

Mediterranean network to
Assess and upgrade the
Monitoring and forecasting
Activity in the region

MAMA
The First MedGOOS Project

Role of APAT in MAMA and expected utilization of MAMA results

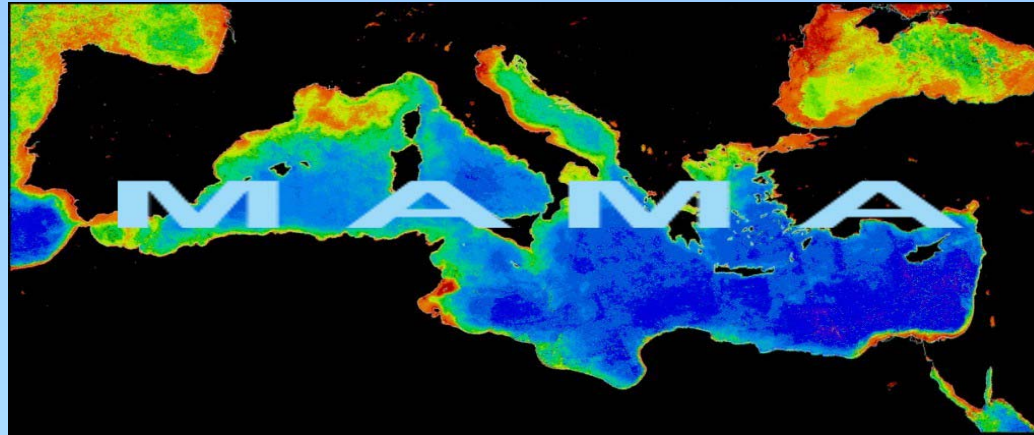
Gianna Casazza



APAT

Agenzia per la Protezione dell'Ambiente e per i Servizi Tecnici

4th MAMA meeting – Rome, June 3-6, 2003



Annex I : Description of Work

APAT: Expertise and main project involvement

Environmental protection, coastal zone management, socio-economical impact of environmental protection, co-operation with international organisations and MPC.

- END-USER:

access and main end-user to net-MedGOOS; node for end-users in WWW; surveys and testing on CEROSPIG (WP8); access, testing and local dissemination of products (WP8); visits organisation; links with EEA

- EU policy

Environment policy: the participation to MAMA of ANPA (now APAT) ensures adherence to European Environmental policy

.....facilitate help in dissemination towards international user groups.

APAT work for the marine environment in relation to MAMA activities

APAT is responsible for data collection and validation for the **National Environmental Information System (SINA)**, including marine and coastal environment data.

APAT provides scientific, technical and institutional support to the **Ministry of the Environment, D.G. Sea Protection, for national coastal monitoring and control**, working in close **cooperation with the Central Institute for Marine Research (ICRAM)**, too.

APAT acts as the **National Focal Point** and **National Reference Center** of the **European Environment Agency (EEA)**, in the framework of **EIONET**, for all the different environmental themes, including the marine and coastal environment.

APAT, is supporting the **Ministry of Environment, Water Director** in the working process related to the **implementation of the new European Water Directive (Directive 60/EC/2000)**, in the framework of the **Common Implementation Strategy (CIS)**, organized by the **European Commission**.

National Coastal Monitoring

National monitoring programs for the quality of coastal waters (established since the 90's) are run by Regional authorities, by a formal agreement with the Ministry of Environment, D.G. Sea Protection.

Resulting **data on chemical and physical parameters** (temperature, salinity, O₂, nutrients, pollutants accumulation in biota) are collected in the **SI.DI.MAR. database**, at the Ministry of Environment, directly connected with APAT.

New monitoring programs were started in 2001, according to recent water legislations, requiring **analysis on different component of the marine environment** (water, sediment and biota) to classify the environmental status of coastal waters.

