

Commission on the Protection of the Black Sea Against Pollution

Black Sea Science Plan As A Tool For Establishing Dialogue Between Black Sea Scientific Community And Environmental Decision Making

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Black Sea Convention calls for combating

- **Pollution by hazardous substances and matter**
- **Pollution from land-based sources**
- **Pollution from vessels**
- **Cooperation in combating pollution in emergency situations**
- **Pollution by dumping**
- **Pollution from activities on the continental shelf**
- **Pollution from or through the atmosphere**
- **Pollution by hazardous wastes in transboundary movement**

And

- **Protection of the marine living resources and marine ecosystem**

Black Sea Convention Article XV

Scientific and technical cooperation and monitoring

The Contracting Parties shall cooperate in conducting scientific research aimed at protecting and preserving the marine environment of the Black Sea and shall undertake, where appropriate, joint programmes of scientific research, and exchange relevant scientific data and information.

Overall Aims of the Black Sea SAP are to enable the population of the Black Sea region

to enjoy a **healthy living environment** in both urban and rural areas, and

to attain a **biologically diverse** Black Sea ecosystem with **viable natural populations** of higher organisms, including **marine mammals and sturgeons**, and which will support livelihoods based on sustainable activities such as fishing, aquaculture and tourism in all Black Sea countries

Black Sea Strategic Action Plan species needs for

Regular assessment of Black Sea Pollution and Black Sea ecosystem and efficiency of policy measures

Annual and 5 years reporting on policy measures

- In Pollution Reduction
- In Management of Marine Living Resources
- In Sustainable Human Development

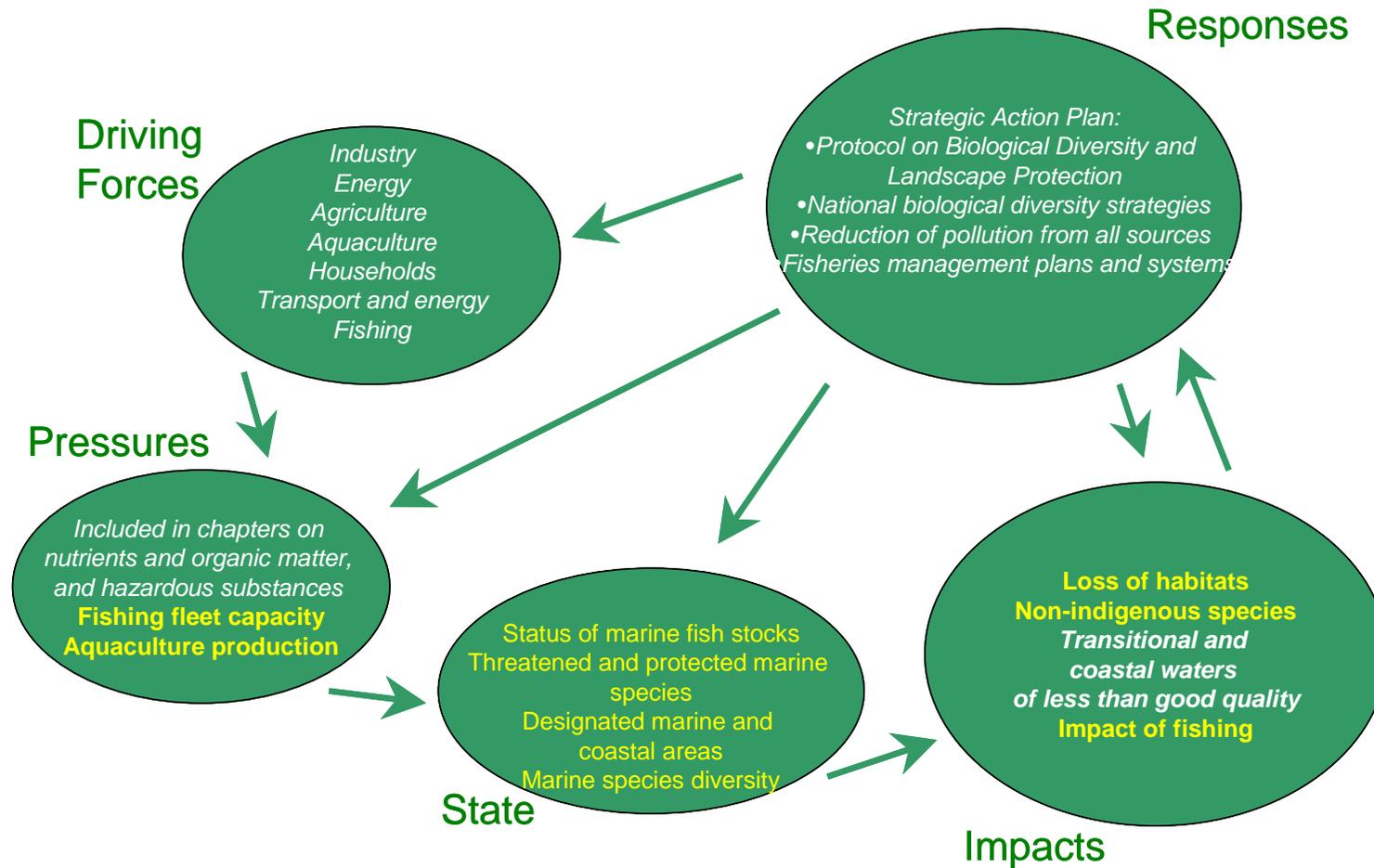
Clearing house mechanism for the exchange of information on bibliography, data sources and research programmes.

