

An Integrated Environmental/Socio-Economic Approach- A Design to Master the Black Sea Ecosystem Health

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The Black Sea ecological degradation has been a well-recognised environmental issue, the basin ranked among the most threatened water bodies in the World Ocean. Anthropogenic eutrophication, dramatic shift in biodiversity and communities structure, introduction of exotic species and over-fishing have been considered as key ecological problems. Alternatively the well being of the major part of the coastal population as well as traditional marine practices and tourism are directly related to the quality of Black Sea environment and the coastal zone. The health control of the basin as related to the complex knowledge of interactions between physical, chemical and biological fields as well as to socio-economic drivers impose the need for better understanding of ecosystem performances and developing strategies for crisis management and policies for sustainable development. An overview of the state of the art of the major Black Sea environmental problems is presented in the paper. The architecture of an integrated socio-economic-environmental approach is discussed, based on three main conceptions: similar to the field of human medicine the assessment and protection of the Black Sea Ecosystem health needs an adequate set of descriptors and indicator criteria for diagnosis and management; the EC Framework Directive on water resources as a main theoretical guideline; the recent indicator model for assessment of the ecological status of coastal marine ecosystems – Driving Forces/Pressure/State/Impact/Response (DPSIR), as the most appropriate way to structure environmental information applied by EEA. A description of the parameters of each box of the model is presented, the emphasis put on the set of pressure/state descriptors and indicators, interaction (cause-effect) patterns and feed-back modes. A “tool-box” of measures to provide feasible options for mitigation of negative impacts and co-ordinate efficient implementation of environmental rehabilitation measures, based on the synergy of environmental, economic and social solutions is designed, targeted to long-range sustainable perspective for the Black Sea coastal ecosystem.