APAT, together with ICRAM, supported D.G. Sea Protection of the Ministry of Environment, to:

- prepare and diffuse, **guidelines for monitoring**,
- support **training to regional Agencies**, when needed,
- elaborate **data** for **transmission to National and International Authorities and Institutions** (i.g. EEA)

NATIONAL COASTAL WATERS MONITORING PROGRAM
MONITORING STATIONS (period 1996-2000)

Water and biota analysis

Number of stations: 2325



NEW NATIONAL COASTAL WATERS MONITORING PROGRAM
MONITORING STATIONS (period 2001-2003)


Water, sediment and
biota analysis

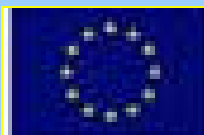
Number of stations: 527



NEW COASTAL ENVIRONMENT MONITORING PROGRAM (MINISTRY OF ENVIRONMENT) FROM 2001

PARAMETERS TO MEASURE IN DIFFERENT MATRIXES

Water (fortnightly)	Sediment (twice/year)	Biota
<ul style="list-style-type: none"> ◆ Temperature ◆ pH ◆ Salinity ◆ Dissolved O₂ ◆ Chlorophyll <i>a</i> ◆ Total N ◆ N-NH₄ ◆ N-NO₂ ◆ N-NO₃ ◆ Total P ◆ P-PO₄ ◆ Silicates ◆ Transparency 	<ul style="list-style-type: none"> ◆ Grain size classes ◆ PCB and pesticides ◆ Heavy metals ◆ PAH ◆ TBT ◆ TOC ◆ Short and long term biological essay ◆ Microbiological analysis 	<p style="text-align: center;"><i>In Mytilus galloprovincialis</i> (twice/year)</p> <ul style="list-style-type: none"> ◆ Heavy metals ◆ PAH ◆ PCB and pesticides ◆ TBT
<p style="text-align: center;">Phytoplankton analysis</p> <ul style="list-style-type: none"> ◆ 1st year: total density; density of Diatoms, Dinoflagellates and other phytoplankton species ◆ 2nd year: detailed species list 		<p style="text-align: center;">Biocenosis (yearly)</p> <p style="text-align: center;"><i>In Posidonia oceanica</i></p> <ul style="list-style-type: none"> ◆ Shoot density ◆ Lepidochronology ◆ Phenology ◆ Lower meadow limit
<p style="text-align: center;">Zooplankton analysis</p> <ul style="list-style-type: none"> ◆ 1st year: density of Copepoda and Cladocera ◆ 2nd year: detailed species list 		<p style="text-align: center;">In SFBC (well sorted fine sand)</p> <ul style="list-style-type: none"> ◆ Species list or biocenosis indicator species ◆ Indicator species biometrics



EUROPEAN POLICY

APAT, participating in the **EIONET** of the **European Environmental Agency**, provides national coastal waters data to the **EUROWATERNET** data bank.



APAT has been charged, by the Water Director, Ministry of Environment, to follow the development of the new European Water Directive, **Directive 60/EC/2000**, participating into the **Common Implementation Strategy (CIS)**, organized by the **European Commission**.





The European Environment Agency

The European Environment Agency is the main source of information used by the European Union and its Member States in developing environment policies.

