

Clobel Environment Facility



The UNDP-GEF Black Sea Ecosystem Recovery Project, Phase II (2004 – 2007)

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Content

- Introduction to the Black Sea
- What BSERP is dealing with?
- Support to policy reform in the Black Sea region
- TDA Update/SAP Revision
- Capacity building activities
- Research activities and results of the BSERP research programme (2003-2006)

Black Sea in Figures:

Geographical Coordinates 46°33' - 40°56' N. and 27°27'-41°42' E.

Drainage Area 2 000,000 km2 Total Shoreline: 4 340 km

Bulgaria 300 km Georgia 310 km Románia 225 km The Russian Federation 475 km



Black Sea biological species Fungi, algae, higher plants 1,619 Invertebrates 1.983 Fishes 168 Marine mammals 4

Total Population of Basin 160 mln inhabitants











'Liquid bottom' deep sea







Multiple threats













The Key Partner and Basis

- The Commission on Protection of the Black Sea Against Pollution (Bucharest Convention)
- The Black Sea Transboundary Diagnostic Analysis (1996)
- The Black Sea Strategic Action Plan (1996, revised 2000)



The UNDP-GEF Black Sea Ecosystem Recovery Project

- The Final GEF IW Intervention in the Black Sea region (1993 2008)
- A partner in the Black Sea Danube GEF Strategic Partnership
- The key focus of BSERP is nutrient load reduction
- Activities cover policy/legislative reforms and institutional strengthening, capacity building, research, investment programme promotion and development, public participation,





Policy Reform and Institutional Strengthening

- Support to the Permanent Secretariat of the Black Sea Commission
- Cooperation with other international/regional Conventions (ICPDR)
- Institutional Review of the Black Sea Commission and its structures
- Development of Inter-Ministerial Coordination Mechanisms
- Update of the BSSAP (2007) following updated TDA (2006 end)



Update of Transboundary Diagnostic Analysis (TDA) – Key Steps

- Identification and initial prioritisation of transboundary problems, analysis of those outlined in BS TDA (1996)
- Gathering and interpreting information on environmental impacts and socio-economic consequences of each problem
- Causal chain analysis (including root causes)
- Completion of an analysis of *institutions*, *laws*, *policies* and projected investments
- Status: TTT Meeting (July 2006)
- To be completed by late 2006



Formulating the SAP

Key steps:

- Review long term vision and Eco/WR QOs for the region
- Assess the acceptability of the options, including: technical feasibility, as well as economic and political
- Set short-term targets and priority actions
- Develop indicators
- To be completed in 2007 and adopted at the Ministerial Conference



Capacity Building



Environmental Monitoring:

- Nutrients (IAEA MESL)
- Biological monitoring
- Toxic substances
- Inter-calibration exercises (2004, 2006) (IAEA MESL)
 - TrainSeaCoast
- Pilot projects:
 - Watershed management
 - VTOPIS
 - ICZM, inc. land use planning tools
- Best practices (agriculture, fishing)
- Community actions (Small Grant Programme)



BSERP International Study Group

- What were/are the discharges of nutrients to the system?
- How are nutrients cycled through the system?
- What are the factors limiting eutrophication in the system?
- Are Black Sea ecosystems really recovering?



Research Activities





Danube Impact Study

- 4 cruises in NW shelf of Black Sea (2003-2006)
- Atmospheric Deposition Study
- Kamchiya River Nutrient Export Model
- Vessel Traffic Oil Pollution Information System

Livestock assessment



Danube Input vs. BS State

Suspended solids NH₄-N NO₃-N NO₂-N **Inorganic N** PO₄-P **Total P** BOD₅



Loads from the Danube

Nutrients in water Secchi depth Turbidity Chl-a concentrations Macroalgae **Dissolved** oxygen Phytoplankton Zooplankton Macrozoobenthos Pollutants – organic and inorganic

State of the Black Sea





Nutrient and BOD5 content of livestock manure in the Black Sea sub-basins of Romania (top) and Bulgaria (below)





Assessment of BS State

Nutrients in water	No Clear Improvement
Secchi depth	No Data
Turbidity	No Data
Chlorophyll-a concentrations	No Clear Improvement
Macroalgae	No Clear Improvement
Dissolved oxygen	Improvement
Phytoplankton	Improvement
Zooplankton	Incomparable data
Macrozoobenthos	Clear Signs of Recovery
Pollutants – organic and inorganic	Screening



Annual average nutrient concentrations in surface waters (1975-2005) near Constanta, Romania







August Concentrations of Chlorophyll-like Substances

2001



Source: Joint Research Center of the European Commission, Ispra, Italy



Phytoplankton cell density and biomass (average annual data) near Constanta, Romania





Phytoplankton community composition (1986-2005) near Constanta, Romania



Slow recovery of biodiversity in the North

BG

VA CK

— СТ

🗕 SG

🔶 SU

- ZB – DN NE

OD

73

82





Number of Taxa/Species



ZHAS

SG

30°

47

46°

45°

44°

43°

42°

41°

28°





Macrozoobenthic species distribution in the NW Shelf





The Black Sea Ecosystem shows clear signs of recovery!!!



Drifter Exercise (2004-2005)



Drifters suddenly separated near Cape Kaliakra :

-2 drifters went to Bulgarian and Romanian waters

-the other 2 drifters moved to the Turkish waters





Concluding Remarks

- BSERP is finalising a 15-year GEF IW intervention
- The period of drastic changes
- Regional GEF Strategic partnership(s)
- Experience of BSERP is useful for other projects lessons learned
- The project has played a buffer and catalytic role
- Sustainability with GEF IW fading away



Materials used in this presentation

- Y. Volovik Presentation at the GEF Black Sea Danube Stocktaking meeting (Bucharest, 2004)
- Y. Volovik Presentation at a regional Pilot Monitoring Workshop and BSC meeting (Istanbul, 2004, 2006)
- V. Todorova Presentation at the 1st BSC International Scientific Conference (Istanbul, May 2006)
- L. Mee Presentation at the 4th BSERP Steering Committee Meeting (Istanbul, Apr 2004)
- W. Parr Presentation at the 6th BSERP Steering Committee Meeting (Istanbul, May 2006)
- W. Parr 'Trends In Nutrient Loads From The Danube River And Trophic Status Of The Black Sea', BSERP, 2006

"The great tragedy of Science - the slaying of a beautiful hypothesis by an ugly fact"

> Thomas H. Huxley (1825 - 1895)

Thanks you for your attention