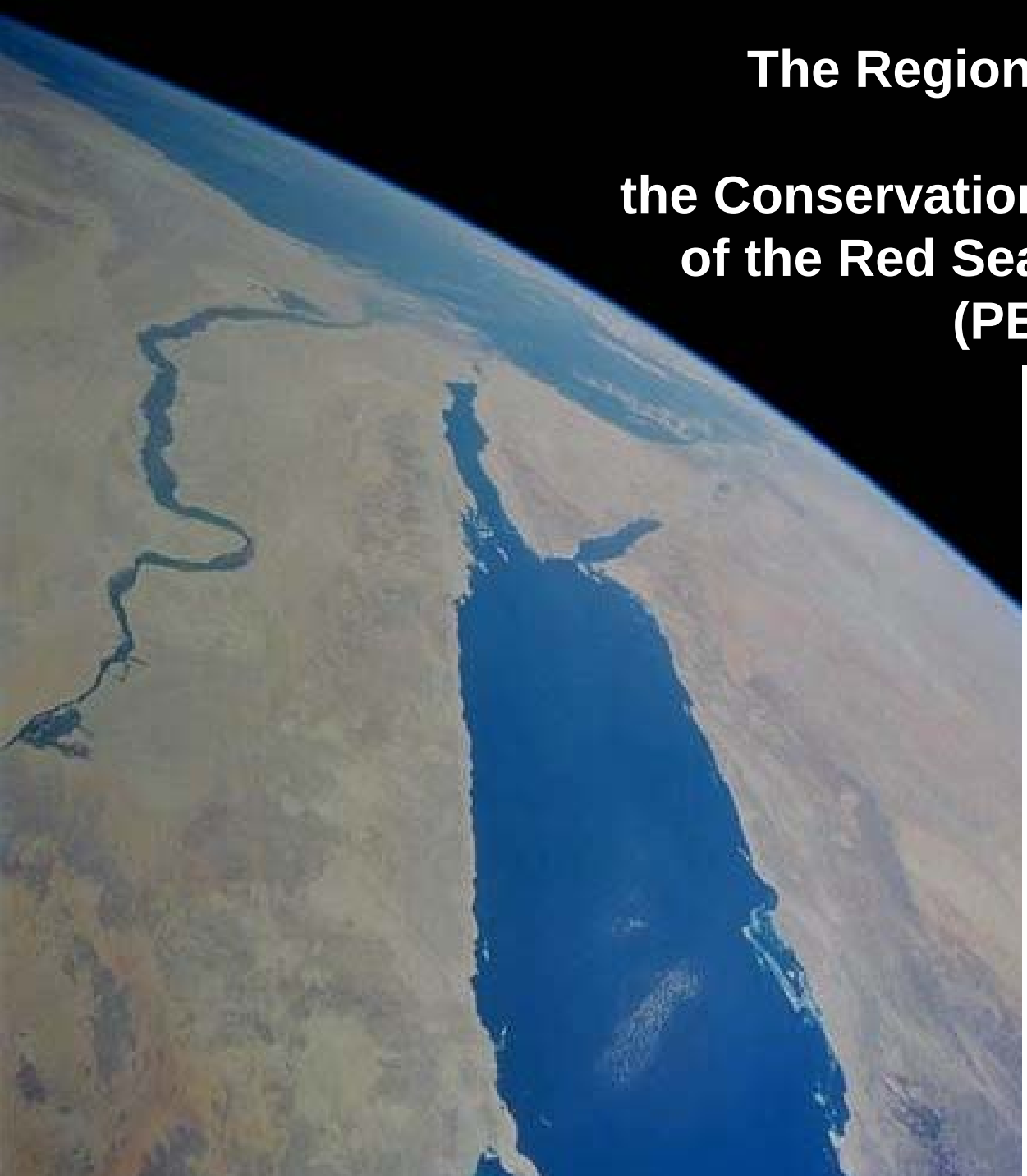
Regional Meeting on Experiences & Best Practices in Environmental Information Development and Management
in West Asia, 9 – 10 January 2005

Abu Dhabi - UAE

PERSGA Report

Regional Study Abu Dhabi Global Environmental Data Initiative

The Regional Organisation for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA)



DJIBOUTI

EGYPT

JORDAN

Saudi Arabia

SOMALIA

SUDAN

YEMEN

Member Countries

- **Djibouti**
- **Egypt**
- **Jordan**
- **Saudi Arabia**
- **Sudan**
- **Somalia**
- **Yemen**

- The Jeddah Convention of 1982, formally titled "Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment," provides an important basis for environmental cooperation in the Region. It was the result of a Regional Intergovernmental Conference, supported by the United Nations Environment Programme.

Introduction to PERSGA

- The Regional Intergovernmental Conference also adopted a "Programme for the Environment of the Red Sea and Gulf of Aden (PERSGA)," and established a Secretariat for the Programme in Jeddah. In addition, the Conference produced two important instruments:

- (a) an "Action Plan for the Conservation of the Marine Environment and Coastal Areas in the Red Sea and Gulf of Aden"; and

- (b) a "Protocol Concerning Regional Cooperation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency.

- **Strategic Action Programme:**

- **In view of the environmental uniqueness of the coasts and waters of the Red Sea and Gulf of Aden, the threats they are facing, and the necessity for actions, the preparation of the Strategic Action Programme (SAP) for the Red Sea and Gulf of Aden was initiated in October 1995.**

- **The SAP supports and facilitates the primary goal of PERSGA which is the conservation of the environment of the red sea and the Gulf of Aden.**

PERSGA The Regional Organization

Strategic Action Programme: aims

- **The aims of the SAP are to develop a framework for the protection of the environment and sustainable development of coastal and marine resources.**

- **The SAP also aims to reduce the risk of maritime accidents and hence minimize pollution in the region.**

Status of environmental data and information

Component 1. Institutional Strengthening to Facilitate Regional Co-operation

Component 2. Reduction of Navigation Risks and Maritime Pollution

Component 3. Sustainable Use and Management of Living Marine Resources

Component 4. Habitat and Biodiversity Conservation

Component 5. Development of a Regional Network of Marine Protected Areas

Component 6. Support for Integrated Coastal Zone Management

Component 7. Public Awareness and Participation

Component 8. Monitoring and Evaluation of Programme Impacts

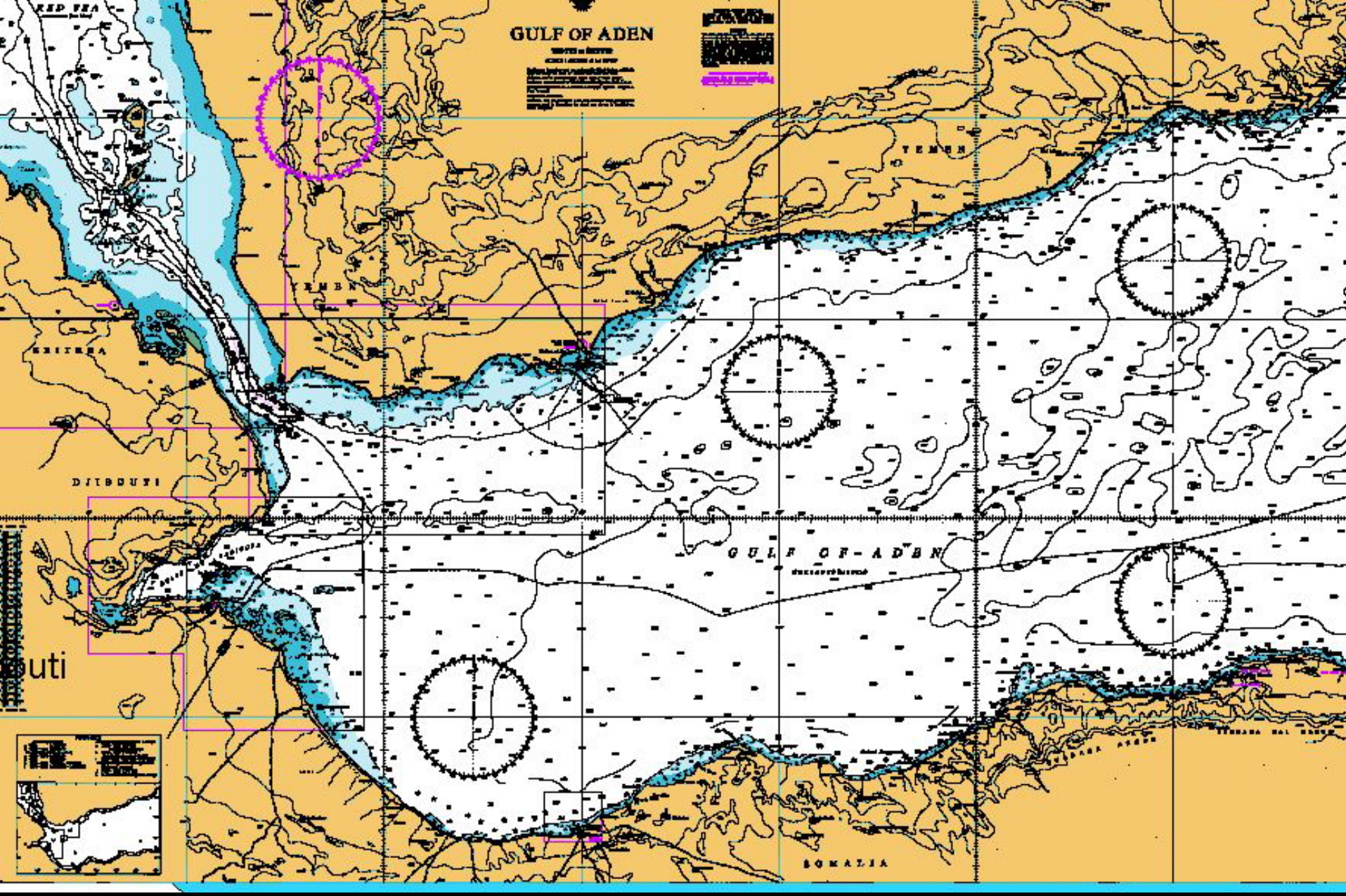
Reduction of Navigation Risks and Maritime Pollution

