend. Although the evaluation process was not yet complete, the meeting suggested a number of focus areas for the evaluation including:
    - The achievements of the Centre and assessment of its overall value
    - The constraints and shortcomings faced by the Centre and Contracting Parties in their dealings with the Centre
    - The future needs of MAP and its expectations with respect to the ERS/RAC,
    - Proposals for strategic improvements in technical services including an expanded mandate from the limited "environmental remote sensing" into other beneficial IC domains – that are both user and policy focused on the requirements of MAP
- February-March 2005, a draft of the Report was distributed to all MFPs and MAP Components eliciting responses and inputs;
- April 2005, the final draft of the Evaluation Report was compiled following received comments and presented at the ERS/RAC National Focal Points meeting in May (to be jointly held with PAP/RAC and BP/RAC).

All of the preceding focus areas/suggestions are addressed within the context of this Evaluation Report and outlined in the following sections.

ORIGINAL MANDATE OF ERS/RAC

In order to objectively assess the contributions of ERS/RAC to date, it is important to highlight its original mandate and perceived objectives. In doing so, this allows the opportunity to compare and contrast achievements against these benchmarks, and to identify areas of convergence (value-added) versus shortcomings.

It is important to note that since the inception of ERS/RAC in 1993, the technological tools at the core of its mandate namely, GIS and Remote Sensing (RS) have undergone profound changes. For example, while 'Environmental Remote Sensing' (ERS) was once considered a highly specialised application, the related technology has increased exponentially in its utility and user-accessibility; the cost of implementation has similarly been reduced and to a certain degree, the tools have become widely distributed amongst a growing user community and entered what could be considered the "IC mainstream." Indeed, GIS and Remote Sensing, once highly distinct applications have now converged into the generic domain of "spatial information management." Furthermore, the latter capacity is now considered essential and central (rather than optional) to a vast range of environmental management requirements including those of most relevance to the MAP agenda e.g. monitoring, impact assessment etc.

These technical changes are significant since they justify a re-definition of the original mandate (see below) together with a re-orientation of the organisational and management structure of ERS/RAC towards a new (IC) mandate.

According to Project Documents ME/1100-97-10, ME/1100-98-06 and ME/XM/6030-00-07, the original mandate of the Centre had three main objectives:

- To fully integrate the use of advanced tools such as Remote Sensing and GIS with more conventional sources of information for environmental monitoring and sustainable development in priority areas in MAP
- To initiate technology and know-how transfer of remote sensing as a tool for environmental monitoring
- To raise awareness of environmental and sustainable development issues such as desertification, coastal changes, urban expansion, coastal water quality and vegetation cover transformations

Concurrently and to achieve these objectives, the following requirements were identified:

- Adequate financial and operational support from the host Country (Italy) and MTF,
- Cooperation with the Mediterranean coastal countries and other MAP components (MEDU and RACs),
- Adequate financial and administrative support from other cooperating and implementing bodies.

In the course of the evaluation it became clear that while many of the objectives in the original mandate of ERS/RAC were addressed – although with mixed results - the mandatory requirements to facilitate their fulfilment were never fully met. This created significant constraints to the proper functioning and productivity of ERS/RAC, which are more fully discussed in a later section.

However, the achievements (primarily as specific projects and related activities) attained by ERS/RAC warrant description and assessment in the following sections.

ERS/RAC – PROJECTS AND ACTIVITIES

Since inception, the activities of ERS/RAC have been *project-specific* rather than oriented towards "service provision." Consequently, they have been characterised by activities that are stand-alone or isolated, thematically and/or user-specific, and quite limited in terms of both duration, geographic coverage and potential impacts/benefits. This is not necessarily a poor reflection on ERS/RAC but simply the reality of project-specific work and resource availability for its implementation.

While there is a role for specific projects within the environmental sector, monitoring and integrated management requirements for example, can be more effectively addressed through continuous and longer term service provision. This is certainly important to consider when determining the future mandate of ERS/RAC, especially with respect to the priorities of MAP and potential beneficiaries of IC "services" around the Mediterranean basin.

In terms of the project activities completed by ERS/RAC to date they include inputs into 6 CAMPS (Coastal Area Management Programmes), 6 forums, 3 workshops, 6 information activities, 3 activities for integrating environment and development and 4 other (co-financed) projects. The value or otherwise of each project/activity was not evaluated in the post-completion phase. Such an evaluation or validation process would have been useful and will certainly be implemented in future to determine what works and what does not with respect to project implementation and/or service provision.

The thematic details of projects/activities undertaken by ERS/RAC are as follows:

<u>Coastal Area Management Programme</u>
CAMP Albania - "Monitoring of Coastal Evolution through Space Remote Sensing";
CAMP Tunisia - "Modelling of Coastal Circulation and Pollutants Distribution";
CAMP Egypt - "Assessment of Natural Resources and Soil Conservation Issues in the Coastal area of Fuka - Matrouh, Egypt";
CAMP Israel –two activities: "RESSAC Project Remote Sensing Support for the Analysis of Coasts" and SARSAIL "State-of-the-art of remote sensing applications in Israel";
CAMP Lebanon - "Updating the cadastral maps of two Municipalities and CAMP data management";
CAMP Algeria - "Assessment of land use/cover change in the period 1987-1998".

