

BLACK SEA FACING AN ECOLOGICAL DISASTER THE LEGAL FRAMEWORK FOR PROTECTION OF MARINE BIODIVERSITY

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Abstract: *The problems of an ecosystem degradation and biodiversity loss have been linked with factors such as eutrophication, chemical pollution, oil pollution, introduction of alien species and marine litter. In addition, wild species and their habitats have been under massive overexploitation. The pollution of the environment and the loss of biodiversity are alarming problems especially in the light of turning the Black Sea into an important transport venue for oil and gas. A conclusion is reached that the unique biodiversity of the Black Sea could be saved through an efficient legal and institutional framework which could be achieved mainly by active participation of the Black Sea coastal states in the existing universal legal instruments, by joining some new conventions and closing the existing gaps in the regional sea governance structure.*

Key words: Sea, Governance, Biodiversity, Politics, Conservation

Introduction

The Black Sea was connected to the Mediterranean after the opening of the Dardanelles some 100 000-150 000 years ago. It was then isolated and about 6 000 years ago reconnected to the Sea of Marmara and the Mediterranean Sea (Zaitsev, Mamaev, 1997). The prolific nature of the Black Sea ecosystem was first discovered by ancient Greek authors such as Herodotus (V Century BC), Ptolemaious (II Century BC) and others who revealed of the innumerable Black Sea stocks of salmon, tuna, sturgeon and mullet in the Black Sea. The history of the coastal settlements of Bulgarians, Greeks, Georgians, Russians, Tartars, Turks has continued for almost 3 000 years. Unfortunately, the fish stock situation in the Black Sea nowadays is quite different from the one described by Herodotus. A number of negative trends (Penchev, 1988) have been recently noticed. In general, dynamic and intensive use of the sea for economic and military purposes increases the dangers for the ecological balance of the marine environment.

Sustainable marine biodiversity contributes substantially to a number of areas of modern life. It supports air quality, water purification, climate and prevention of erosion. Non-material benefits include aesthetic values, recreation and knowledge systems. The role of legal and political instruments in the safeguarding the biodiversity in the Black Sea is indispensable. Along with these instruments, civil society and the respective sociological techniques play an important role in identifying the various important national and regional factors attached to biodiversity.

The Black Sea ecosystem and reasons for its degradation and biodiversity loss

The Black Sea, the world's most isolated sea is bordered by Russia and Ukraine to the north, Turkey to the south, Georgia to the east and the European Union (Bulgaria and Romania) to the west. The Black Sea has a much specialised marine ecosystem based on a number of reasons. Above all, one phenomenon deserves to be underlined, namely the fact that freshwater from the northern rivers (Danube, Dnieper, Dniester) floats on top and the salt water coming from the Mediterranean plunges to the bottom. The active inflow of nutrients by rivers results in the growth of phytoplankton, so the coastal waters of the Black Sea usually have a greenish colour. With rivers providing an abundant supply of fresh water, the upper layers of the Black Sea are less dense than its saltier lower layers. A permanent boundary between the two prevents any vertical mixing. The oxygen, derived from the atmosphere and photosynthesis, remains restricted to these surface waters. However, this precious gas is essential to the development of the majority of living species. Recent research has shown that this toxic boundary shoaled from 140 to 90 metres between 1955 and 2015 (Capet, Stanev, Becker's, Murray, Grégoire, 2016). This feature combined with the shallowness of the connecting channels with the Mediterranean makes the Black Sea a stagnant marine area.

The Black Sea and its contiguous waters are used for shipping, fishing, aquaculture, mineral exploitation, tourism, recreation, military exercises and for liquid and solid waste disposal. In addition, the seabed and the catchment area are under permanent pressure from other human activities, including urban development, industry, and agriculture. Agriculture especially is the main contributor to water degradation in the Danube Basin, as the main tributary of the Black Sea, through the improper use of fertilizers and pesticides, and leakage of liquid waste from farms. It has been estimated that the six coastal countries contribute about 70% of the total amount of nutrients flowing to the Black Sea as waste from human activities. Some of this amount and nearly all of the remaining 30% (from the countries with no direct access to the sea) enter the Black Sea through the Danube River (<http://web.worldbank.org/archive/website00225B/WEB/OTHER/ENVIRONM.HTM?OpenDocument>).

It is widely recognised that pollution could be caused mainly by eutrophication, chemical pollution, oil pollution and marine litter. The consequences of eutrophication are undesirable if they appreciably degrade ecosystem health and/or the sustainable provision of goods and services. These changes may occur as a result of natural or anthropogenic processes. Chemical pollution in the Black Sea is caused by human activities in marine and land-based areas. These activities include shipping/harbour operations, agriculture, industrial interventions and municipal discharges. Concentrations of most toxicants (heavy metals, pesticides, radionuclides) are typically greater in sediments than in water. Dumping of wastes, especially persistent organic pollutants, directly into the Black Sea, whether legally or illegally is a continuing problem in some countries. A serious problem relates to the oil pollution in the Black Sea. Oil enters into the marine environment from various sources such as shipping traffic, oil production, pipeline breaks, illegal discharge of tanker ballast water, tanker accident, incompletely burned fuel, automobile exhausted gas, wood-burning etc. Alien species have been introduced to the Black Sea by ships from other parts of the planet and have become predators to the indigenous marine environment. Marine litter is a

global issue of concern which is solely caused by human activities. Climate change leads to a number of environmental threats which include temperature change and sea level rise.