- International Conventions
- Port State Control of Shipping
- Hydrographic Surveys and Navigation Aids
- Traffic Routing Measures
- Vessel Traffic Systems
- Contingency Plans
- Pollution Response Centres
- Port Rules/GMDSS
- Marine Accidents and Incidents
- Oil spill
- Harbours
- Anchorages
- Navigational hazards
- Coastal navigation,

Reduction of Navigation Risks and Maritime Pollution

- ***Development and registration of Admiralty Charts to cover all the Red Sea and Gulf of Aden Region***

- ***Standard Navigational Charts (SNCs) are continually updated and are fully corrected up to date to ensure that they include all safety-critical navigational information.***


GULF OF ADEN
YEMEN
ERITREA
DJIBOUTI
GULF OF ADEN
SOMALIA

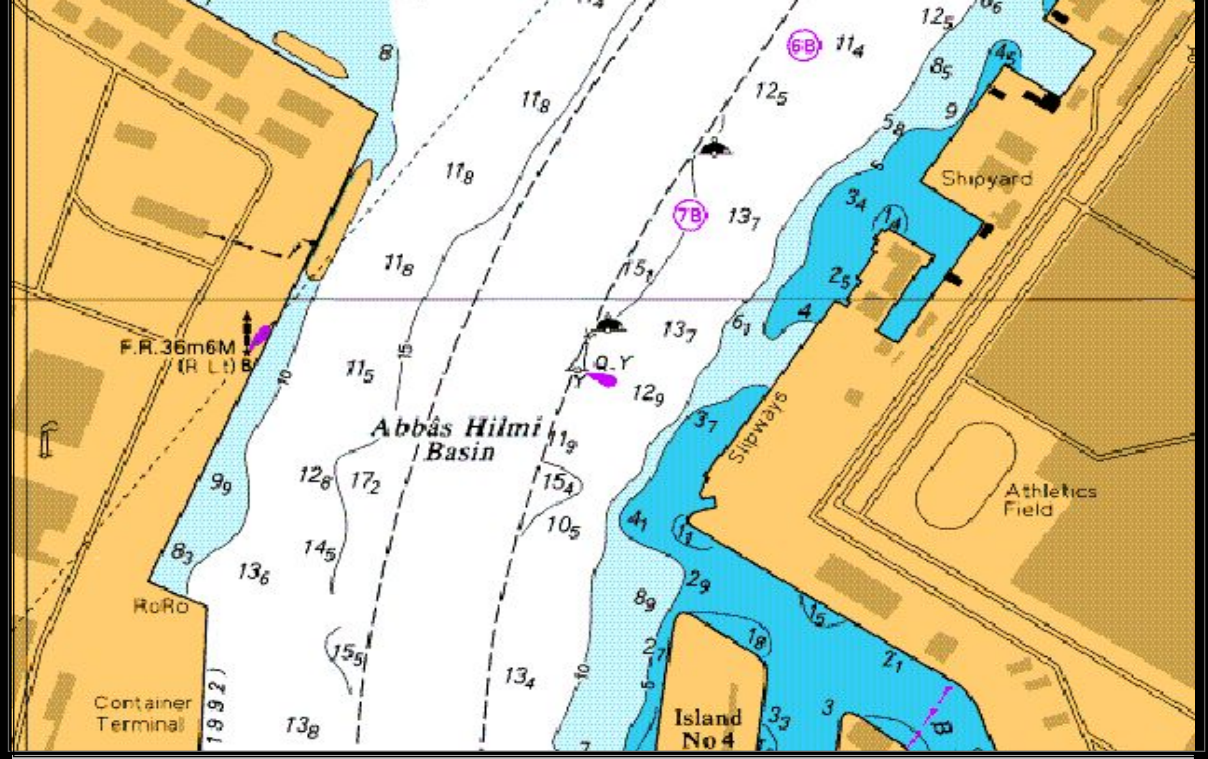


Chart Name :	A Bur Said
Scale :	1:12500
Projection :	Transverse Mercator
Depth Units :	Metres
Height Units :	Metres

PERSGA DATA SETS
Level : Hot Spot
Port Said Harbor

Information for the Base Chart

Base Chart Number :	234
Base Chart Name :	Approaches to Bur Said
Country of origin :	United Kingdom
Issue date :	12 04 2001
Latest NM :	2000 3988

ive

Chart Name :	Red Sea
Scale :	1:2250000
Projection :	Mercator
Depth Units :	Metres
Height Units :	Metres

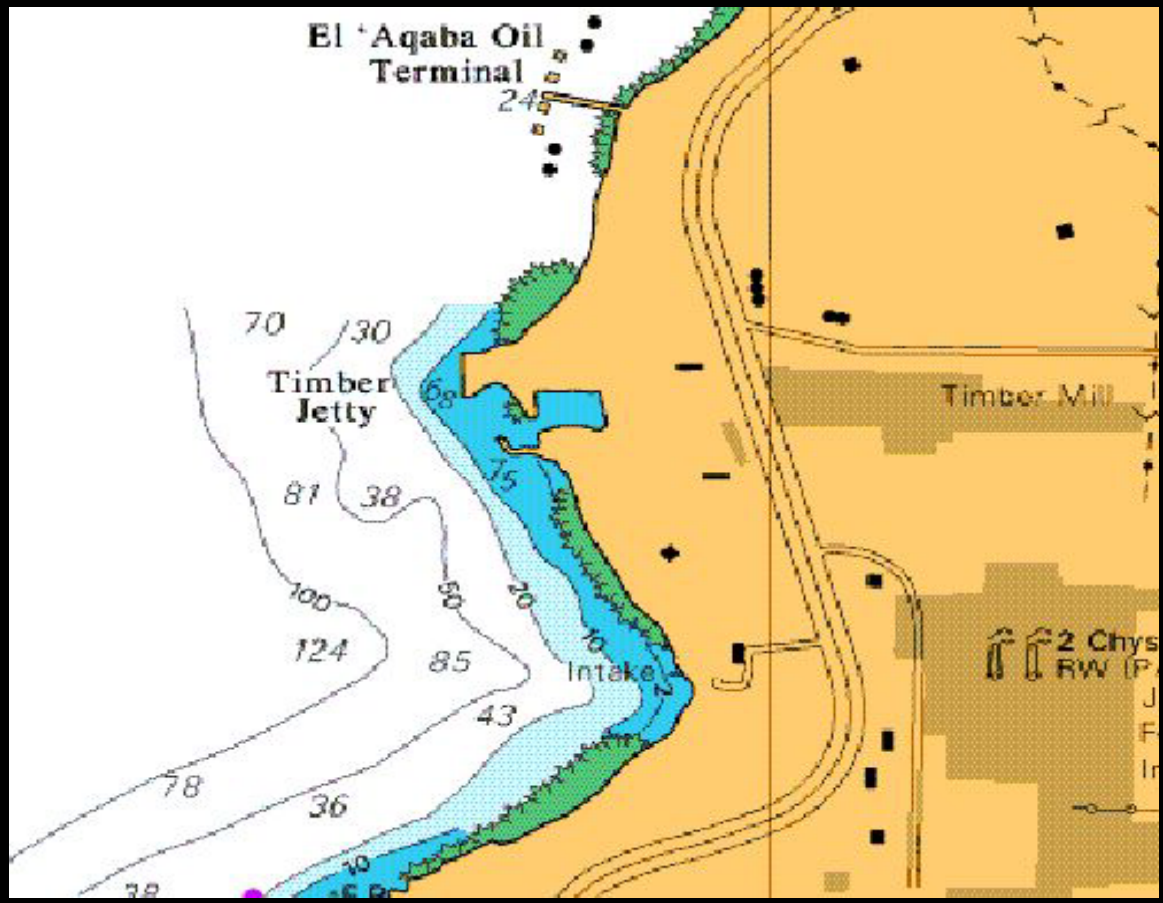
Information for the Base Chart

Base Chart Number :	4704
Base Chart Name :	Red Sea
Country of origin :	United Kingdom
Issue date :	07 03 2002
Latest NM :	2002 80

PERSGA DATA SETS

Level : Hot Spot

Bab Al Mandab



El Aqaba Industrial Port

Regional Study Abu Dhabi Global Environmental Data Initiative

Sustainable Use and Management of Living Marine Resources

- Red Sea fisheries
- Finfish data
- Ornamental Fish data
- Sharks data
- Licensing system and recordings of fishing effort
- Fishermen and fish markets.
- Information on stock levels.
- Ornamental (Aquarium) Fisheries

Sustainable Use and Management of Living Marine Resources

- Development of Training Centres
- Development of any sustainable fisheries management
- Acquisition of the essential information on stock levels.
- Standard data formats were prepared and fisheries enumerators trained in their use.
- Data centres have been established at various fish-landing sites in each country.
- Data on the Environmental Impacts of Trawling for Shrimp
- Data on Ornamental (Aquarium) Fisheries
- Development of Living Marine Resources database

Sustainable Use and Management of Living Marine Resources

- PERSGA has developed user-friendly modelling software to assist in the data analysis and data entry of the studied Red Sea and Gulf of Aden fishery (Finfish, sharks, Ornamental fishes and Equisetic survey). The Software is intended to possess a complete data base for the above mentioned species and provide in depth analysis and calculation using different models.


FinFish
Ornamental Fishes
Sharks
Acounstic
About
FinFish
Sharks
Ornamental fishes
Acoustic survey
Back

FinFish Species in the Red Sea

Find Species Name

...