<u>Capacity Building</u>
Implementation of FORUM Initiatives: meetings between planners and RS experts to discuss the "Support of Remote Sensing Techniques to Planning and Decision Making Processes for Sustainable Development".
National Forum in Egypt;
National Forum in Malta;
National Forum in Lebanon;
Regional Forum in Morocco, to launch the establishment of an operational network among Mediterranean National Reference Centres;
Forum on "Sustainable Development and Sustainable Use of Natural resources in Bosnia & Herzegovina";

Regional Forum in Tunisia on “Remote Sensing Support to the Calculation and Monitoring of Sustainable Development Indicators”.

Organisation of Workshops/Meetings in the MAP Context

Workshop on the “Use of Integrated Information Sources for Land Degradation Assessment – Contribution of Remote Sensing and GIS”. Palermo, 9-12 September 1996

First Meeting of RAC/ERS Focal Points, Palermo, 9-11 September 1994

Joint Meeting of the National Focal Point of BP/ERS/PAP RACs, Palermo 12-16 June 2001

Information and Dissemination Activities

Survey on "Oil Pollution Monitoring in the Mediterranean" in cooperation with the Tromsoe Satellite Station (Norway)

Review of Mediterranean Environmental Management Actions Using Space Techniques

Report on "Desertification Monitoring and Control: Analysis of Remote Sensing-based Projects and Programmes in the Mediterranean"

Report on "Characterisation of Sea Water Quality: Analysis of Remote Sensing-based Projects and Programmes in the Mediterranean"

STEPINMED Space Techniques-based Environmental Projects and Programmes in the Mediterranean

MERSI.Web Network - Mediterranean Environment Remotely-Sensed Information Web.

Integrating Environment and Development

In this regard, the Centre assisted the Mediterranean Commission for Sustainable Development, with the MCSD programme on "Indicators for Sustainable Development in the Mediterranean" and in particular with:

- An inventory of remotely sensed sustainable development indicators: definition of methods for monitoring indicators through remote sensing in Morocco
- An Inventory of remotely sensed sustainable development indicators: definition of methods for monitoring indicators through remote sensing in Tunisia
- A Position Paper "Remote Sensing and Indicators for Sustainable Development: the European focus".

Projects Co-funded through External Sources

DAPHNE Project - "Classification and Monitoring of the Mediterranean Vegetation Relying on Satellite data”;

RESSAC Project – “Remote Sensing Support for the Analysis of Coasts”;

Accompanying Measures: "Sustainable development and Sustainable Use of Natural resources in Bosnia & Herzegovina" approved in early December 2001 by EC DG RTD;

CoLD Project - “Improving coastal land degradation monitoring in Lebanon and Syria”.

Prior to identifying and evaluating the achievements/benefits derived from the preceding activities, it is important to highlight the constraints and limitations imposed on ERS/RAC, which had a direct impact on its overall performance.

In summary, the most potent constraints were not of a technical nature but managerial, organisational and financial. Addressing and resolving these issues is currently underway and will remain a priority since institutional reforms and

technical service delivery *cannot* be sustained without organisational, management and fiscal stability.

CONSTRAINTS

The major constraints impacting ERS/RAC were:

1. Lack of a clear mandate

From its inception, the mandate of ERS/RAC was never clearly defined. Furthermore, the rather narrow focus on “environmental remote sensing” had an increasingly limited relevance to MAP and its range of thematic activities. Furthermore, it is impossible to gauge whether the ERS capacity of the Centre was supply rather than truly demand driven. Such an imbalance presents serious obstacles to maintaining technical/user relevance and overall sustainability. Consequently, the Centre became increasingly isolated with no common language or universally accepted mandate within MAP, in its relations to other Centres (RACs) and/or “client” countries across the region.

2. Lack of administrative and structural/functional clarity

Until recently, ERS/RAC had no Memorandum of Understanding (MoU) with its host country (Italy), which created an administrative vacuum. Furthermore, its status as a quasi-private organisation made interactions, cooperation and true partnerships with a public/multi-national organisation such as MAP most problematic. This ambiguity certainly fed suspicions and a reluctance to fully engage with ERS/RAC at many levels including related environmental iniatives such as EC/GMES, UNEP etc. This adversely impacted attempts by ERS/RAC to openly share and disseminate information across the MAP community that could have been beneficial to various activities. Furthermore, misunderstandings and over-expectations have typified ERS/RACs relationship with MAP and other international actors and organisations, which all conspired to hinder progress and delivery.

3. Lack of stable management and technical (personnel) resources

Due to a number of factors, not least the lack of a clear mandate and MoU, ERS/RAC experienced continual management instability most notably, in the rapid turn-over of Directors. This was reflected in a general inability to plan the Centre’s evolution in a coherent manner and hindered the development of strategic relationships with internal and external actors. The consequences of management instability were also reflected in the inability to retain key technical staff and the subsequent erosion of internal skills and valuable (technical/project) experience.

