Draft minutes

Regional meeting of specialists in stock assessment by scientific surveys *30 April – 03 May 2012*

The meeting was held with the active participation of the scientists from the Black Sea coastal countries, with consultancy from STECF/GFCM in Varna, Bulgaria, organised and related to the activities of IO- BAS:

- establishing the most reliable methods for stock assessment;
- data and necessary equipments;
- methods for data collection;
- establishment of research surveys and the periodicity of meetings for common assessment of stocks;
- realization by IOBAS of a best-practice guideline and protocol which include the sampling gears (feature and handling), the design of the survey, the information collected, the management of the data as far as the common standard analysis of the data, all used for assessing the condition of stocks in the Black Sea.

The course included several issues, starting from the basic concepts on fish stocks and fisheries, passing through data needed for understanding life features and finally by the knowledge of the effects of fishing on stock dynamics.
A special attention was paid to the models useful for describing the fish population dynamics (both biomass dynamic models and structural/analytical models). This includes the recruitment process and a brief description of the more widely used stock-Recruitment models.
Attendees practiced on the performance of short, medium and long-term projections of population and catch starting from the information derived from both Production and structural Models.
The main concepts on Fisheries Management, including the definition of reference points, management control rules and types of fisheries management measures as input control, output control and technical measures will be addressed. It is supposed that attendees have access to the 2 main sources of data: those proceeding from direct methods (scientific surveys) and those fisheries dependent. For each issue, the type of data and the feasibility of utilization of each approach depending on the quality of available data will be illustrated.

Schedule of activities

Date	Activity
30/04/2012	Lecture on Stock Assessment. Processes of collecting, analysing, and reporting fisheries and biological information. Dynamics of a unexploited and exploited populations. Estimation of life history data including growth rates, age of sexual maturity, longevity. Stock-Recruitment relationships. Source of data and main models. Exercises with NOOA software and Excel spreadsheets Collection of data on the size of a fish population with different data sources, estimates of biomass, mortality

	rates, the removals due to fishing. Exercises with available software FISAT, SURBA
1/05/1012	Lecture on yield-per-recruit analysis. Analysis of the contribution of a cohort to the stock along its life. Evaluation of the contribution of survival and growth between consecutive ages. Determination of the maximum yield by finding the balance between natural mortality and individual growth. Assessment of the impact on yield by changing exploitation pattern and/or fishing mortality rates. Exercises of yield per recruit with electronic spreadsheets and training on the use of software Yield (FAO package) and stock assessment toolbox of NOAA.
2/05/2012	Lecture on length cohort analysis. General description of models for the retrospective analysis of the demographic structure of the commercial catches. Training on the use of length based cohort analysis with software VIT and with an Excel spreadsheet. Lecture on Production models. Concept of equilibrium. The model of population growth. The concept of surplus production. Description of variants, using Biomass. Use of data of fishing effort in order to define the yield likely to be produced at different levels of exploitation.
3/05/2012	Alternative use of data proceeding for fishery-independent sources. Exercises in Excel electronic spreadsheets and training on the use of the FAO software, ASPIC (NOAA) and with electronic spreadsheets. Lecture on Fisheries management and Reference Points. Definition of Target and Limit reference points. The FAO Code of Conduct for responsible Fisheries. The concept of Sustainable Yield. Use of biological reference points as a metric of the stock status from a biological perspective. Biomass based and mortality based Reference Points. Use of software and spreadsheets for estimating values for different RPs.
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