1

Species: Abalistes stellaris

Family: Balistidae

Common Name (English):

Common Name (Arabic):

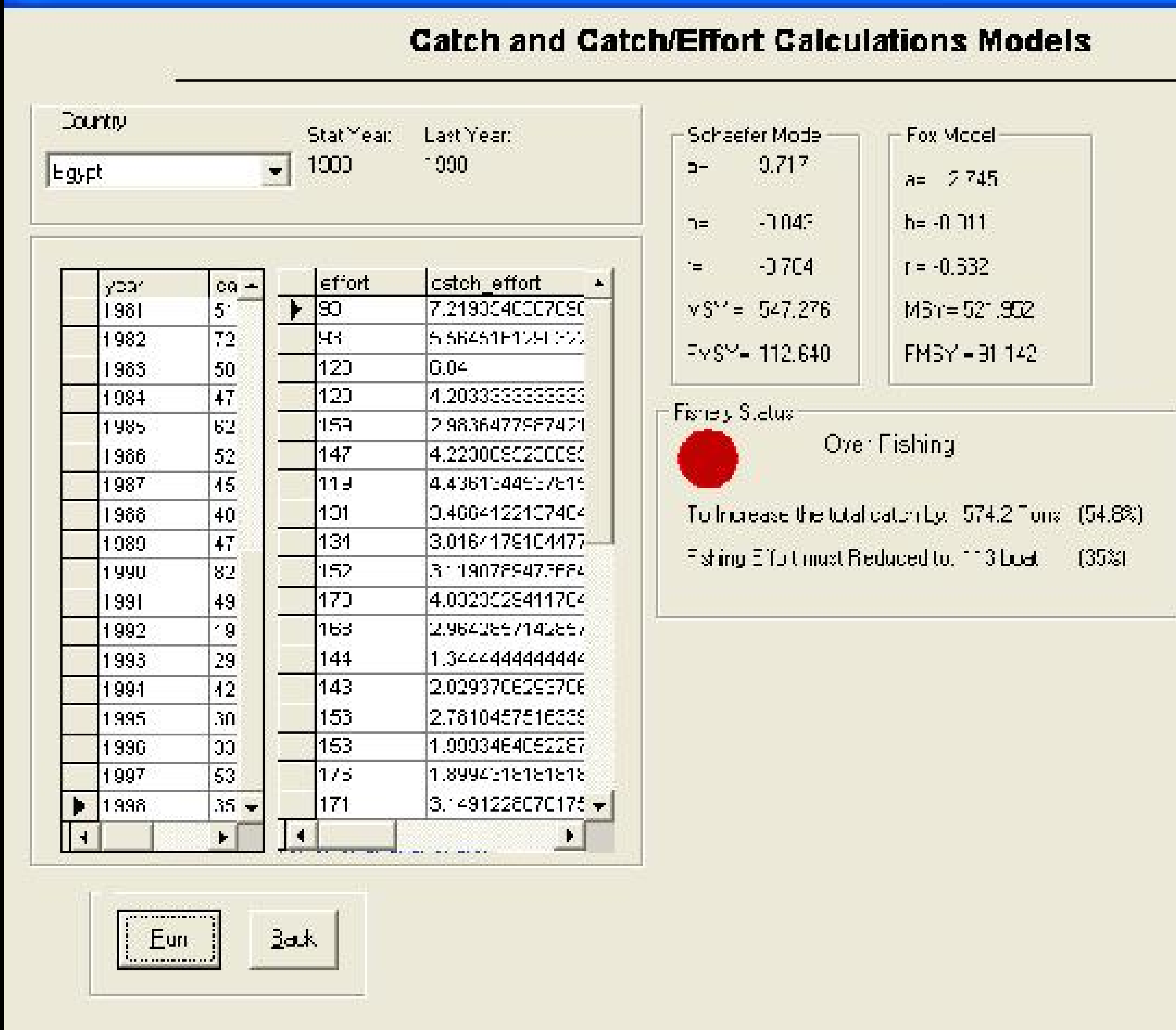
Common Name (French): Texi1

Length (cm): 60

First | Next | Previous | Last

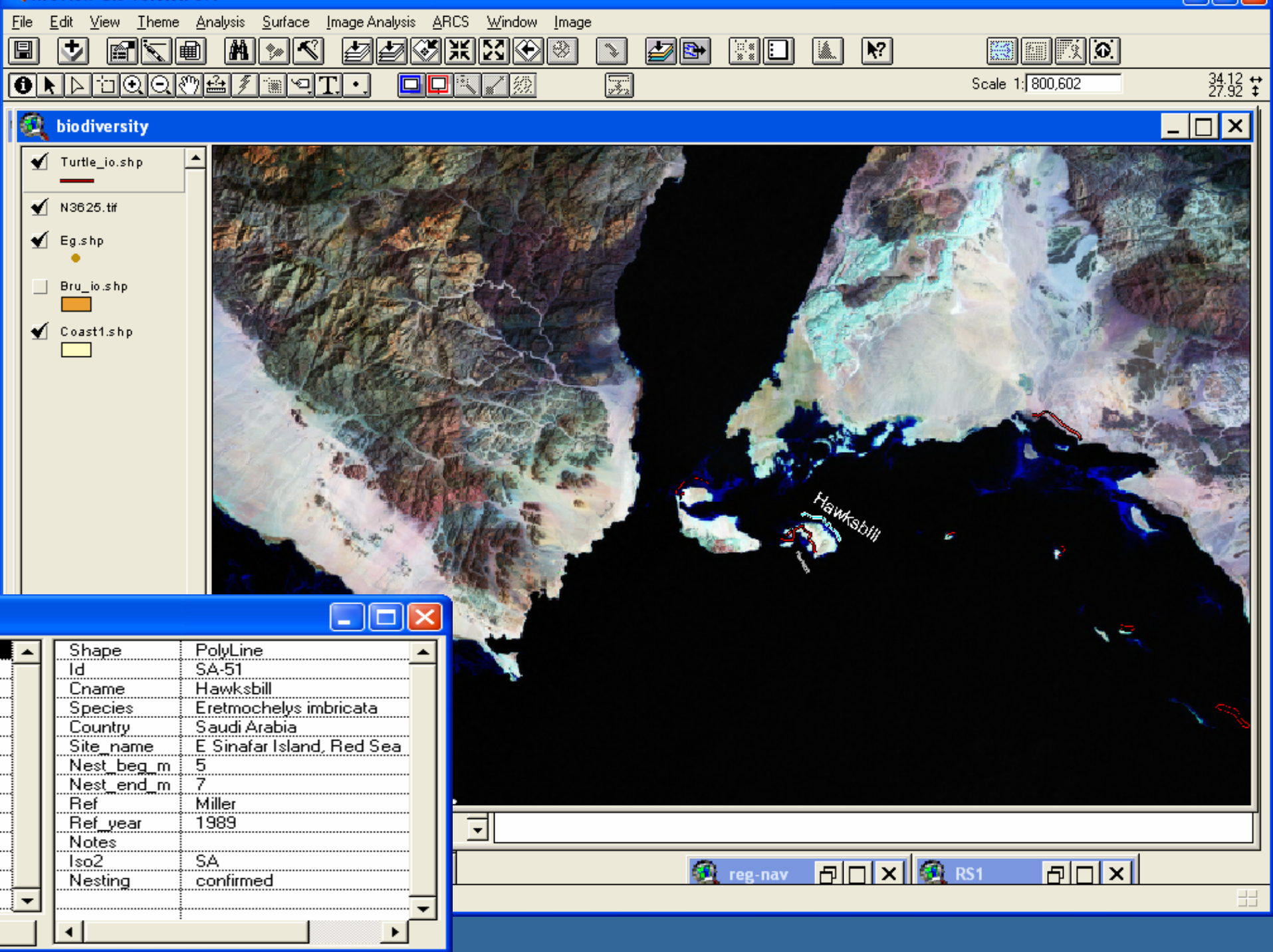
Add | Delete

Back


Catch and Catch/Effort Calculations Models
Country
Egypt
Stat Year:
Last Year:
year
effort
catch_effort
1981
1982
1983
1984
1985
1986
1987
1988
1990
1991
1992
1993
1994
1995
1997
1998
90
120
120
147
131
170
163
144
143
153
153
171
Schaefer Mode
MSY = 547.276
Fox Model
a= 2.745
FMSY = 81.142
Fishery Status
Over Fishing
To Increase the total catch by 574.2 Tons (54.8%)
Run
Back

Habitat and Biodiversity Conservation

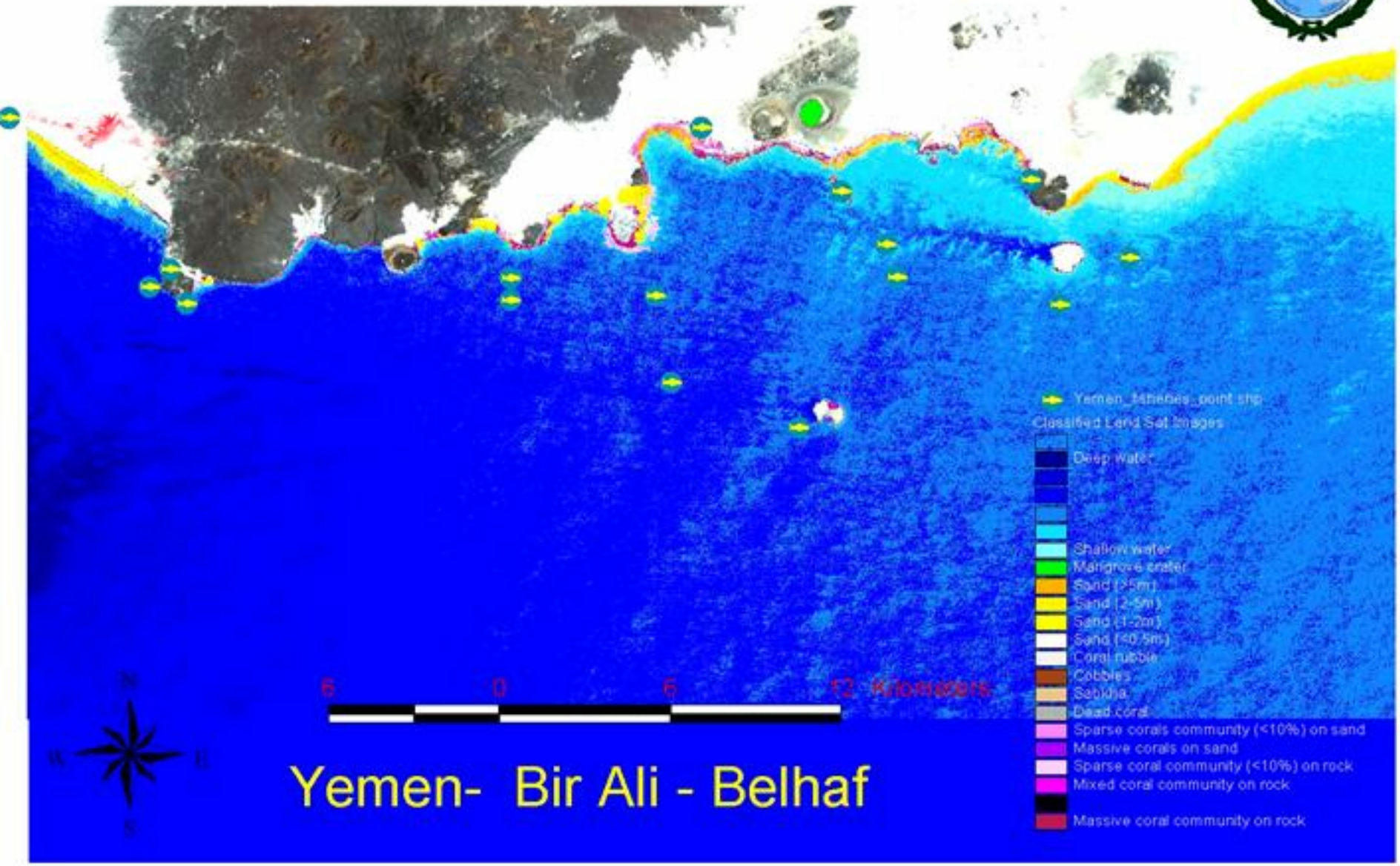
- Development of Habitat and Biodiversity database
- Standard survey methods (SSM) have been prepared to ensure that data collected from each country is regionally comparable.
- A survey of the status of mangrove habitats in Sudan, Djibouti and Yemen was initiated
- A regional survey on breeding seabirds was conducted in Yemen, Sudan and Djibouti. In other countries, where accurate data are already available, national reports were developed from the existing literature.
- Development of a regional coral reef survey
- Development of a regional Action Plan for Coral Reefs in the Red Sea and Gulf of Aden (RAP)
- A marine turtle survey was conducted and data were entered into the HBD information system

