

## V. ENVIRONMENTAL MANAGEMENT OF FISH RESOURCES IN THE BLACK SEA AND THEIR RATIONAL EXPLOITATION

The results of Black Sea fish stock assessments conducted over the past 25-45 years were juxtaposed with more than 40 factors revealing the changes that have occurred in the environment. As a result a number of regularities permitting the elaboration of a fishery strategy were established, with a view to sustainable utilisation of fish resources.

As it is well known, the problem of redressing the ecological balance in the basin lies at the root of all national and international programs and conventions: e.g., the "Convention on the protection of the Black Sea against pollution" (1992); "Government declaration" (Odessa, 1993); GEF; NATO TU-Black Sea; EROS-2000; Co-operative Marine Science Programme; CoMSBlack; Delta Danube Programme; GEF Danube River Basin, etc.

For solving the problems of fishery management, a Joint Fishery Commission was founded which has to plan concrete measures for rational exploitation of Black Sea fish resources.

A large number of obstacles arose during the development of the project "ENVIRONMENTAL MANAGEMENT OF FISH RESOURCES IN THE BLACK SEA AND THEIR RATIONAL EXPLOITATION". In our opinion, the representatives of the Black Sea countries in the mentioned Commission will also be faced with most of them. For this reason when specifying their particular action plans they ought to address the following problems:

- Standardize the values of population parameters (catch age composition, age of sex maturation, definite age, etc.) of the commercially valuable fish species. We consider it of high priority to prepare appropriate manuals for fish ageing aiming at standardizing the results of biological research. In order to use the historical data of every country, size-age keys are required for the particular fish species.
- Renovation of statistical data collection for the catch amounts and the fishing effort applied (by countries and fleets).
- Standardizing the methods of fish stock assessments in relation to the available biological and fishery information for the different fish species.

At present there is a large amount of data being collected at national levels. However, although national trends are analysed, detailed and theoretically substantiated analysis of regional data will further be impeded unless the mentioned above deficiencies are not surmounted. Furthermore, the available scientific information is interrupted by a lack of biological and fishery data for certain periods pointed to in the report. In the last 5-6 post-communist years after the transition to market economics was attempted, there has been a lack of good fishery statistics. These have to be considerably improved, especially in the former socialist countries and the data set expanded to include fishing effort. Information that was difficult to obtain has to be supplied where possible. For this reason, the coordination between the research Institutes and the corresponding State Institutions responsible for management and control of the biological resources, has to be improved. All this would facilitate further more an ecosystem approach to fish resources management.

According to our investigations the fish stock depletion in the Black Sea is due to the complex influence of various factors, dominant among them being overexploitation and the outburst of the new ctenophore *Mnemiopsis leidyi*, the latter having changed to a great extent the trophic interrelationships between the organisms in the Black Sea ecosystem. All this necessitates the applying of new approaches when suggesting the annual catches by species, and requires an account of the current state of the environment. In this connection, the Joint Fishery Commission ought to solve the following important problems:

**1. Migrating fish**

- 1.1 Apportionment of the annual quotas by countries.
- 1.2 Determination of regulatory measures for the different fish species and International control and surveillance of fishing by all Black Sea countries.

**2. Anadromous fish**

- 2.1 Apportionment of the annual quotas by countries
- 2.2 Determination of the regulatory measures for the different fish species.

Solving of all these problems probably will need to be carried out in conformity with international maritime law (The Law of the Sea, The Regime for High-Seas Fisheries (Status and Prospects, United Nations - New York, 1992), but in all cases the good will of all Black Sea States will be needed for the more rapid and effective protection of the fish populations in the basin. This concerns to the same degree the remaining intergovernmental conventions, especially that relating to the protection of Black Sea against pollution. Only by the common efforts of all Black Sea States, as well as of those from the Danube Basin, will the preservation of species' biodiversity for the fish population and their sustainable utilisation by the commercial fishery be possible.