4. Lack of adequate and stable financial resources

This fundamental problem stymied ERS/RAC at numerous levels-managerial, operational, planning, technical capacity and personnel development. Over many years, (please refer to financial statements for details) the proportion of funds derived from voluntary MTF and EC sources was significantly lower than contributions from Italy to MTF. Upon its inception in 1993, the Government of Italy committed to financing the Centre fully. However, this proved impossible to sustain due to the absence of a MoU and the movement of the Centre into activity-areas that were not compatible with (Italian) budgetary conditions. The net result was the imposition of severe financial constraints on the Centre’s activities and a general lack of fiscal stability. This impeded planning, project development and the Centre”s ability to expand its technical support from the localised to the regional level – a clear requirement for MAP with its pan-Mediterranean focus.

5. Lack of true partnerships

Establishing lasting and appropriate partnerships is essential to addressing the complex environmental challenges confronted by MAP. The public, private, non-governmental, science and research sectors as well as the citizenry at large all have valuable contributory roles to play in promoting the goals of sustainable development. Similarly, an aspiring technical and information management Centre such as ERS/RAC depends upon partnerships at various levels (within MAP and externally) for its sustainability and success. Clearly, ERS/RAC has developed limited collaborations especially at the project level. However, the requirement long term operational partnerships at the organisational and institutional levels is lacking although hardly surprising given the aforementioned constraints. Building partnerships will be integral to ERS/RACs future re-orientation towards IC services delivery.

6. External Perceptions

Based on the limited results of the consultant-questionnaire and other feedback, external perceptions of ERS/RAC by MAP stakeholders and components were decidedly mixed and in some cases, quite negative. While the technical and project-specific contributions were generally appreciated and valued, this is clearly not sufficient. The future of the Centre within MAP will depend upon its ability to collaborate at various programmatic and institutional levels e.g. with other MAP RACs. Consequently, this will require a re-establishment of clarity and confidence thereby generating more positive external perceptions—and sustainable partnerships. To this end, the importance of building and maintaining positive perceptions towards the proposed Centre (INFORAC) cannot be under-estimated or neglected.

Notwithstanding the many daunting obstacles and constraints imposed on ERS/RAC over the years, the Centre has managed to perform and attain significant achievements (see below). These achievements are noteworthy since they contribute towards the proposed reforms of ERS/RAC – and also help to consolidate its future role within MAP as a dynamic, responsive and user-oriented service provider delivering IC capabilities that not only supports UNEP/MAP but also the (IC) requirements of stakeholders across the Mediterranean basin.

ACHIEVEMENTS

Since its establishment, ERS/RAC has managed to realise a number of achievements. While they range in impact and benefits from the significant to quite limited; important lessons have also been learned (noted below), which will help define the proposed INFORAC and optimise its contributions to MAP. Notable achievements include:

1. In terms of its original mandate and objective of "environmental remote sensing," ERS/RAC has succeeded in introducing advanced remote sensing techniques for environmental monitoring to a number of users and MAP thematic areas. This includes the application of advanced EO (Earth Observation) data resources e.g. very high resolution imagery; and the implementation of applications that merge EO with traditional (ground-based) techniques as the basis for long term environmental monitoring. The latter activity is most significant since this approach lies at the core of global monitoring efforts including the EU funded GSE (GMES Service Elements) Programme now entering the service expansion phase.

2. Within the context of its project activities, ERS/RAC raised the general level of awareness and understanding of the importance of EO/RS to environmental management in the Mediterranean basin. This includes introducing select decision and policy-makers to the core concepts and potential benefits of environmental remote sensing. Measuring and quantifying the impact of spatial information products/projects on the decision/policy making process was not previously undertaken but will be integrated into future activities.

3. Within its original mandate and in the course of project implementation, ERS/RAC developed a number of technical "best practices" (based on the available science, data and technologies) and applied these towards practical (monitoring) solutions. Furthermore, many activities were customised to the specific needs and technical requirements of the target country/location and end-user(s). This process provided a unique understanding of user requirements across a range of eco-systems that constitute the Mediterranean basin.

4. In the course of the above, a number of replicable techniques and valuable (project) databases were developed and placed into a de facto ERS/RAC repository. To date, the proactive sharing and dissemination of this "knowledge-capital" and its component archives has not been fully exploited. However, it will be addressed in future through the implementation of information dissemination tools such as Internet Map Servers (IMS), Interactive Web Portals, ftp-based download/upload links, mass geo-data publications etc. as part of an accessible "on-line" clearinghouse maintained by INFORAC for the benefit of MAP.

5. ERS/RAC successfully organised and/or participated in a number of events, which fulfilled the following functions:

- Training sessions that transferred specialised knowledge and expertise to local users e.g in RS environmental monitoring techniques within the CAMP projects/countries.
- Meetings and workshops to promote issues such as standards in environmental monitoring; guidelines for the use of indicators etc.

- Participation in MAP-related meetings for planning purposes, policy discussions etc.
- Both formal and informal gatherings of scientific and remote sensing experts to exchange the latest advances and expertise in RS tools and methodologies.

6. ERS/RAC made periodic contributions to scientific publications and fora related to remote sensing and environmental monitoring highlighting both UNEP/MAP activities and monitoring requirements in the field e.g. EURISYS Symposium, Rabat, Morocco, 2002.

