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INTERNATIONAL COLLABORATION FOR THE BLACK SEA PROTECTION AND SUSTAINABLE MANAGEMENT

Summary. The article discusses the problems of ecological and resources transformations in the Black Sea basin. The efforts of international community must be consolidated to protect and save the Black Sea ecosystem. International Projects are considered to be an effective tool for solving this problem.

Key words: environmental problems, transboundary pollution, international collaboration, international projects

INTRODUCTION

The Black Sea is a unique water body, almost completely isolated from the world oceans. Its most depth is 2212 m, while its catchment area covers over 2 mln km². The only connection to the world oceans is through the Bosphorus Straits, a narrow 35-kilometer channel, only 40 m deep in places. The Kerch Straits in the north provides the connection with the smaller Azov Sea. The Black Sea has six countries surrounding it. About 16 million people inhabit the coastal area [1].

The rapid growth of economic activity in the black Sea region, which had for long time an uncontrolled and unregulated character, caused great problems for the Black Sea ecosystems. Since the main polluters often have a transboundary origin, the efforts of both six coastal states and the states of the catchment area need to be put together to save and protect the Black Sea. The aim of the article is to outline the main problems of the Black Sea and international collaboration in the sphere of the basin protection.

RESULTS

The main Black Sea problems. The Black Sea is the bigger semiclosed and anaerobic basin in the world. It accepts flows of big rivers (till 265 km³ per year) which contain big quantities of inorganic nutritious substances and extensively influence the basin.

At the duration of recent decades the substances imported by rivers and from industrial and domestic waste have caused dramatic changes in all the

levels of Black Sea ecosystem:

a) Decrease of fishery: The sardine, eg, from 600.000 tons (1984), decreased to 300.000 tons (2007), while disappeared itself the mackerel and the swordfish. Particularly in the Danube mouth the fishery decreased is dramatic.

b) Euthophication: Euthophication is caused by big quantities of organic and chemical nutritious (nitric-phosphate from fertilizers but also from the detergents). Annual quantity of phosphorus reaching the Black Sea is 51.726 tons/ year (42.601 tons (83%) – from rivers and 8.675 tons from the land sources). Total amount of nitrogen from 391,864 tons/ year (246.896 tons (62%) are transported by the rivers). Near to Odessa, in the estuary of Danube the algae concentration of 1kg/ m³ makes impossible the infiltration of light in the 90% of aquatic volume, with result the necrosis of environment. In comparison we have 80 times more waste today in the Black Sea from that in the decade of '70.

c) Heavy Metals: The heavy metals Pb, Cd, Cu, Hg, etc, are located continuously in the sediment and many times in fish.

d) Pesticides: Their concentration particularly in the estuary of Dniiper is 10 times above the allowed limits.

e) Polyaromatic Hydrocarbons (PHA): With the rivers are transported above 70.000 tons/ year of PHA. Bigger accumulation is observed in the estuary of Danube.

f) Erosion: The coast of Black Sea continuously is decreasing due to extensive erosion (in certain cases the sea entered to the soil to 150-200 m). The tourism industry is losing about 800 million dollars and fishery - 500 million of dollars annually. The Romanian coast represents the 40% of total erosion of Black Sea coast [2, 3].

International collaboration for the Black Sea saving. The governments of the six Black Sea countries have reached common agreement on the necessity to take common preventive measures to insure sustainable use of the Black Sea resources.

The UN Conference on the Environment in Rio De Janeiro in 1992 marked the beginning of activities on the introduction of the sustainable development principle called Agenda 21. All countries of the Black Sea basin were actively involved in the process.

In 1993 at the request of the governments of the six Black Sea countries the Global Environment Facility (GEF) and the European Union established a fund of 9,3 million dollars which made possible the development of the Black Sea Environmental Programme.

The Transboundary Diagnostic Analysis prepared by the Programme became a basis of the regional strategic action plan. Many of the recommendations of the Strategic Action Plan are still to be accomplished.

In the period 2002 - 2008 a long term project entitled «Control on Eutrophication, Harmful Substances and Related Measures for the Restoration of the Black Sea Ecosystem» (Black Sea Ecosystem Recovery Project) was implemented by the Black Sea countries with support from the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP) within the framework of the new GEF initiative: Strategic Partnership for the Countries of the Danube and Black Sea Basin.

The Convention on the Protection of the Black Sea against Pollution, signed in Bucharest in 1992 (Bucharest Convention) and ratified by the six national assemblies, includes a general framework of agreement and four specific protocols: on the control of land-based sources of pollution, on the dumping of waste and on joint action in the case of accidents, such as oil spills; and on the protection of biodiversity and landscape. The implementation of the Convention is overseen by a Commission with a permanent Secretariat.

Meeting of the Contracting Parties to the Bucharest Convention in Kyiv, 2009 adopted and approved a number of important regulatory instruments (the Trans-boundary diagnostic Analysis 2007 and the updated Black Sea Strategic Action Plan) [4].

Since 2009 year has been realizing the International Project "Scientific Network of Black Sea" (Update Black Sea SCENE - UBSS). It comprises 51 participants (Organizations - Universities - Research Centers-NGO's) from the Black Sea and the European Union and supported from the EU in the frames of FP7 Projects. The project has the following aims [5]:

1. To enlarge the number of local data bases that will be made available for user access via the Black Sea SCENE infrastructure;
2. To expand the existing metadata bases with additional entries from new partners;

3. To assess the scientific data quality of the Black Sea partner's datasets, through screening (Quality Control) of all data sets, to be executed by each Black Sea partners;

4. To implement innovative data visualization and viewing techniques;

5. To prepare long term arrangements for sustaining the Black Sea SCENE network and the Black Sea distributed virtual data and information infrastructure;

The Black Sea SCENE research infrastructure stimulates scientific cooperation, exchange of knowledge and expertise, and strengthens the regional capacity and performance of marine environmental data and information management.

CONCLUSION

Pollution, loss of biodiversity and coastal degradation are identified as the major issues affecting the environmental state of the Black Sea. Since the main polluters often have a transboundary origin, the efforts of both six coastal states and the states of the catchment area need to be put together to save and protect the Black Sea.

The governments of the six Black Sea countries have reached common agreement on the necessity to take common preventive measures to insure sustainable use of the Black Sea resources. The international Project "Scientific Network of Black Sea" (Update Black Sea SCENE - UBSS) stimulates scientific cooperation, exchange of knowledge between experts of the Black Sea and the European countries.

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Воснякос Ф. Международное сотрудничество в решении экологических проблем Черного моря и обеспечении устойчивого управления ресурсами.

Аннотация. В статье рассматриваются проблемы ресурсно-экологических трансформаций в бассейне Черного моря и необходимость консолидации международных усилий для обеспечения устойчивого ресурсопользования. В качестве эффективного механизма для решения поставленной проблемы рассматривается реализация международных проектов.

Ключевые слова: экологические проблемы, трансграничное загрязнение, международное сотрудничество, международные проекты.

Воснякос Ф. Міжнародне співробітництво у вирішенні екологічних проблем Чорного моря та забезпеченні сталого управління ресурсами.

Анотація. У статті розглядаються проблеми ресурсно-екологічних трансформацій у басейні Чорного моря та необхідність консолідації міжнародних зусиль для забезпечення сталого ресурсокористування. В якості ефективного механізму для вирішення поставленої проблеми розглядається реалізація міжнародних проектів.

Ключові слова: екологічні проблеми, транскордонне забруднення, міжнародне співробітництво, міжнародні проекти.