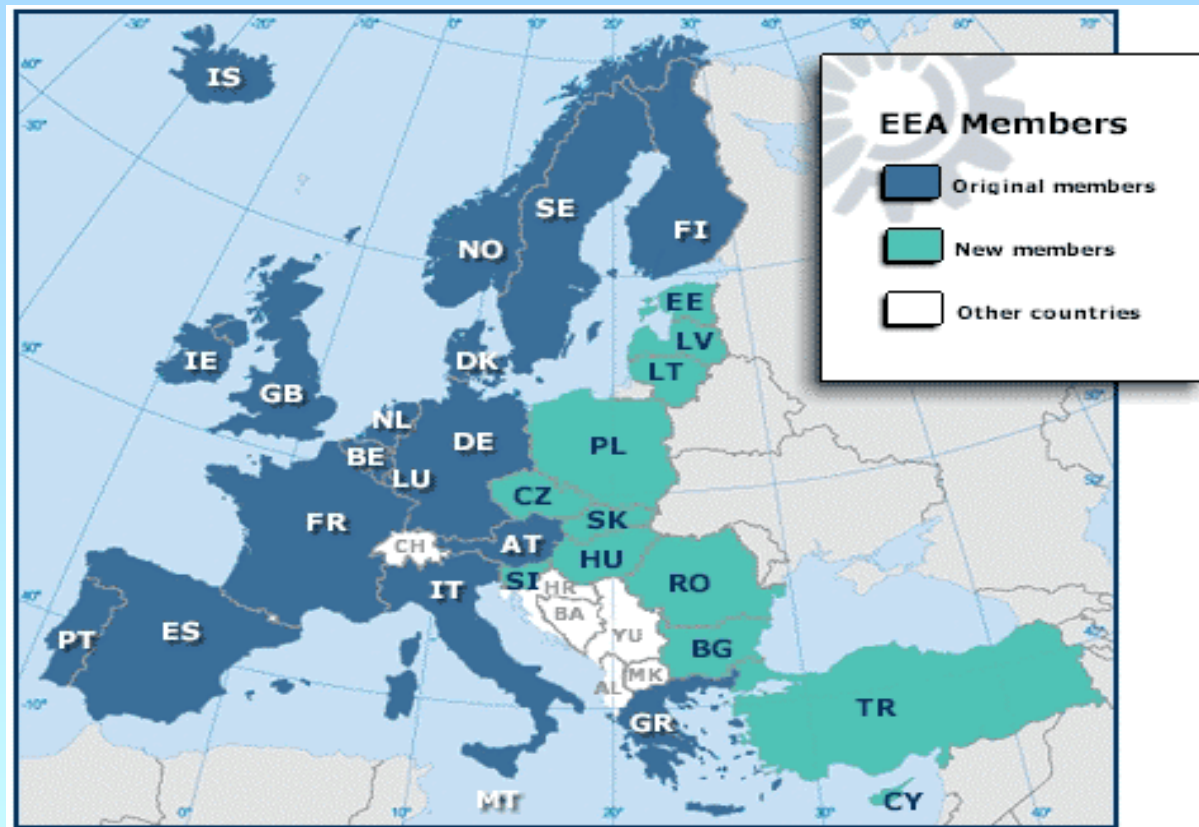
The Agency aims to support sustainable development and to help achieve significant and measurable improvement in Europe's environment through the provision of timely, targeted, relevant and reliable information to policy-making agents and the public.

Established by the EU in 1990 and operational in Copenhagen since 1994, the EEA is the hub of the European environment information and observation network (Eionet), a network of around 300 bodies across Europe through which it both collects and disseminates environment-related data and information.

Networking partners:

- **EIONET** partners in 31 member countries (NFPs, NRCs)
- Coordinated activities within EC services and programmes
- International organisations (UNEP, UNECE, WHO, OECD and WMO)