7. Various project and non-project related documentation, for example, position papers, articles, publications etc. were developed outlining the relevance of environmental remote sensing specifically to the Mediterranean Basin e.g. “Remote Sensing and Indicators for Sustainable Development:” Position Paper.

8. ERS/RAC developed a number of proposals and/or provided assistance to users/applicants developing proposals to secure external funding for project actvities e.g. RESSAC Project and COLD Project (Lebanon and Syria) –Improving Coastal Land Degradation Monitoring.

9. Although on a limited basis, active cooperation with RACs and other bi-lateral partners did occur, particularly in the execution of select projects e.g. RAC/PAP-Egypt; Capacity building for the assessment of land resources. Although long term cooperation and partnership building remain priority objectives to the future INFORAC strategy.

10. Through a diversity of activities, ERS/RAC supported users across a range of Mediterranean countries (ecosystems) by applying advanced EO data resources and environmental monitoring techniques. This had a number of direct and indirect impacts:

- It demonstrated the need for continuous innovation in the application of RS and spatial technologies such as GIS to meet the changing demands of environmental monitoring across the Mediterranean basin
- Forged (short term) working links with other MAP Centres highlighting the need for more established partnerships and cooperative arrangements at all levels
- Highlighted the requirement for more systematic and efficient (IC) empowered communication and information dissemination mechanisms between RACs and other strategic stakeholders in MAP and across the region
- Identified the need to complement highly specific or stand-alone projects with more regional approaches to monitoring since far greater benefits can be realised at the regional scale. This includes the wider application of shared IC infrastructures and tools, methodologies and standards; including regionally-relevant databases to support the MAP agenda and its structures.
- Highlighted the need to migrate from narrowly-defined technical interventions towards more long term, continuous and responsive service provision that measurably contributes to the establishment of monitoring capabilities at the local and regional levels.

To evaluate the preceding achievements individually or collectively as either “negative” or “positive” is not particularly informative or useful, especially with respect to the future for ERS/RAC. Of far greater importance is to identify the most valuable assets or outputs; the most problematic obstacles to reform and the

outstanding needs and requirements that will help shape the future structure and operations of ERS/RAC within MAP.

From the lengthy and wide-ranging evaluation process, the key elements of a “road map” towards the transformation of ERS/RAC into INFORAC have emerged. These include a number of implicit organisational, technical, institutional and operational issues, which will have to be resolved both internally and within the wider context of UNEP/MAP.

The following sections highlight the key elements of this “road map” complemented with specific recommendations for the required actions and next steps. These are presented against the back-drop of the following cardinal points, which are undeniably relevant to the evolution of both INFORAC and MAP:

1. Appropriate IC capacities and capabilities offer numerous potential benefits to MAP at many levels and in the past, they have been significantly under-utilised and/or their full potential has not been realised;

2. If the Mediterranean Action Plan (MAP) in its next phase wishes to evolve from a Convention (guidelines) and its constituent Protocols to actually implement a truly regional “action plan” then the stengthening and application of IC capabilities will be most valuable;

3. The agenda and activities of MAP should not become overly centralised. Therefore, the coordinated decentralisation (supported by IC tools) of specific (thematic) activities/actions implemented through the Regional Activity Centres (RACs) in partnership with relevant stakeholders is most desirable;

4. Italy remains a pivotal country within the Mediterranean basin both in terms of its geopolitical, socio-economic and environmental impacts as well as its participation and contributions to MAP. Consequently, its representative RAC should be fully supported and of the highest quality and capabilities; delivering (IC) services that are reliable, accessible and sustainable offering both national and regional-scale benefits to a range of users and beneficiaries.

EVOLUTION OF ERS/RAC INTO INFORAC – JUSTIFICATION AND CONCEPT

As previously mentioned, it is unquestionable that since the launch of ERS/RAC in 1993 the IC sector has undergone startling changes and innovations that continue apace. This process has impacted previously specialised or niche technologies such as remote sensing and GIS that have progressively converged with mainstream platforms and applications making them more integrated, powerful, accessible and cost effective for a wider range of users.

To this end, the original and dedicated focus of ERS/RAC on “environmental remote sensing” is no longer sufficient or indeed adequate to address the IC requirements of MAP. In future, ERS/RAC must broaden its technical mandate and operations to apply and optimise the true potential of the IC sector in a manner that directly serves the demands and (user) requirements of MAP and its components. This strategy was endorsed by a meeting of MAP/RAC Focal Points in Catania in December 2004.

An “expanded (IC) focus” must however, be strictly user driven and not oriented towards the rapidly changing and vast supply-side, which characterises the IC sector.

All available feedback from the MAP constituency indicates that the latent demand for user relevant and sustainable IC services both exists and is growing and has an important role to play in supporting both the policy agenda and activities of MAP. The most pressing issue then is not whether IC services are of value to MAP- they most certainly are – but precisely what are the priority user requirements, how best can they be addressed and what mechanisms need to be established to develop, deliver, maintain, validate and evaluate the impacts and benefits of such services on MAP? Clearly, these functions and responsibilities will be central to INFORAC’s future mandate.