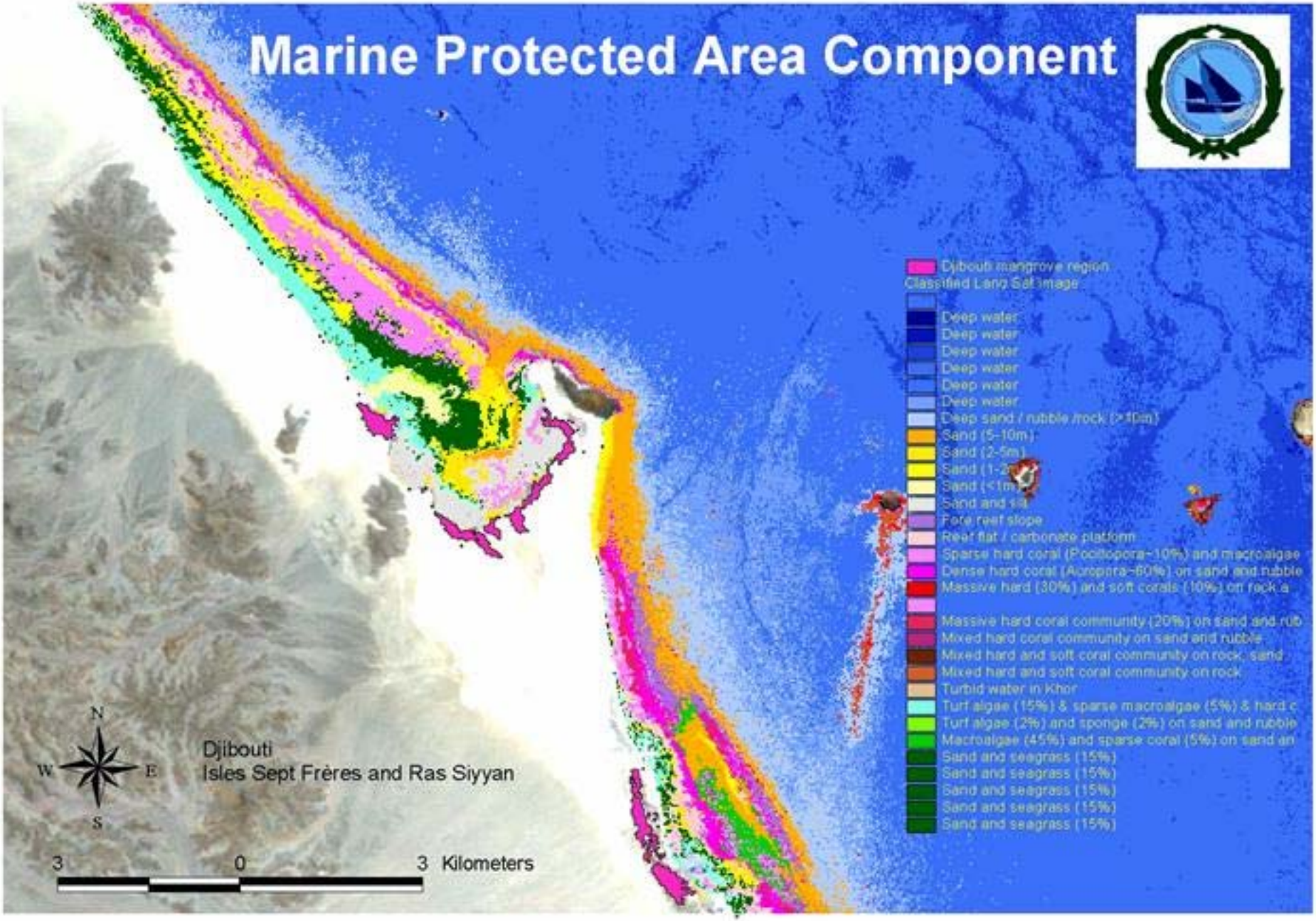

File Edit View Theme Analysis Surface Image Analysis ARCS Window Image
Scale 1: 800,602
34.12
27.92
biodiversity
Turtle_io.shp
N3625.tif
Eg.shp
Bru_io.shp
Coast1.shp
Hawksbill
Shape PolyLine
Id SA-51
Cname Hawksbill
Species Eretmochelys imbricata
Country Saudi Arabia
Site_name E Sinafar Island, Red Sea
Nest_beg_m 5
Nest_end_m 7
Ref Miller
Ref_year 1989
Notes
Iso2 SA
Nesting confirmed
reg-nav
RS1

Development of a Regional Network of Marine Protected Areas

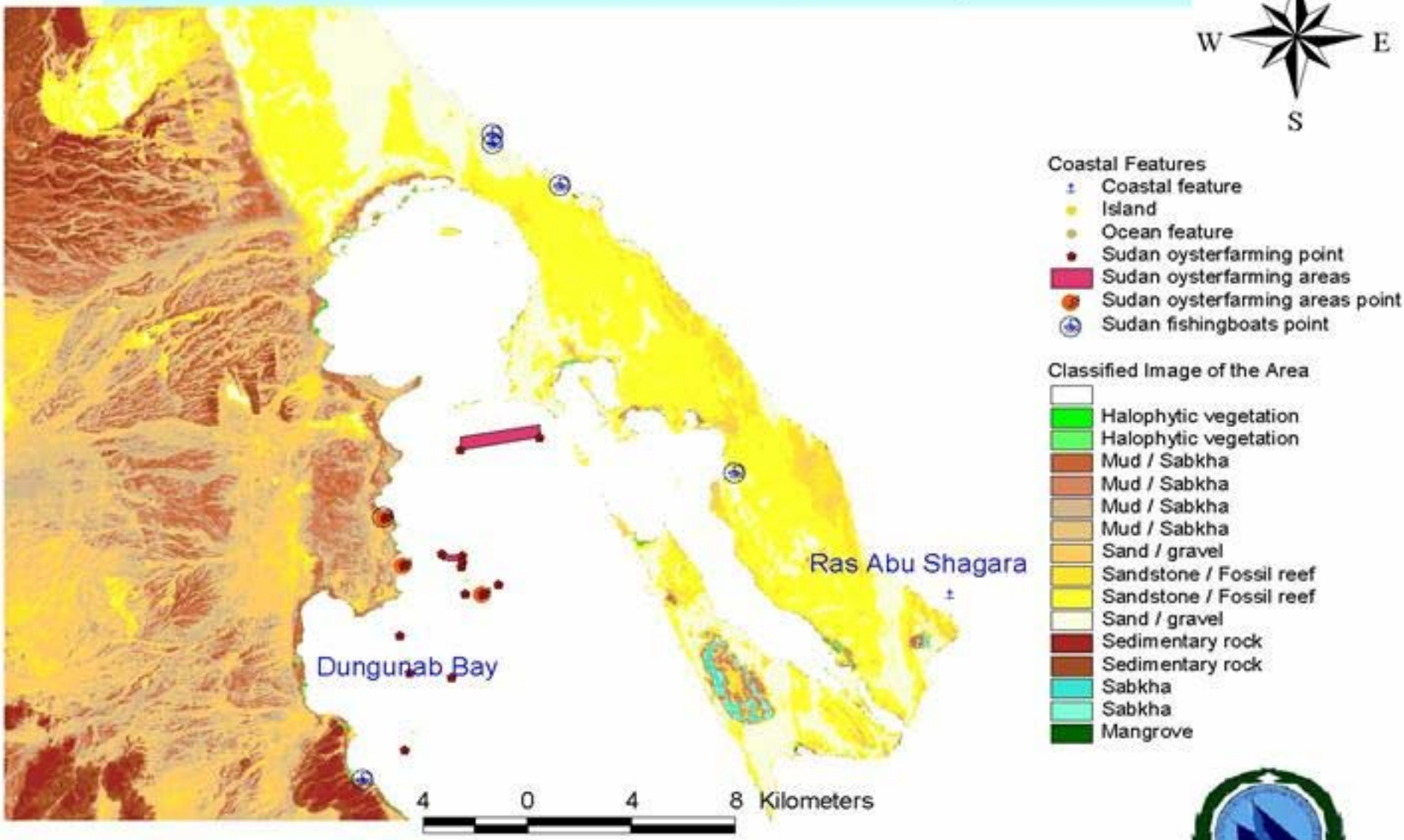
- Establishment of a regional network of experts specialized in MPA planning and management.
- Increased human capacity in MPA management through regional training and exchange programmes.
- Completion of site-specific management plans, supported by detailed habitat, biodiversity and resource use surveys, and public consultation.
- Effective implementation of a network of representative MPAs.
- Establishment of a process of regular regional review meetings with exchange of data, information and management expertise.