EEA member and participating countries

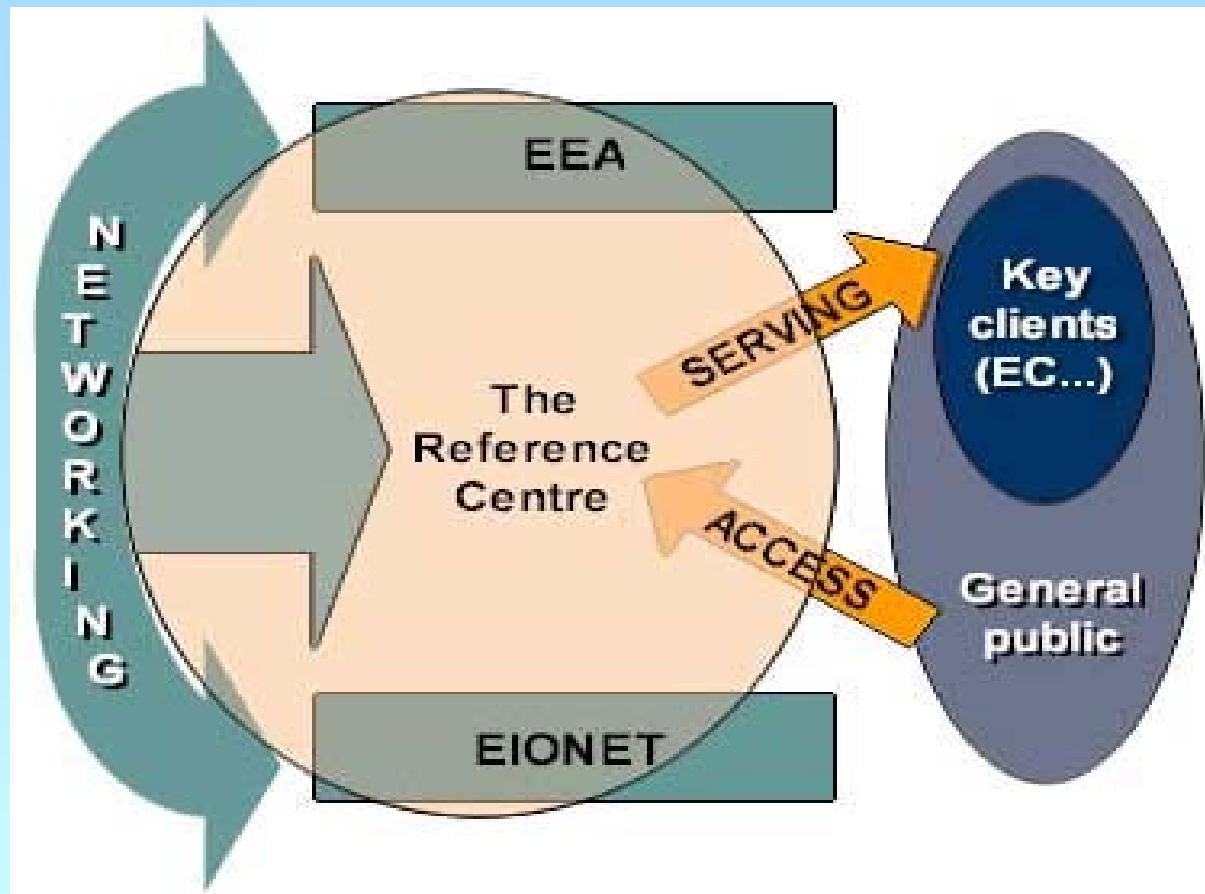


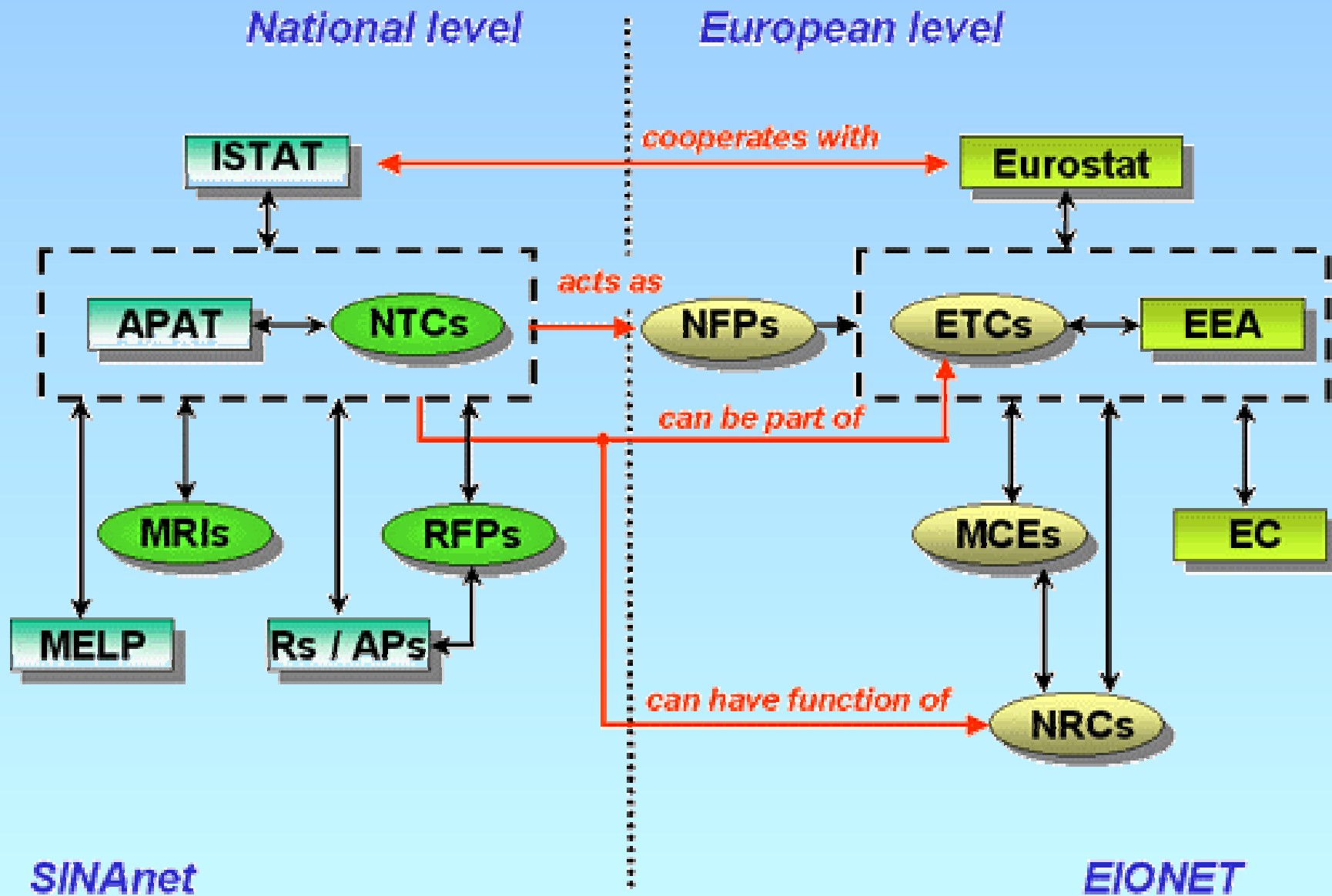
4th MAMA meeting – Rome, June 3-6, 2003

EIONET

EIONET is more than 300 national institutions:

- National Focal Points
 - European Topic Center
 - National Reference Center
- Main component elements





EEA Reports

Data collected through the EIONET network are used by EEA to produce reports for environmental assessing as well as technical reports for specific topics and/or ecoregions, e.g.:

Technical reports: Marine base database, Eutrophication in Europe's coastal waters

Data for the Mediterranean ecoregion are often lacking:

- only 4 Mediterranean countries, belonging to the EC, participate, up to now, to the EIONET network
- moreover problems of agreements and communication between the Marine Conventions/countries and the EEA/countries delayed data flows into the net

APAT participation to the EIONET network, providing yearly data of the national monitoring programmes for coastal waters to EEA, enabled the Agency to include maps and evaluations on some issues in the Mediterranean region.