The operational details and modus operandi of INFORAC will require detailed assessment, planning and documentation. For the moment and within the context of this Evaluation Report it is useful to present a brief conceptual overview of what is envisaged. This not only establishes a starting point for discussions amongst the potential stakeholders, partners and beneficiaries, but also provides the context for the recommendations and next steps presented in subsequent sections.

CONCEPTUAL MODEL FOR INFORAC

Focus on Service Delivery

To operate as an effective (IC) Service Provider for MAP, INFORAC will have to maintain a concurrent top-down and bottom-up approach, and exploit regional synergies wherever they exist. The top-down (MAP policy agenda) will contribute to shaping the services to be delivered (perhaps from a standardised Service Portfolio) by highlighting the MAP policy priorities and how best the services can address the information needs of environmental policy domains across the Mediterranean basin.

The corresponding bottom-up logic will identify and engage the widest possible earth observation data user base for service delivery from within MAP and its components, as well as the wider user community across the region. INFORAC will strive to deliver the optimum services/support and maximise (user) benefits via incremental and balanced growth between demand (from users) and supply (of services). Most critically, demand or user-led growth will predominate over supply or capacity-led expansion.

In summary, the services offered by INFORAC must offer significant, quantifiable and concrete benefits for a variety of users including decision and policy makers, and citizen-constituencies concerned with environmental challenges across the Mediterranean. Furthermore, the benefits should be of sufficient scope and calibre so as to justify continued political support and investment into building IC capacity at INFORAC as well as within MAP and across its organisational components.

Focus on Sustainability

For INFORAC to succeed as a service provider, the services it offers must at the very least, meet the following characteristics:

- **Available.** Readily accessible to users on demand and into the foreseeable future.
- **Reliable.** Consistently meet user-defined requirements including quality and standards, amongst other criteria.
- **Affordable.** The quantifiable benefits of the services should justify the costs of delivery.
- **Sustainable.** The services and/or technical support delivered to users should have longer term impacts, especially in terms of strengthening monitoring capabilities and contributing to the goal of sustainable development in the Mediterranean basin.

In many respects, the sustainability issue is the most challenging. It is relatively easy to claim “sustainability” although difficult to prove and in some respects, its longer term potential or benefits is even harder to disprove. Consequently, “sustainability” within the context of INFORAC and its proposed mandate/services will not be an absolute condition that is reached in discrete and well defined steps; it will develop progressively. However, there are qualitative and quantitative conditions indicative of long term sustainability that will be applied to INFORAC and its operations, namely:

- Service delivery must occur within the context of operational (“real”) scenarios where user requirements are evident, clearly defined and directly addressed by the services provided.
- The regularity of information delivery will be integral to INFORAC services – using data resources such as remotely-sensed imagery, digital maps, descriptive data sets etc. – packaged together as products and complemented by value-added services such as training, customised applications, technical and policy impact assessments etc.
- There should be significant geographic coverage (up to the regional scale) by the services offered.
- The services must have consistent quality and reliability and be replicable between user-locations.
- The sustainability of key source data especially EO resources on which the services are dependent must be assured for the long term.

Focus on the Service Network

In order to operationalise the preceding conceptual framework, an effective service delivery model for INFORAC will be required that is viable internally and relevant externally to the MAP constituency. At the core of this model will be the incremental establishment of a Service Network.

The Service Network will consist of a decentralised, open and geographically distributed network of MAP stakeholders and partners e.g. RACs etc. This will be coordinated by an IC service provider (INFORAC) acting as the communication and information “hub” including various (infrastructure) components and (dissemination) mechanisms e.g. Web Portal, Regional Databases and Metadatabases etc. that allow the promotion, maintenance, enhancement and delivery of IC/information services in the most (cost) effective manner, and in response to priority policy and/or user requirements.

To this end, the proposed Service Network will redefine and integrate existing functional relationships within MAP as the nucleus for building a wider constellation of partners/beneficiaries arranged in a network that focuses on IC service delivery and optimises its positive impacts on environmental priorities across the region.

With the preceding conceptual framework in mind, the following recommendations regarding the future evolution of ERS/RAC (renamed INFORAC) are presented as significant outputs of the evalution process. Collectively, these recommendations outline a road map for the establishment of INFORAC and the fulfillment of the goals and requirement outlined in this document. The recommendations are not presented in order of priority since this will be determined during subsequent discussions leading to the formulation of an implementation plan.