Marine Protected Area Component




Marine Protected Area Component
Djibouti mangrove region
Classified Land Sat Image
Deep water
Deep water
Deep water
Deep water
Deep water
Deep water
Deep sand / rubble /rock (>10m)
Sand (5-10m)
Sand (2-5m)
Sand (1-2
Sand (<1m)
Sand and sil
Fore reef slope
Reef flat / carbonate platform
Sparse hard coral (Pocillopora~10%) and macroalgae
Dense hard coral (Acropora~60%) on sand and rubble
Massive hard (30%) and soft corals (10%) on rock a
Massive hard coral community (20%) on sand and rub
Mixed hard coral community on sand and rubble
Mixed hard and soft coral community on rock, sand
Mixed hard and soft coral community on rock
Turbid water in Khor
Turf algae (15%) & sparse macroalgae (5%) & hard c
Turf algae (2%) and sponge (2%) on sand and rubble
Macroalgae (45%) and sparse coral (5%) on sand an
Sand and seagrass (15%)
Sand and seagrass (15%)
Sand and seagrass (15%)
Sand and seagrass (15%)
Sand and seagrass (15%)
N
W
E
S
Djibouti
Isles Sept Frères and Ras Siyyan
3
0
3 Kilometers

Marine Protected Area Component



Proposed Marine Protected Area for Sudan

" Dungonab Bay & Mukkawar (Magarsam) Island, Sudan

Support for Integrated Coastal Zone Management

- Enhance regional exchange of expertise, experience and information on coastal zone management

.• Strengthen national and local government capacity to develop and implement ICZM plans at the national and local

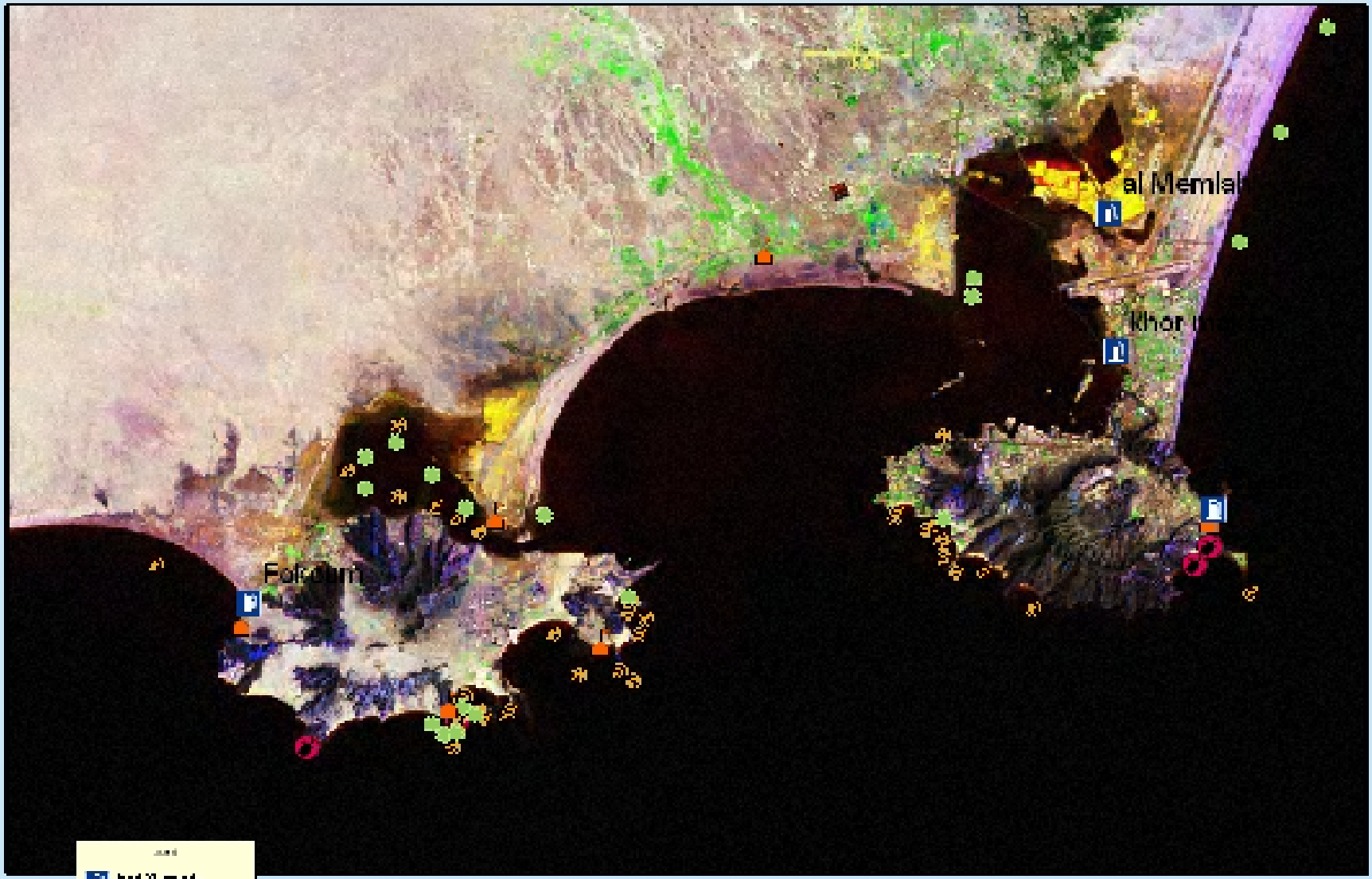
- Promote the capacity of both national and local government departments

- Provide training in the practical skills of policy planning, environmental assessment, monitoring and management in the context of the ICZM process.

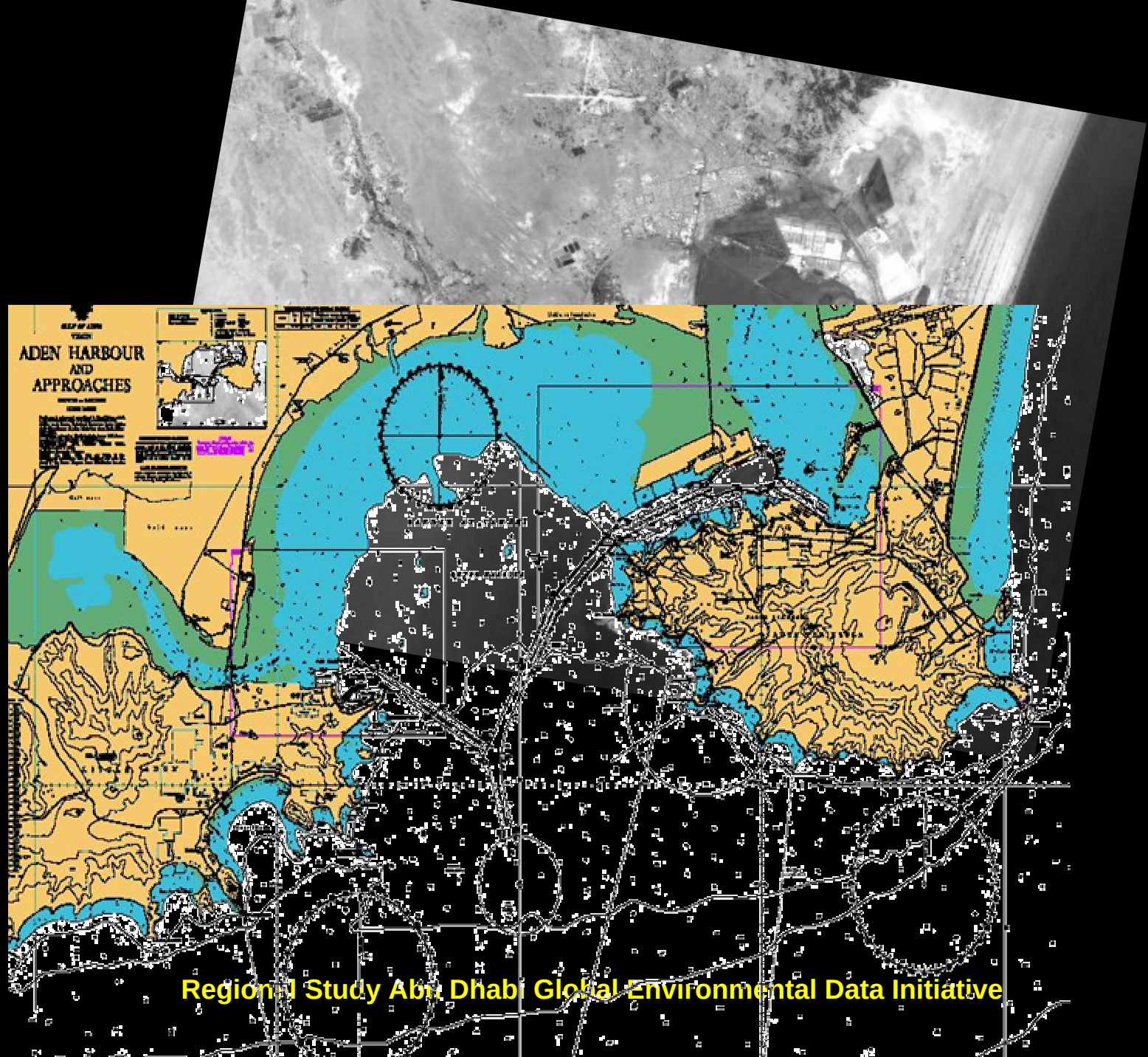
- Reduce environmental degradation within the Region through use of management tools such as environmental assessment, environmental auditing and strategic environmental assessment.

- Improve the technical support base and provision of information required by decision makers through guidelines for standardisation and routine updating of GIS.