Europe's environment: the third assessment

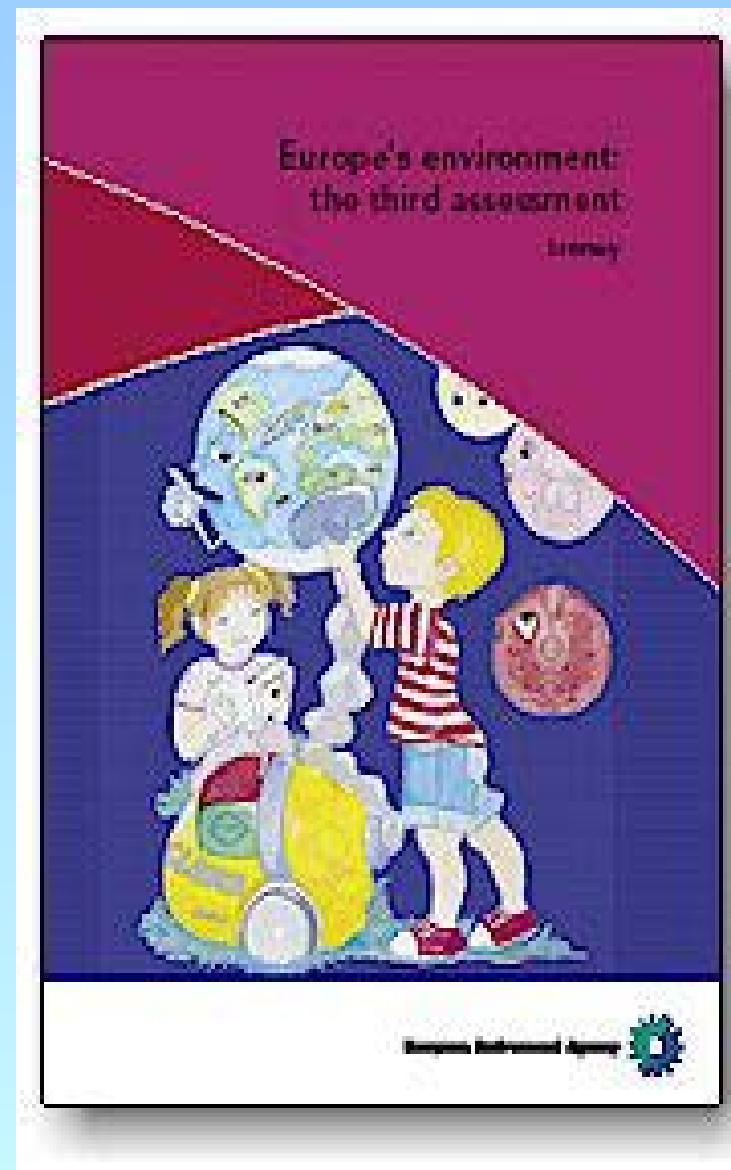
Environmental assessment report No 10

Europe's environmental progress at risk from unsustainable economic activities

European Environment Agency's latest assessment of the environment in Europe, published in May 2003,

prepared for the 'Environment for Europe' ministerial conference taking place in Kiev, Ukraine, on 21-23 May under the auspices of the United Nations Economic Commission for Europe (UNECE).

The new report covers a total of 52 countries, including for the first time the whole of the Russian Federation and the 11 other Eastern European, Caucasus and Central Asian (EECCA) states.