However, it is important to highlight the recommendations as highly inter-dependent and there consideration and subsequent implementation must be viewed within this context. Furthermore, the list will certainly require augmentation after review by interested parties and some of the recommendations are already in progress. For the sake of clarity, they have been categorised under the following headings:

- Institutional (internal-INFORAC status)
- Organisational (INFORAC operations within MAP)
- Technical/Operational (internal and external)

- Resource Requirements (including personnel and financial)

RECOMMENDATIONS

Institutional

- **Define New Mandate and Mission Statement**

As a priority, INFORAC must concisely and precisely re-define its new mandate in the form of a mission statement. This should be circulated across the MAP constituency at the appropriate levels to gain consensus and endorsement. As a first draft, the following is proposed:

With an established Service Network and by maintaining its operational components and partnerships, INFORAC *supports the sustainable development objectives of the Mediterranean Action Plan (MAP) through the delivery of select information products and supporting (IC) services. These outputs will be accurate, reliable and timely; providing effective information on environmental conditions in the region and will be specifically designed and implemented to meet user and/or policy requirements. In addition, they will support decision-making at various administrative levels and geographic scales, and facilitate compliance with relevant protocols and conventions thereby enabling sustainable development across the Mediterranean basin.*

- **Memorandum of Understanding (MoU)**

INFORAC must be allowed to operate under an up-to-date, clear and unambiguous MoU (already in place) between itself and the host country, which endorses, guarantees and supports its mission statement and mandate over the long term. If the MoU requires additional institutional endorsement from for example, UNEP, then this should be executed forthwith.

- **Strong and Sustained Leadership**

To fulfill its mandate, INFORAC must establish (already in place) and maintain strong management/leadership that is committed to strategic planning and overseeing its overall mission and operations. In addition, management must also promote INFORAC and its services at the senior decision/policy-making levels related to MAP, including the ability to secure long term political and financial support from the host country and/or important external bodies e.g. European Commission.

- **Maintain Public Status and Orientation**

INFORAC must operate as an independent, public and internationally-oriented agency that is not tied or dependent upon any private sector or other entities, which may compromise its ability to act as an objective and demand-driven provider of IC services. However, this does not preclude the establishment of open partnerships using the appropriate mechanisms (see later).

- **Maintain Openness and Transparency**

In due course and to maintain the effectiveness, openness and transparency of its operations, INFORAC should establish an Advisory Body of core users/beneficiaries of services, host country representatives, MAP stakeholders and other partners to provide external inputs leading to continual operational and service improvements.

- **Regional Coverage**

With respect to its mandate, external promotion and operations – INFORAC must establish and maintain regional capabilities and focus on addressing (user) requirements across the Mediterranean basin. This does not preclude involvement in localised, pilot project and/or host country activities. However, the delivery of services with longer term (monitoring) and regional (MAP) impacts must be considered the priority.

Organisational

- **The Importance of Partnerships**

ERS/RAC established some collaborative arrangements and limited cooperation but mainly on a project or programme-basis. Overall, cooperation between ERS/RAC, and other RACs and MAP components has been minimal to date, leading to some negative assessments and perceptions.

In order to fulfill its new mandate and mission, INFORAC will be required to establish formal partnerships, especially at the operational and service provision levels. To this end, partnership building and “brokering” should be integrated as core functions and value-added services in INFORAC.

Within the context of MAP, a partnership approach characterised by widespread and comprehensive cross sectoral collaboration will ensure that activities and sustainable development initiatives are innovative, coherent and sufficiently integrated to address the most complex (environmental) challenges in the Mediterranean. The field proven “partnership toolbook-approach” developed by the International Business Leaders Forum (IBLF) and U.K. Overseas Development Institute (ODI) will be adapted to the partnership requirements of INFORAC. This includes the qualification of an INFORAC staff member as a “certfied” partnership facilitator/broker capable of supporting partnership initiatives across the MAP region.

In summary, INFORAC should aim to deliver IC services and establish concurrent partnerships which combined, offer the best prospects for longer term (monitoring) activities and lasting impacts at the user (bottom up) and policy (top down) levels. Furthermore, partnerships with significant external actors such as the UN IC Task Force, GMES Programme – where it impacts the thematic or geographic area of the Mediterranean, the EU’s INSPIRE Project, Environmental NGOs etc. will be consolidated wherever they add value to INFORAC and its activities for MAP.

- **Strategic External Collaboration**

Within the IC sector, while the technologies advance rapidly and may be viewed or marketed as “new,” their application to problems such as environmental monitoring progress at a more considered pace. Furthermore, as INFORAC undertakes its expanded mandate, it must do so with the recognition that many useful and relevant IC applications already exist having been developed at considerable cost and effort. The challenge therefore, will be to locate and secure these existing applications in order to avoid costly issues such as duplication and redundancy. This is not a simple task. However, it is clear that MAP maintains a substantial

network of collaborating institutions and organisations many of which have developed substantive internal IC capacity focused on environmental issues. One obvious example is UNEP and its GRID (Global Resource Information Database), which has invested significant resources into various IC-tools and applications for environmental monitoring. Another example is the EU's GMES programme which, although Euro-centric in focus, has developed numerous (marine and terrestrial) monitoring applications of potential use to INFORAC and MAP. Consequently, it will be vitally important to identify such resources and rapidly establish strategic collaboration agreements that facilitate the free exchange of applications, tools, capabilities etc., which could address user-requirements in the Mediterranean basin. While such arrangements may be best facilitated at the highest decision-making levels of MAP/MEDU, they must be practical and operational in order to add value to INFORAC activities and MAP as a whole.