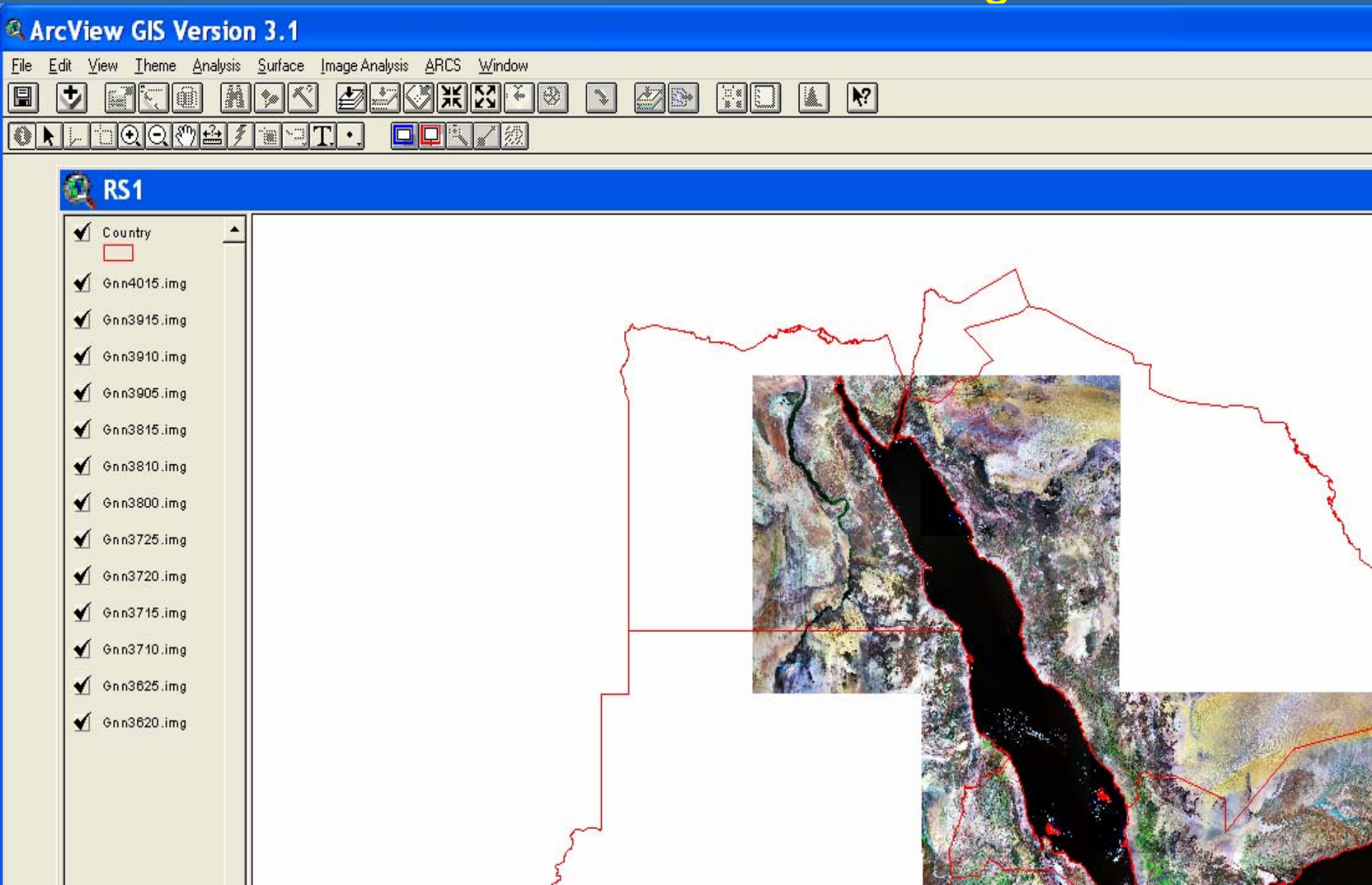
- Increase political and public support for ICZM through participatory approaches in development and implementation.



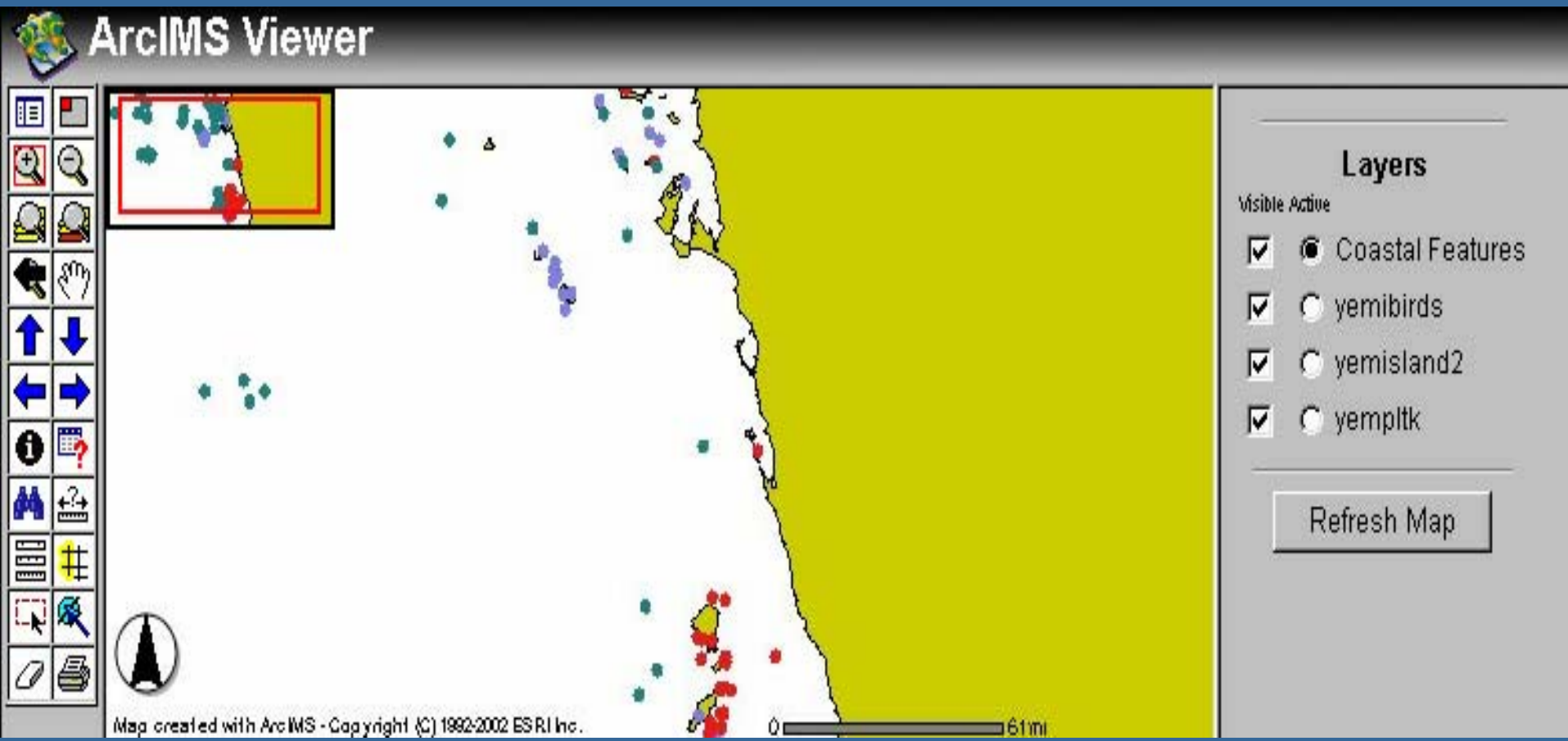
Coastal and Marine Resources in Aden Area


ADEN HARBOUR
AND
APPROACHES
Region.1 Study Ab.. Dhabi Global Environmental Data Initiative

Development of Remote Sensing data covering Red Sea and Gulf of Aden Region:



PERSGA Internet MapServer



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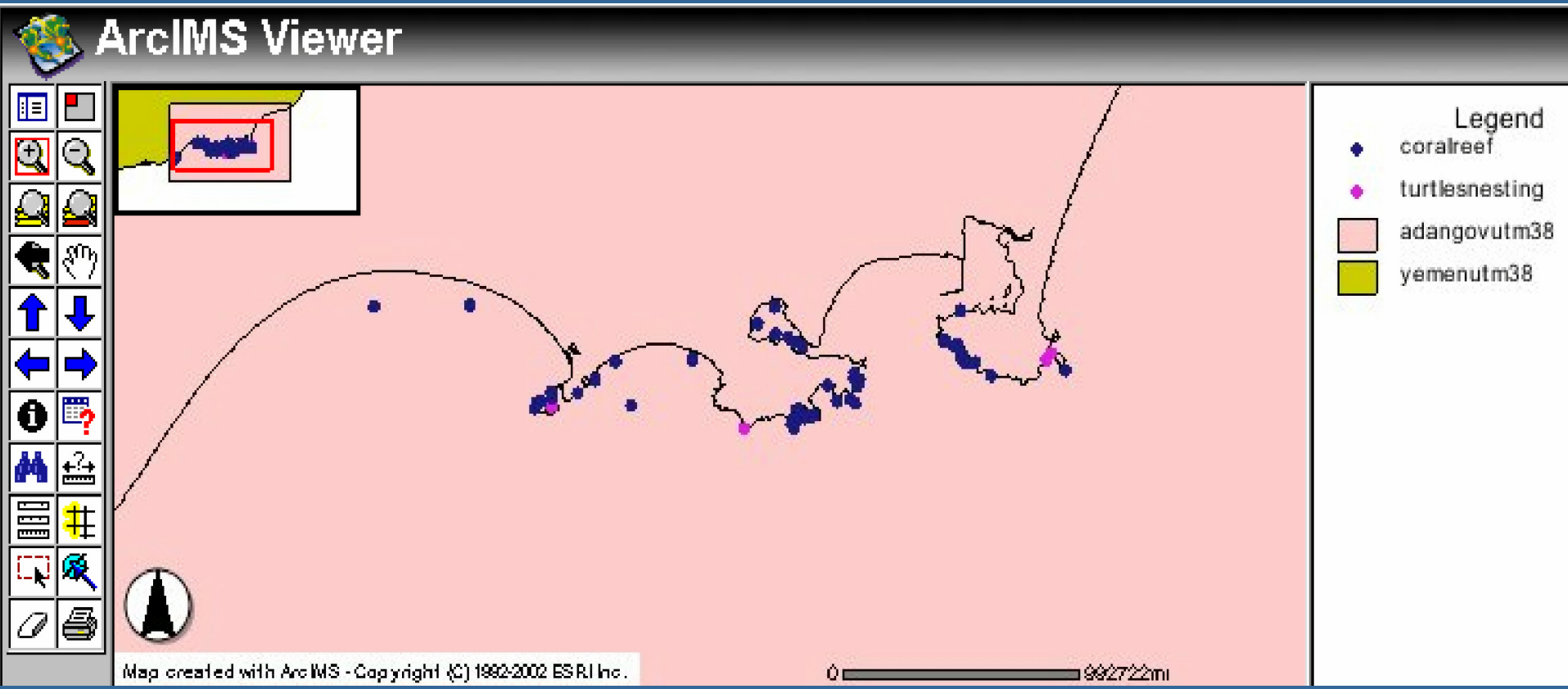
PERSGA Internet MapServer



