Science-Policy Interface: The Black Sea Commission System

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Map of the Black Sea
Bridging: land and sea; science and policy; interests......
Environment - In general, environment refers to the **surroundings** of an object.

Anthropocentric perspective

Only after the last tree has been cut down,  
Only after the last river has been poisoned,  
Only after the last fish has been caught,  
Only then will you find that money cannot be eaten.
“Ecocentric” perspective - justifying environmental protection on the rationale that human beings should normally regard themselves as a part of nature, not above or outside nature (the weakest link).

PRIORITY: Awareness - Quality of our life depends on the quality of environment!
PRIORITY: Management - Of the highest level of importance

Is there necessary and unnecessary environmental features?

NO, NO, NO

Ref.: SCIENCE
Human interest and Nature wellbeing

Increase economic prosperity without endangering the ecological recovery.

No net loss of natural capital or human capital.

People/policy makers have stronger preference to care about ecosystem functions which directly affect human welfare.
PRIORITY: Valuation: Better UNDERSTAND and value Ecosystems Goods and Services
SPATIAL PLANNING
taking into consideration

CUMULATIVE EFFECTS
States with different level of development, different economic systems, different political interests and cultural heritage, but the Black Sea region is a SHARED RESOURCE. Environment Problems - Transboundary
The basis for regional cooperation

Bucharest Convention

4 Protocols

SAP1996 and 2009

Other Plans, Strategies and Guidelines
Strategic Goal: Good environmental status

Preserve commercial marine living resources through:
- Sustainable use of commercial fish stocks and other marine living resources.
- Restore/rehabilitate stocks of commercial marine living resources.

Conservation of Black Sea Biodiversity and Habitats through:
- Reduce the risk of extinction of threatened species.
- Conserve coastal and marine habitats and landscapes.
- Reduce and manage human mediated species introductions.

Reduce eutrophication through:
- Reduce nutrients originating from land based sources, including atmospheric emissions.

Ensure Good Water Quality for Human Health, Recreational Use and Aquatic Biota through:
- Reduce pollutants originating from land based sources, including atmospheric emissions.
- Reduce pollutants originating from shipping activities and offshore installations.
Assessment of river loads (still the largest source of pollution), incl. likely contributions of different emissions to river loads. Harmonization of river monitoring strategies. River-basin management plans built.

Point and Diffuse sources identified (incl atm.), prioritized and tackled. DABLAS work.

Incorporate “market-based” instruments — principally pollution taxes and tradeable permits.

Introduction of standards, which require the use of clean technologies and phasing-out high waste and waste-generating technologies, including the use of BAT and BEP.
Shipping, Oil Pollution, NHS

- Training, capacity building
- Data and information collection
- Legal and policy documents update
- Exercises (regular Alpha, Bravo, Delta)

ACCIDENTS
Kerch, 11 November, 2007
Empty drum of toxic waste picked up from the NW Shelf during the 2006 BSERP research cruise

Chernobyl - effects till 2030.
Coastal and Marine Protected Areas - A habitat- and ecosystem- oriented approach to biodiversity management (not species-oriented). Mapping of habitats, migratory routes, spawining areas, nurcery grounds, etc.

Improved management strategies to prevent introduction of new invasive species, targetting the priority vectors of introduction – ships (ballast water) and aquaculture. BWM Convention. Monitoring system for early detection of alien species, especially in “hot-spots” - ports, aquaculture areas.

Capacity-building and training of marine scientists and decision-makers.