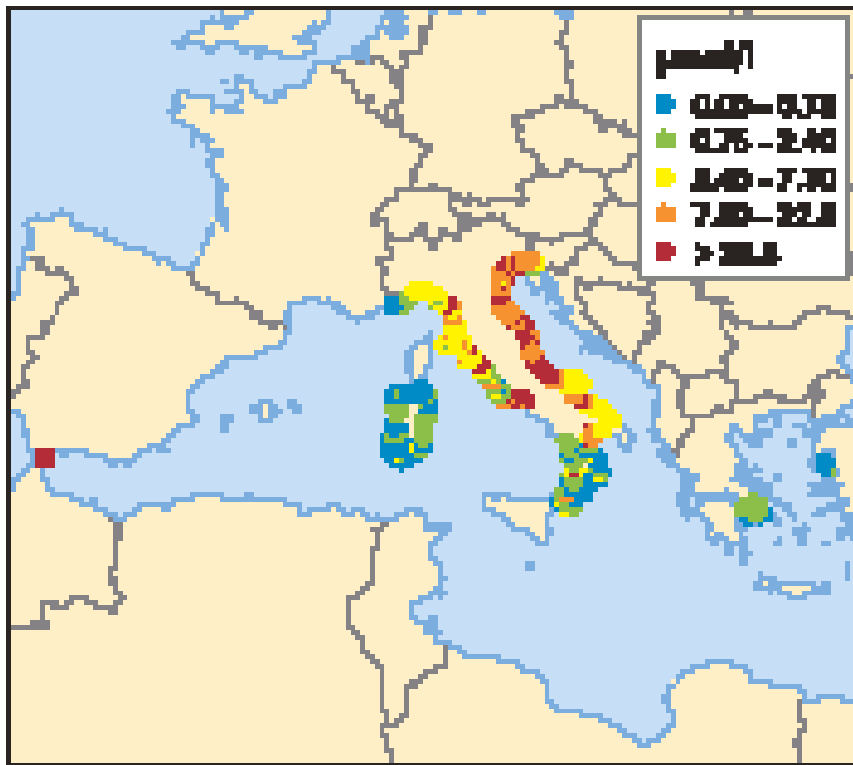


4th MAMA meeting – Rome, June 3-6, 2003

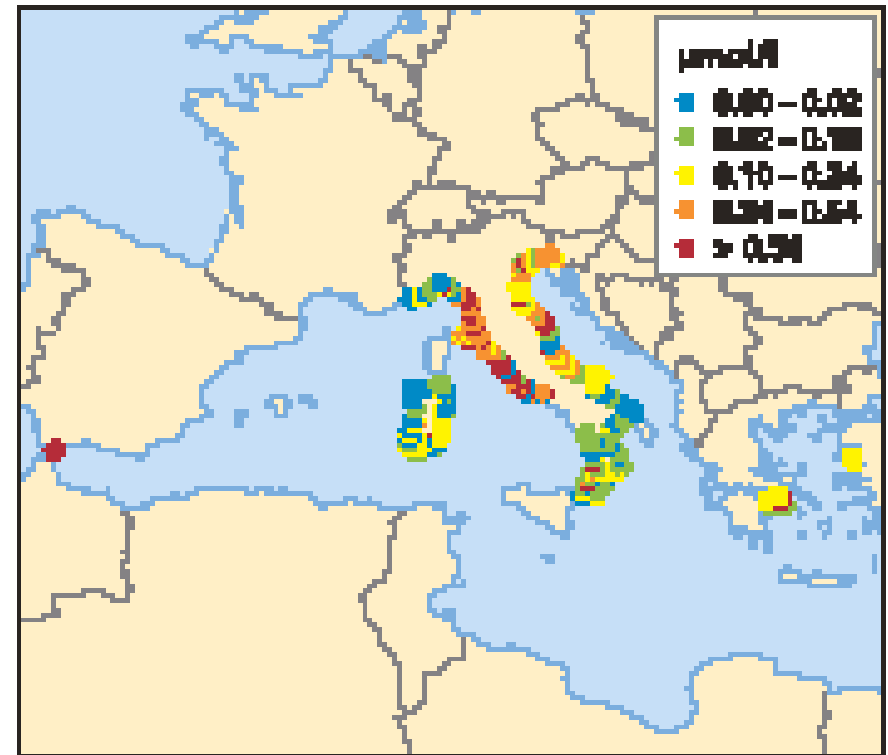
Chapter 8: WATER

Quality of Coastal Waters

Mean nutrients concentrations (1995-2000)



Nitrates



Phosphates

The European Water Framework Directive and the Common Implementation Strategy (CIS)



Directive 2000/60/EC represents an innovative concept in the European water policy; **technical, scientific