- **Re-Orientation of the Internal Organisation of INFORAC**

In order to effectively function as a responsive IC service provider for MAP and its components/clients, INFORAC should undertake an internal organisational assessment and restructuring. This will involve the re-allocation of technical resources and staff and in particular, the establishment and documentation of procedures to facilitate service delivery. The procedures should address but are not limited to the following issues:

- Routine working practices and responsibilities
- Definition and maintenance of available products/services
- Inquiry/request management and user access to INFORAC resources and services
- Quality control and standards
- Service delivery mechanisms and validation
- Service impact assessment and (user) evaluation
- Periodic services review, maintenance and updates

Technical and Operational

In its newly established role as a MAP (IC) service provider and "hub" for an expanding, pan-Mediterranean Service Network, INFORAC should consider the following technical and operational options to support its mission:

- **Establish an Internal Data Warehousing Capacity**

The early design and implementation of a INFORAC Data Warehouse using COTS (Commercial Off-The-Shelf) data management tools would allow INFORAC to:

- Effectively organise, manage and share its existing information and data archives
- Provide a common and standardised repository for databases and data sets developed by other RACs and MAP components
- Create a logical and searchable Data Warehouse environment with data dICionary and metadata available on-line (via the Web Portal)
- Allow the more effective integration and management of spatial (digital maps, images etc.) and non-spatial (attribute) data sets
- Improve data access, reduce duplication and diminish redundancy by regular updates and maintenance procedures, which are integral to such an architecture

- Over time, utilise the Data Warehouse to design and test the feasibility of a Central UNEP/MAP Regional Database offering decentralised (networked) user access across the Service Network
- Utilise the data warehouse architecture to test various analytical and monitoring applications (for example, the collation of field data in near real time etc.) as the basis for enhanced IC services to the MAP community.

- **Establish an INFORAC Shared Web Portal**

The potential contributions of an Integrated Web Portal to INFORAC and its mission are significant and multi-dimensional including:

- Providing a primary point of user access to the Service Network and information on services provided by INFORAC.
- Supporting a public domain website for promotion of INFORAC, MAP activities and public access to related multi-media materials.
- Maintaining on-line archives, data dICionaries and metadatabases including a searchable data warehouse collated by INFORAC from across the MAP constituency.
- Posting and exchange of technical standards, procedures, validation criteria etc. allowing broad user access.
- Allowing access to map libraries via Internet Map Server (IMS) tools – since spatial data products such as imagery and digital maps will be core products of INFORAC.
- Exchange of reports, best practices, service-case histories, bulletins, project results and other technical outputs through an on-line Clearinghouse function to help reduce duplication and redundancy between RACs and across the MAP community.
- Dedicated linkage and communication (email, on-line user fora etc.) to promote easy and continual information exchanges between key partners and stakeholders in MAP.
- Linkages to external organisations for the sharing of information resources.
- Dedicated linkages to other Web sites or programme portals such as INSPIRE, GMES etc. with the regular sharing of universally relevant information.
- Digital on-line publishing of regional data sets, newsletters, bulletins, environmental alerts, policy statements etc. to facilitate the proactive dissemination of key information to an INFORAC “subscriber” community.

- **Evaluate and Consolidate Existing Environmental Remote Sensing (ERS) Capabilities**

With a substantial pedigree and track record of delivering environmental remote sensing in the Mediterranean basin, INFORAC should carefully examine and evaluate this capability to identify the core strengths (thematic, technical, analytical etc.) and assess how best they can be integrated and promoted within the expanded IC services mandate. This is especially important since the merging and combination of EO (Earth Observation), in-situ (ground) and other complimentary data sets has the potential to meet numerous environmental monitoring and information requirements at various user levels and geographic scales.

Resource Requirements

- **Financial**

Clearly, the expanded IC mandate of INFORAC will require substantial and sustained financial support not only for its initial establishment but also to ensure its operational effectiveness and periodic upgrades (in line with user-demands and the available, most cost effective technologies). Budgetary restrICions or uncertainties must be removed. A sustainable level of core financing must be guaranteed by the host country and Mediterranean Trust Fund (MTF). In addition, INFORAC management must commit to a concerted campagn of fund-raising for the financing and co-financing of specific projects and initiatives either by the user/clients or external parties and donors. Clearly, the services to be offered by INFORAC will have broad appeal and relevance to environmental challenges in the Mediterranean region. Consequently, diverse and creative financing options should be aggressively pursued to support the INFORAC mandate.

- **Personnel**

The quality and performance of INFORAC will be directly related to the skills, dedication and performance of its small but committed staff. As the mandate expands from “environmental remote sensing” to embrace a broader range of IC capabilities, multi-tasking and staff skills development (training) should be implemented. Furthermore, the out-sourcing of highly specific tasks e.g. Web Portal design, should be applied wherever appropriate, as well as the implementation of internships, work-study programmes in collaboration with local and regional educational institutions. The retention and strengthening of the most skilled personnel should be a priority – including the active encouragement of individual initiative and innovation in helping INFORAC meet its objectives. As partnerships are established with environmental bodies and agencies across the Mediterranean, the potential for longer term staff/vocational exchanges should be investigated since this is an ideal mechanism for knowledge-transfer and cross-cultural exchanges.

NEXT STEPS

The preceding recommendations for the establishment and reform of ERS/RAC will require varying levels of resources, time and effort for full implementation. Indeed, many of the recommendations will require on-going processes since they address the challenges posed not only by institutional reforms, but also the maintenance of sustainable services and operational capabilities.