The international legal and institutional framework

The international legal and institutional framework plays an indispensable part in the protection of the Black System and protection of biodiversity (Oral, 2012). It consists of universal legal instruments, specific conventions of the International Maritime Organisation (IMO), Black Sea governance system and European legislative and policy measures. The river-born pollution and its effect on the biodiversity in the Black Sea provides an excellent additional opportunity for an analysis of the two different respective families of the legal regimes, pertinent to marine pollution and biodiversity via trans boundary watercourses (Vinogradov, 2007). Six intergovernmental conventions are at the centre of the general protection of the Black Sea biodiversity: the Convention on Wetlands of International Importance Especially as Waterfowl Habitat of 1971, the UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage of 1972, the Convention on International Trade in Endangered Species of Wild Fauna and Flora of 1973, the Convention on the Conservation of Migratory Species of Wild Animals of 1979, the Convention on Biological Diversity of 1992 and the International Treaty on Plant Genetic Resources for Food and Agriculture of 2004.

The United Nations Law of the Sea Convention (LOSC) has been recognised as a legal instrument which has made a significant contribution to the protection of the marine environment. Of particular relevance to the question of biodiversity is the analysis of the conservation and management of natural resources within exclusive economic zones as established by Part V of the LOSC. The IMO has authored most of the basic conventions, regulations and guidelines for protection of the marine environment from vessel-source pollution. Of specific importance is International Convention for the Prevention of Pollution from Ships of 1973, Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter of 1972, International Convention for the Control and Management of Ships' Ballast Water and Sediments of 2004.

Black Sea regional governance system

The Black Sea regional governance system is based mainly on the Convention on the Protection of the Black Sea against Pollution of 1992 and its Protocols, memoranda and declarations. The provisions of the 1992 Black Sea Convention however are too general and have not included such increasingly attractive principles and concepts of modern environmental law, as the precautionary approach, the polluter-pays principle, use of "best available techniques", "best environmental practices", catchment (hydrological basin) management and ecosystem approach. In addition, many of the commitments undertaken under the Black Sea Convention have not been implemented yet. For instance, parties have not harmonized their laws and regulations to prevent, reduce and control pollution of the marine environment caused by or connected with activities on its continental shelf, as required under Art XI of the Black Sea Convention.

The Black Sea Commission and its Permanent Secretariat consolidate the regional activities on various types of marine pollution on the basis of the implementation of the 1992 Black Sea Convention and its Protocols, and the Strategic Action Plan for the Rehabilitation and Protection of the Black Sea. The Black Sea Commission ensures the basis for efficient

marine monitoring via an Integrated Monitoring and Assessment Programme for the Black Sea region (BSIMAP) and all the Black Sea countries have national monitoring programmes but only some of them are in line with the full objectives of BSIMAP. Some legal gaps in the governance structure of the Black Sea could be identified as follows: no legally binding document for fisheries and conservation of living resources in the Black Sea; no Integrated Coastal Zone Management Protocol or other legal instrument in that area; no regional instrument for marine protected areas; no regional legal instrument and initiatives to deal with introduction of harmful invasive/alien species.

European legislative and policy measures

The Black Sea coastal states have varying status vis-à-vis the European Union (EU). Bulgaria and Romania are member States, Turkey is a pre-accession country and Ukraine and Georgia are involved in the European Neighbourhood Policy. The EU-Russian relationship is based on a Partnership and Cooperation Agreement. The European Community has been a party to the Convention on Biological Diversity since 1993. In 2003 it became party to the Cartagena Protocol on Biosafety. The EU is a party to Europe's Regional Sea Conventions such as OSPAR (North East Atlantic), the Helsinki Convention (Baltic Sea) and the Barcelona Convention (Mediterranean Sea). Several regional organisations and initiatives with the participation of the EU are currently well on track in the region. The EU environmental policy aims to achieve sustainability by including environmental protection in EU sectoral policies, preventive measures, the "polluter pays" principle, combating environmental pollution at source, and shared responsibility.

Summary and Conclusions

The Black Sea has a rich and unique biodiversity resulting from its semi-enclosed geography and confluence of several major rivers. Until recent times, this biodiversity underpinned a highly productive ecosystem that provided, among other benefits, abundant fishery resources. Wild species and their habitats have been under massive human threat. The human impact on the Black Sea biodiversity is consequently rapidly growing, including transformation of natural shore areas for resorts/recreation areas and pollution due to shipping of oil. Effective measures for the conservation of natural resources are now urgent.

There is a need for the development of, and improvement in, the existing monitoring and reporting system used for contaminants in the Black Sea. An improvement should provide comparable data sets for pollutant loads (from direct discharges and river inputs) and for other parameters. The acceptance of standardized methods by all countries is also an important issue which needs to be addressed as well as funding for suitable equipment and staffing. Operational national quality assurance programmes for the inter-comparison/inter calibration of chemical concentration and flow data from point sources is also needed. Given the specific features of the Black Sea and especially the fact that the Danube River appears to be the principal source of land-based marine pollution, the efforts of the coastal states should be harmonized with those non-coastal states that belong to the Danube River and other inflowing trans boundary rivers. The unique biological diversity of the Black Sea could be saved through an efficient legal and institutional framework. The existence of two different legal regimes of the Black Sea biodiversity and marine pollution from Trans boundary watercourses raises the question of their compatibility and practical effectiveness.

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