and managing** expertises are required for a correct and **uniform application of the legislation in all the different countries of the EC**.

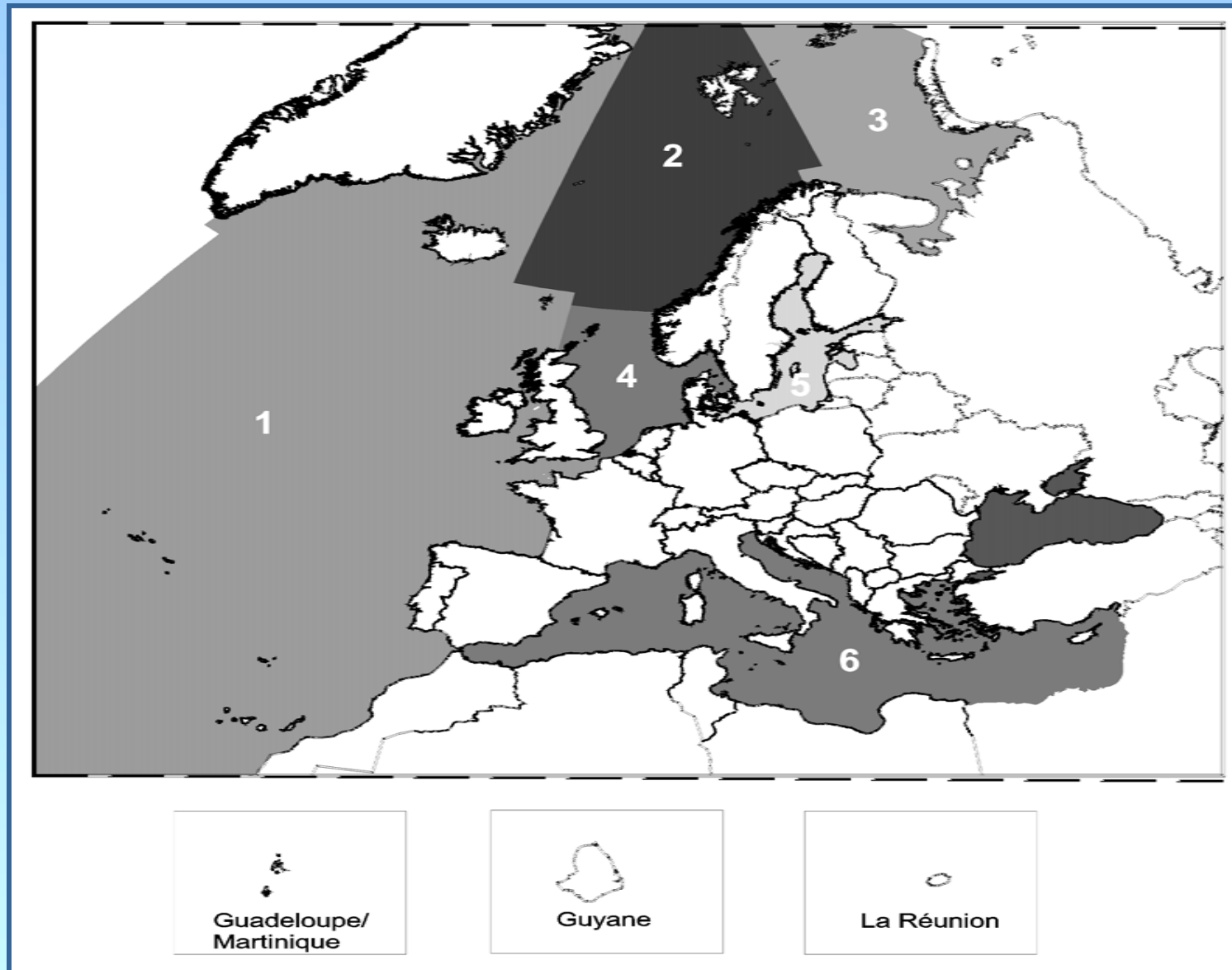
The EC decided to develop a common strategy for supporting the implementation of the Directive: the **Common Implementation Strategy (CIS)** with the aim to allow a coherent and harmonious development of the Directive application.