However in the near term, the following “next steps” can be identified and implemented to rapidly initiative progress towards the goals outlined in this document:

1. Circulate the Evaluation Report to interested parties in MAP to seek comments and most importantly, obtain an endorsement (from potential users/beneficiaries of INFORAC) for the reforms and recommendations outlined.

2. Discuss the report's findings and recommendations in a number of relevant forums especially within MAP including other RACs, MEDU and Contracting Parties to obtain feedback and support.

3. Urgently redefine, draft and circulate a new mandate and mission statement for INFORAC and seek the widest endorsement (from within and outside MAP) including the required formal approvals from the host country (Ministry), UNEP etc.

4. Immediately undertake a formal and comprehensive user needs assessment to determine what the potential clients/users of INFORAC specifically require in terms of IC support and services.

5. Using the results of the user needs assessment establish convergence with the existing ERS/RAC Project Document-Plan (2004-2005) and identify priority targets of opportunity for intervention and support. These activities may be relatively small and/or project-oriented, but must have measurable and high profile impacts both at the technical and decision/policy making levels. Ideally, such interventions should combine technical components together with the building of meaningful cross-sectoral partnerships.

6. Plan and execute the priority project(s) through technical service/support delivery, also integrating the measurement and evaluation of the impacts/benefits and policy implications for both the end-user(s) and MAP.

7. Utilise the outputs of the project(s) including quantifiable and validated impact assessments to further the reforms and development of INFORAC including the strengthening of its services, internal resources and external partnerships.

8. Through the preceding steps, progressively consolidate high profile beneficiaries and users of INFORAC services as not only satisfied 'clients' of the Centre, but also its vested stakeholders. Progressively, these core users should be drawn to include the entire MAP region and its representative countries.

9. Strengthen and support core users through further activities to incrementally create an (IC) Service Network for MAP where the core users and other high profile beneficiaries take a lead role in its promotion and further expansion.

CONCLUDING REMARKS

The future and sustainable development of the Mediterranean basin continues to remain a priority concern for many nations, and not only those which share a coastline or have immediate access to its diverse resources. From an environmental, socio-economic, geopolitical, security and cross cultural standpoint, the stability and progress of the entire region has truly global implications. Finding unity of purpose across a diverse and complex geographic region will be essential if challenges such as integrated environmental management are to be successfully addressed.

Within this context and for many decades MAP has played a crucial role. It has sought to create a unifying platform and forum for environmental issues, complemented by conventions and protocols that strive to meet the environmental and development concerns of stakeholders (countries) around the basin. The challenges have been most difficult and complex but tangible progress has been made. However, the requirements of the Mediterranean region have changed dramatically over the years driven by forces that include population and economic growth, globalization, increasing economic and social disparities, changing citizen expectations and the growing awareness and importance of sustainable development.

In this situation, a comprehensive re-appraisal and evaluation of MAP is timely and important. The same logic applies to its many functional components including ERS/RAC. In this document, ERS/RAC has attempted to identify what has/has not worked in the past and most importantly, how the Centre can reform to better contribute to the vital goals of MAP in future.

The proposed re-orientation of ERS/RAC to INFORAC; the focus on service provision at a regional scale through the implementation of the most appropriate and sustainable IC capabilities is not motivated by change for the sake of change-but rather (user) demands that exist amongst the wider MAP constituency. To this end, INFORAC is committed to playing a pragmatic, responsiveness and supporting role in helping various clients meet their IC requirements. This in turn, should strengthen their ability to make tangible contributions to the paramount goals of effective environmental monitoring and management, thereby enabling sustainable development across the Mediterranean basin.

Over time and with the required support from key partners and stakeholders, INFORAC will help create a coordinated (MAP) Service Network capable of applying IC-based products and services for environmental monitoring. Furthermore, a requisite (technical) capacity or ‘critical mass’ for ongoing maintenance and mutual (user) support should evolve across the network to include the public and private sectors, non-governmental organisations and citizen interests. As the services offered by INFORAC become more widely applied across the MAP user community, they should be further customized, enhanced and locally promoted and applied by the users themselves. Common to many IC-based services or innovations, it is anticipated this process will happen only gradually, driven by the example of successful “service-cases” and the demands of users.

In addition, various policy and institutional structures with vested interests in environmental monitoring and the objectives of MAP should exert a significant influence on the uptake of various IC capacities.

Consequently, the ultimate goal of a truly regional and sustainable environmental monitoring system should be attained and INFORAC stands ready to contribute to this objective. Clearly, this will be a most challenging endeavour and highly dependent upon a number of contingencies (technical, financial, organizational, policy-legislative etc.) including and not least, securing the political will and commitments across the Mediterranean to make it a reality.

ATTACHMENTS

Available on Request from Director, ERS/RAC:

- Evaluation Questionnaire and Summary Results
- ERS/RAC Financial Summary
- 2004-2005 Biennium Project Document
- Select remarks and comments from reviews of earlier draft – solicited and unsolicited feedback on future of ERS/RAC (INFORAC)
- Original consultants TOR for evaluation process