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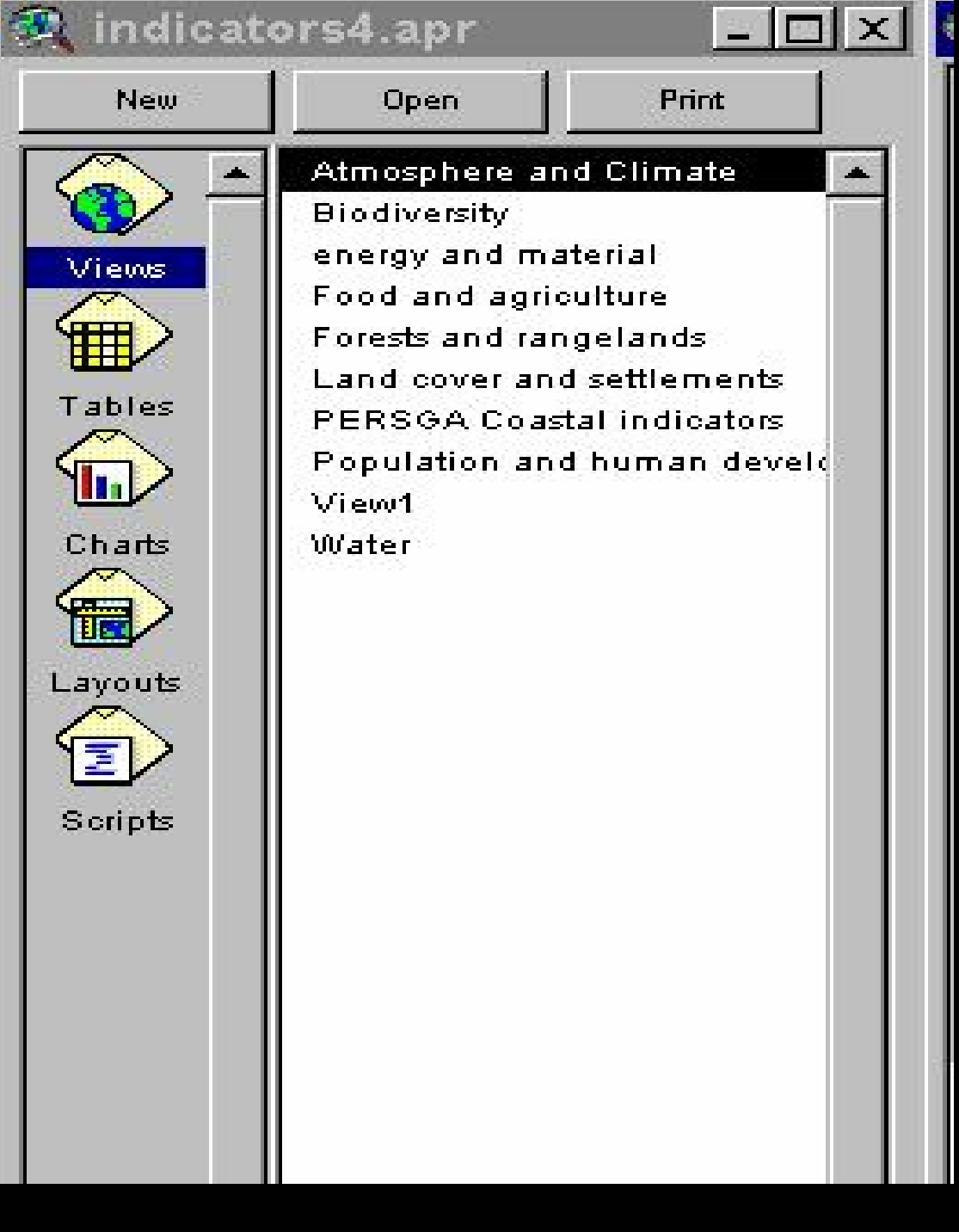
1-GIS based Indicators

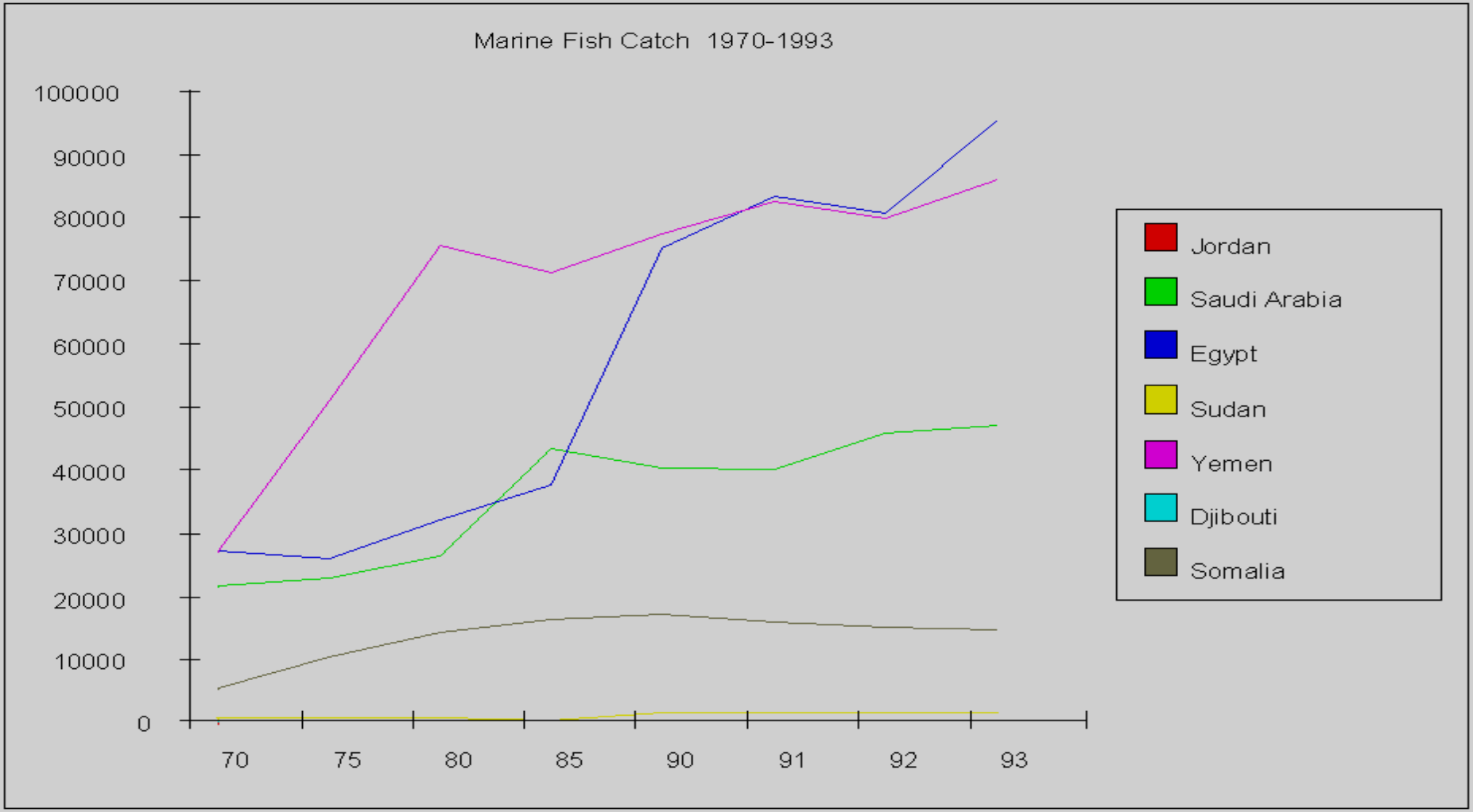
GIS Based indicators that contains data about the following:

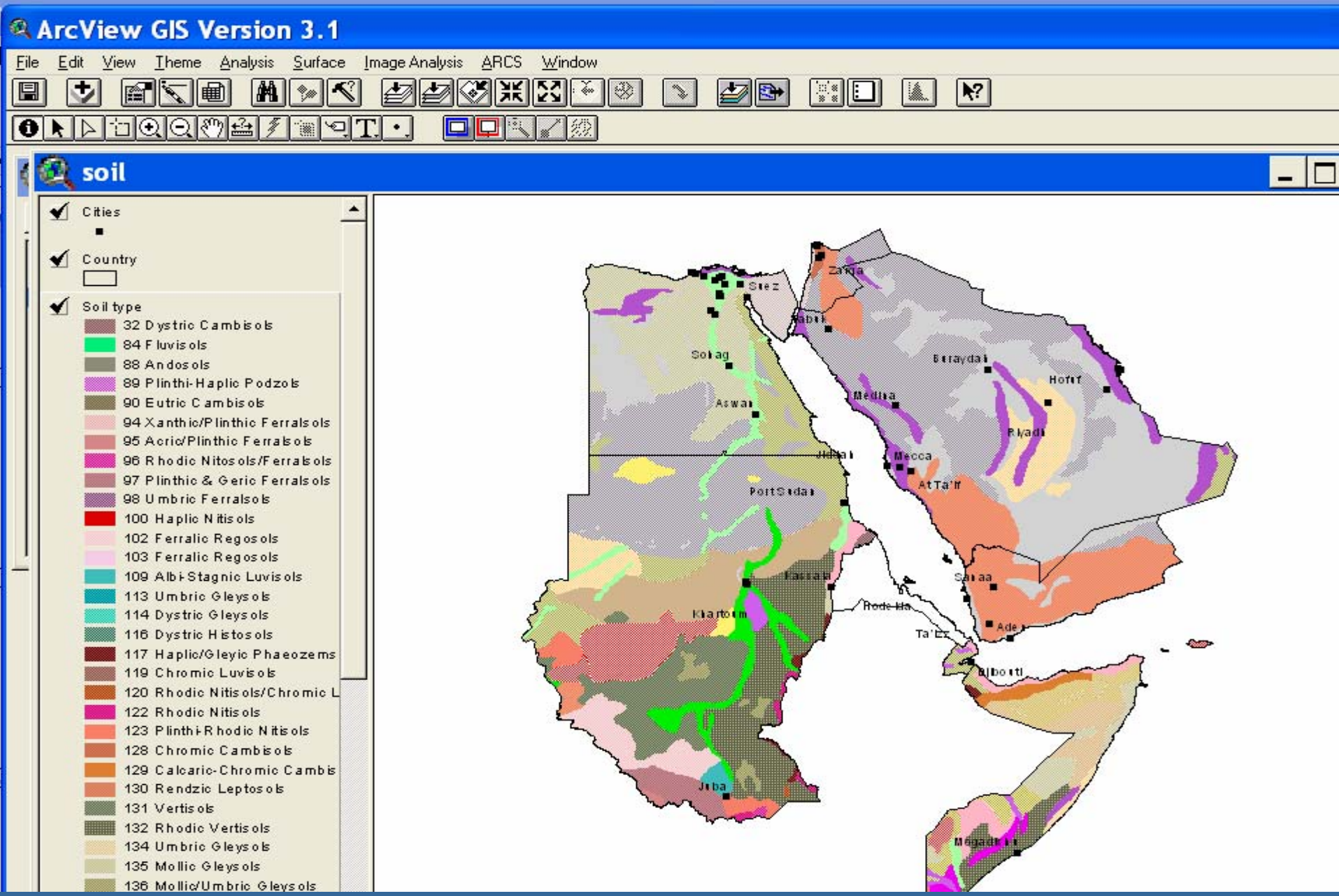
Coastal and Marine
Atmosphere & Climate
Biodiversity
Economic Indicators
Energy & Materials
Food & Agriculture
Forests & Rangelands
Land Cover & Settlements


indicators4.apr
New
Open
Print
Views
Tables
Charts
Layouts
Scripts
Atmosphere and Climate
Biodiversity
energy and material
Food and agriculture
Forests and rangelands
Land cover and settlements
PERSGA Coastal indicators
Population and human develo
View1
Water

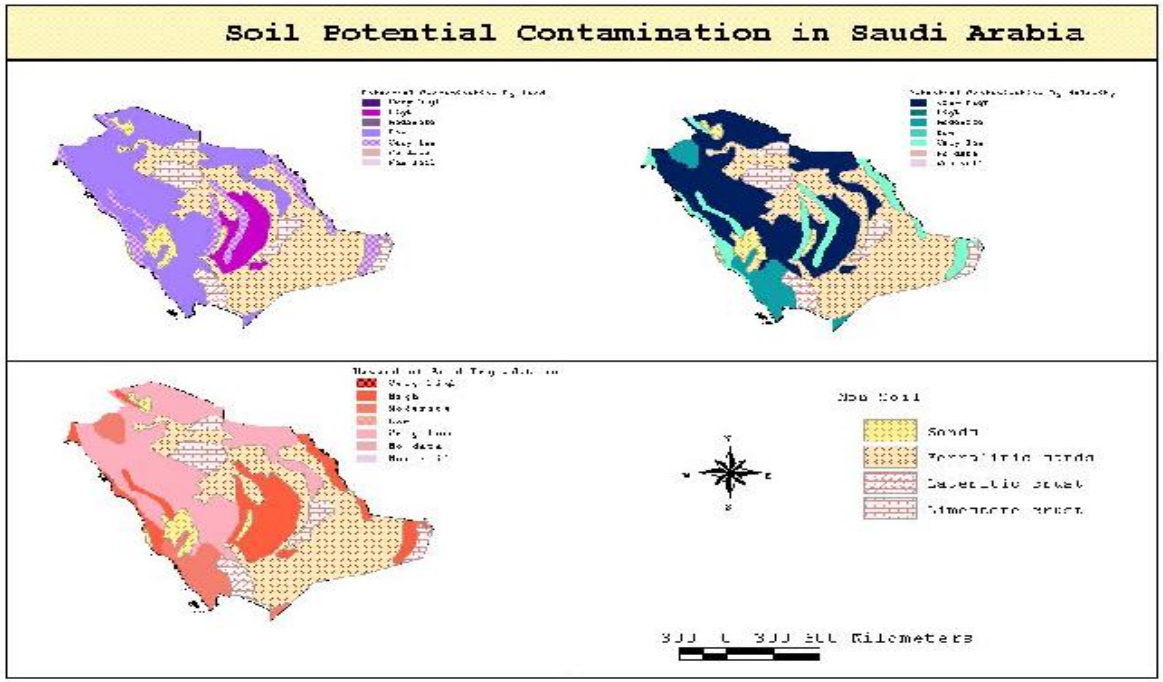
OUTPUTS: In form of Digital Maps

OUTPUTS: In form of Charts





Regional Study Abu Dhabi Global Environmental Data Initiative



Soil map of Saudi Arabia

This map shows the soil technogenic contamination hazard of soils including (1) soil exidation and resistance to acid threats, (2) pollution of soils by lead compounds, and (3) pollution of soils by selenium compounds in Suaudi Arabia.

Data Source(s): DCW and Arcatlas

Strengths

- The system was developed in a participatory approach allowing all the participating countries to enhance the system.
- The system tries to standardize all the data coming from the national level.
- The system created a Network of specialized team to maintain and update the data.
- SAP has set a regional standard for the creation of marine protected areas
- Regional surveys were conducted to collect the data from countries using the same methodology
- Sustainability of the systems is considered as it is maintained at the regional and national level.
- The system was targeting the priority needs of member countries.

Weaknesses

- Lack of Timeliness of data delivery
- Redundancy of data
- Different data formats despite of the ongoing standardization efforts
- Data custodianship
- Integration with other systems

Constraints and barriers

- Access to Internet
- Data sharing between countries/ Ministries/ Academic Institutions
- Time series data is not available in most cases
- Lack of data sharing mechanism among countries and within the same country

Constraints and barriers

- There is a need to improve user access to data, and to enhance data management and data distribution system through acquiring the state of the art software and hardware.
- It is also crucial to develop activities that are directed towards interoperability with national systems.
- There are also no common information management tools to collate data, and to develop regional data compendia from the currently existing data sources.
- To improve the access of data, more attention should be paid to the currently available newsletters, e-mail and regular update of Internet services, a regional library and an information database should be made available to public.

Needs:

- **Technological needs:**

- There is a need to build the capacity to use information and communication technologies (ICT). The technology will facilitate public and various groups, access to information which will result in better environmental decision making process. There is an urgent need to support the developing of data tools for the management of data and information at the sub-national, national, sub-regional, and regional levels. These tools will assist in identifying national data sources, institutions and experts involved in the management of the environmental information

Needs:

- **Institutional needs:**

- There is a clear shortage of technical staff and a lack of resources, devoted to the overall program. This resulted that PERSGA technical, many of whom have excellent qualifications is overloaded. There is also a need for better coordination between parts of PERSGA programs, between PERSGA and member countries and between different agencies or ministries. A problem that has observed within PERSGA is that data developed through projects and studies substitutes for a systematic mechanism for updating of core data sets and other forms of information exchange. There is a need for capacity building activities focusing on developing data to assist national integrated environmental assessment and reporting.

Lessons learned and experiences

- A review of all national and regional on-going projects and initiatives related to the project should have been conducted prior to the implementation which might have decreased the level of redundancy and improve regional co-operation.

- The activities to be carried out under this project required development of a work plan for Region-wide implementation. In furtherance of this goal, the SAP is maintained under revised terms of reference to allow it to oversee implementation and monitor the progress of the full programme.

- Lack of information and access to information is a continuing constraint for developing an environmental Information systems within PERSGA region, including insufficient baseline information data and analysis of available information.

- In many cases, data exists in one Institution, organization, entity or report but is not available to other entities or to the public. The lack of a tradition of information sharing is exacerbated by the technical difficulty of dissemination and access.

Regional and international cooperation

- UNEP
- UNESCO
- CEDARE
- ROPME
- ALECSO
- WorldBank-GEF-UNDP

Opportunities for the future

- The main opportunity is the development of a common vision regarding developing national strategies for environmental information systems. Developing of a regional data standards is also a common main requirement which will enhance regional cooperation. Development of data sharing mechanism will enhance any future co-operation

Recommendations of priorities for action

- **Policy:**

- There is a need for an information exchange mechanism which enables the exchange of information through servers, website and database, and periodic newsletter for the region.

- It is highly recommended to improve the understanding of international environment agreements, and of the linkages of national programmes with these conventions.

- Attention should be drawn to technical assistance for the establishment and implementation of national environmental information Strategies in many countries of the region as part of the assessment of environmental information management policies. Support to national Institutions regarding legislative and policy-making frameworks for data exchange should be provided.

Recommendations of priorities for action

- **Institutional:**
- Institutional capacity needs to be strengthened in the area of regulatory environmental policy and environmental oversight.
- Providing administrative services to the national experts as well as regional expert is highly recommended
- Developing additional regional protocols where needed for in the SAP.
- Strengthen the capacity of public and private sector to provide consistent and reliable data to enhance the environmental assessment processes.
- Provide countries with the state of the art hardware and software as well as training on the use of different information systems.
- There is a shortage of qualified environmental information staff in the region for planning and follow-up departments.

Recommendations of priorities for action

- **Technical:**

- There is a need for developing national environmental indicators. It should be noted that the lack of data for any environmental indicator will not automatically prevent its development of environmental information systems. However, the lack of agreed upon set of indicators can make the effort of developing information system much more difficult and Costly in time and resources.

- It was crucial to prepare a regional environmental education and communication strategy as part of the thematic programme of PERSGA.

- Establishing an effective regional information exchange system and databases requires an initial understanding among all countries of the importance of such systems. The benefits of the outcomes of the system should be made clear to all countries from the very beginning of the programme.

- Regional initiatives, projects or studies that build upon and integrate existing national pilot or prototype activities are particularly desirable.