Focus is on methodological questions related to a **common understanding of the technical and scientific implications of the WFD**.

In the context of the CIS a series of **working groups (WGs)** and joint activities have been launched to **develop and test “non-legally” binding guidance**.

Experts, nominated **by the different countries**, actively participated in the WG activities.

European Ecoregion subdivision for COASTAL WATERS, in the WFD



The COAST Working Group

Specifically created to deal with the **issues related to transitional and coastal waters**; in particular to produce a Guidance on the first main themes for a correct application of the Directive:

- **Tipology**
- **Reference Conditions**
- **Classification systems**

APAT participated into the COAST WG, collaborating **into the WG Steering Group**, too. **Active participation** and inputs were required especially at the ecoregion level, **particularly for the Mediterranean ecoregion**, for an adequate implementation of the Directive.

At the end of 2002 the WG produced the document

“Guidance on Typology, Reference Conditions and Classification Systems for Transitional and Coastal Waters” which is available, to the public at the following web address : **<http://forum.europa.eu.int/Public/irc/env/wfd/library>**.

The Guidance was approved by the Water Directors Committee and is at the moment circulating in the different countries of the EU for testing.

Important considerations from the WFD and the COAST work

Coastal area definition and monitoring requirements:

- 1 nautical mile for ecological status
- 12 miles for chemical status (territorial waters)

Data required for the classification of the ecological status of coastal waters:

-importance of biological data
(composition and abundance of phytoplankton, phytobenthos and benthic invertebrate fauna)

Correct application of the Directive to the specific ecoregion.

For the Mediterranean ecoregion:
different importance and hierarchy assigned to the various parameters required by the Directive for the classification of the water quality status.

CONCLUSIONS

Some of the specific objective of MAMA:

- **broadening and strengthening the existing network** of national institutions already established
- **identify gaps in the marine monitoring systems** in the region and in the capability to measure, model and forecast the ecosystem
- **comparing experience and standardising practices** towards the coordinated **upgrading of capabilities in all the Mediterranean countries**
- **integrating the knowledge base derived from relevant national and European projects**
- **bringing together research institutions, operational agencies, policy-makers, inter-governmental organizations to harmonise strategies.....**

CONCLUSIONS

APAT contribution to MAMA activities is not limited to be an end-user partner.

Data and information exchange have been already activated into the MAMA net.

- **National integrated view of institutional coastal monitoring**: data, methods, stations, personnel training, needs for legislation requirements, gaps.....
- Effective collaboration with national research Institutions.

European level: constant update of the new legislations requirements, **comparison with the national and Mediterranean situation** to identify problems and needs.

Collaboration with European institutions for information and data exchange

Finally, acting **as an end-user**, APAT will be able to **insert and integrate MAMA products into the National and International (European and Mediterranean) net**, where the Agency is already actively participating.

Need of strengthen the co-operation of all the Mediterranean countries towards a working system compatible with other ecoregional systems.