Regular re-evaluations of biodiversity state. Check Lists. Regular update of Lists of Commercially Protected Species, Red Lists, Exotic Species and Habitats of Black Sea importance. These should serve as a tools for conservation management at the regional level.
Legally binding document in fishery

Harmonised methodologies for Stock Assessment;

Quotas for commercial species;

Reporting: Stocks; Landings; Illegal Fishing; Fishing Fleet; By-catch, strandings; Economic indicators; Measures - legislation/policy, bans, fishing seasons, areas.
Fishing down the Food Web, Pauly 2003

The result of all this is to induce ‘fishing down marine food webs’, which now occurs everywhere.
Management Plans for MPAs (Hope Spots)
Priority: Climate change

- Land loss
- Movement of population
- Erosion
- Storms, floods
- Biodiversity change

Adaptation costs, such as construction of seawalls and soft measures (e.g. beach nourishment) - start from 500 million US dollars annually for Eastern Europe.
E.g.: Beach Erosion Evolution Mamaia: 1970 and 2003

Adlia and Batumi in Georgia
Global amount of reported economic damages: all natural disasters

($\mathbf{\text{\text{\$ billion in current prices}}}$)

Priority: Prevention and Preparedness
Recent findings of new exotic species in the Black Sea – expansion of areals

2005 - *Penaeus semisulcatus*

2006 - *Alexandrium ostenfeldii*

2006 - *Syngnathus acus*

2009 - сем. Sagartidae

2009 - *Saduria (=Mesidotea) entomon*

2009 – *Chrysaora hysoscella*

2009 – *Bolinopsis vitrea*

2009 - *Tridentiger trigonocephalus*

2009 - *Penaeus semisulcatus*

2006 - *Syngnathus acus*
BSIMAP and BSIS

A consensus was reached by the BSC member states that the BSIMAP should:

- Build on established national monitoring programmes, including some mandatory parameters;
- Be compatible with underlying WFD and MSFD principles;
- Utilise standardised sampling, storage, analytical techniques, assessment methodologies and reporting formats. [Reporting formats have been specified in agreement with EEA Formats]. Standardised manual for nutrients analyses was written and a series of workshops were held during 2005 to promote harmonization of techniques and capacity building.
- Include agreed QA/QC procedures. Undertake intercalibration and intercomparison exercises - a first regional quality assurance intercomparison exercise was undertaken in 2004 for metals, nutrients, chlorinated pesticides and petroleum hydrocarbons. Seven laboratories from five countries participated (no Turkish laboratories took part in the exercise), albeit with different laboratories participating for different groups of chemicals. Since 2005 the BSC provides funds for all countries to participate in the IAEA-MEL Quasimeme chemical quality assurance exercise.
BSIMAP parameters

Black Sea ecosystem

- Water column
- Sediments
- Biota

Black Sea countries undertake also monitoring of pressures:

Riverine loads (priority determinands agreed)
Municipal discharges
Industrial sources of pollution
Atmospheric pollution
Agriculture
Monitoring stations in the Sea
BSIS data (LBS, PMA, ICZM, FOMLR, CBD, ESAS AGs reporting – working together policy makers with scinetists) in use:

- **Assessments** of marine waters: environmental status, pressures and impacts, socio-economic analyses, taking into account coastal, transitional and territorial waters;
- **Determination of good environmental status** - establishment of set of characteristics, criteria and methodological standards;
- Establishment of environmental **targets** and associated **indicators**;
- **Monitoring Program optimization**;
- **SoE, TDA, SAP** Implementation reports, Annual and 5-years summaries
- **Manuals, Methodologies, Guidelines**

**Programs of Measures (SAP update)**

**Pubic information**
Priority: Observation, Information

Strategy for further development of INTEGRATED monitoring

- Climate change
- Screening for emerging pollutants
- Pollution effects on biota
- State of the coast, open sea
- Marine litter
- Cetaceans (networks of by-catch and strandings)

Network of Reference Stations

Use of new technologies

Information Systems

Hindcast, Nowcast, Forecast (short-term), Scenarios (long-term)
BS Scientific Conference: meeting policy makers with scientists

Hazardous cargo

Figure 5.23: Mean concentrations of chromium, copper, DDT, total HCHs, total organic carbon and total petroleum hydrocarbons in sediments of the Black Sea, 1996-2006
ENVIRONMENT: GES

INDICATORS

Indicators

Recommendations
HEALTH

Priority Of PRIORITIES
THANK YOU FOR YOUR KIND ATTENTION!

WWW.BLACKSEA-COMMISSION.ORG

*http://www.blacksea-commission.org/_datalinks.asp