Bi-annual research conferences on topics related to the goals of this Strategic Action Plan

Clearing House Mechanisms

- Every Convention has clearing house mechanism (46 only IMO Conventions in the Black Sea; UN conventions); **often contradictory messages; information not up-to-day**
- Black Sea networks and data bases: NATO; ARENA, ASCOBAS, SCENE, IASON, SESAME, etc.; national databases; European networks, private sectors; **often not replenished**, involve different institutions; specialized; not usable for interdisciplinary integration
- Publications, projects, reviews: **often in national languages; results of projects do not reach target groups**

DPSIR Model for Management



Indicator-Based Approach

- *Require solid **scientific** knowledge*
- *Consistent and **compatible** data sets*
- *Good **spatial** coverage*
- *Agreed assessment criteria: **reference conditions, background values***
- *Agreed assessment **methodologies***

Drivers in the Black Sea: basin-wide?

- Industry *differences in statistics*
- Agriculture *differences in statistics*
- Aquaculture *differences in statistics*
- Household *differences in statistics*
- Transport and Energy *differences in statistics*
- Fishing *differences in statistics*
- Tourism *differences in statistics*

DPSIR: Pressures

- Nutrients and organic matter: inputs, assessment criteria, reference conditions
- Hazardous substances: inputs, background values, assessment criteria and reference conditions
- Fishing Fleet capacity: differences in statistics
- Aquaculture Production

DPSIR: Impact

- Losses of Habitats: what habitats are lost, what habitats are threatened
- Non-indigenous species: require creation of mechanism to monitoring
- Transitional and coastal waters less than **good quality: require quantitative approach**
- Impact of fishing

Are Regional Efforts To Combat Eutrophication Effective and Properly Reflected in Concentrations of Nutrients in the Black Sea?

- impact of Danube and other large rivers on the Black Sea (nutrients, micro pollutants, oil) on the Black Sea Ecosystem
- Re-assessing the Black Sea Hot Spots: inflow from Bosphorus Strait (15% of Istanbul discharge accounts at least for 1.5 million people)
- Input of nutrients from diffuse sources (atmosphere, runoff, ground waters)

What Are Priority Pollutants for the Black Sea and Their Impact on Ecosystem and Human Health?

- Spatial distribution and mapping
- Background values; reference conditions
- Impact on biota and people

Black Sea Biodiversity and Landscape Conservation Protocol: Data Deficient

Annex II. Species of the Black Sea Importance:

- *Alga* 5 species
- *Cormophyta* 4 species
- *Polychaeta* 5 species
- *Crustacea* 13 species
- *Mollusca* 7 species
- *Pisces* 26 species
- *Marine Mammals* 4 species
- *Aves* 22 species

Annex IV. List Of Species Whose
Exploitation Should Be Regulated: biological
safety limits

MOLLUSCA

Rapana thomasiana

Mytilus galloprovincialis

PISCES

28 species

Management Questions to be answered by Science

*Are these **complete** Lists?*

*For which species we need the **urgent** conservation plan ?*

*What are **priority habitats** for establishing protected areas?*

What Monitoring Program should be established?

Emerging Problems

- Climate Change and Its Consequences for the Black Sea and its people
- Other Problems to be at least aware of for decision making?

Quality of Research and Timing

- Quality of Measurements require serious attention from sampling to final reporting
- Used techniques often do not allow Black Sea Integration
- Assessment methodologies need harmonization for the Black Sea regional integration
- Predicting power of science is underused, if used at all

Sustainable Human Development

- Coastal processes and coastal development
- Erosion
- Are Tourism and Aquaculture sustainable?
- Criteria for Environmental Impact Assessment
- Environmental pricing
- Economic indicators
- Demography and Social Indicators

Why Science Plan for the Black Sea SAP

- **Targeted research** in order to answer BSC management questions
- Identified environmental priority issues that require **Black Sea regional efforts**
- Possibility to conduct **regionally coordinated** national research
- **Guidance** for national and international funding organizations
- **Guidance for** the Black Sea Commission in supporting **project proposals**

What will happen after the Conference?

- Research Priorities included in the updated BS SAP to be signed in 2007 for next five years and beyond
- State of the Black Sea Environment Report is under preparation
- The Papers of the Conference will be considered during preparation of this report
- Proceeding will be prepared on CD
- Preparation of the 2nd Biannual Scientific Conference will be started