FOREWORD

During the last decade, the need for a rationalization of the fishery management systems in the Mediterranean has been emphasized in several forums. In the European Union, this concern was particularly expressed during the Diplomatic conferences on fishery management in Crete (1994) and Venice (1996). The requirements clearly reflected the orientations of international conventions such as the Convention on Biodiversity (1995), the Code of Conduct for Responsible Fishery (FAO, 1995) and the Convention of Barcelona (1995) which underlined the need for the implementation of fishery management towards the objective of sustainable fisheries exploitation integrating ecosystem approaches.

In this context, the paradigms for fishery research have been strongly updated. One of the main objectives of this research is focused on description, understanding and monitoring the biological systems under the effects of fishery, natural variations and other human activities. From the new paradigms, various approaches may be taken into consideration notably under the following topics: biodiversity, relationship with hydro-climate, biomass dispersion, food webs, and essential habitats. In any case, the validity of scientific studies conducted to progress towards these outlooks strongly depends on the generalization of the approaches and the continuity in the observation systems.

In the Mediterranean area, the coastal economy is firmly related to the sea. The fishery industry is very diversified and scattered, especially for the demersal and benthic species that form about 55% of the total catch, and usually much more in value. For most of these resources, the general trend, worsened by fishing power increase, is going toward overfishing. In some areas, this situation is illustrated by a tendency to fish size reduction and high fishing pressure on juveniles.

In the past, most of the demersal resources were assessed and managed at local scale, according to the limits of exploitation units. Only in some areas, and since the 1980s, specific programmes were devoted to observation of these resources from standardized trawl surveys. Nevertheless, most of the assessments were still done using information gathered from fishing activity, according to local conditions and opportunities. Hence, it was very difficult to draw a global view of the state of these resources. There was a necessity to encourage common research so as to take a full advantage of the tremendous research activity spread out in a large number of institutes and laboratories all along the Mediterranean coast.

The instigation from the European Commission (Directorate for Fisheries, 1993) who wished for a common bottom trawl survey to support the Common Fishery Policy in the Mediterranean gave a fantastic opportunity to progress towards the development of a standardized observation network on demersal resources in this area. The request was strictly assigned to the assessment of species exploited by bottom trawlers with the aim to produce scientifically validated advice for fishing regulation. So far, the MEDITS programme (International bottom trawl survey in the Mediterranean) has been clearly oriented towards this objective since its beginning in 1994. It was designed to contribute directly to the Fisheries monitoring system in the Mediterranean by organizing periodic large scale bottom trawl surveys, and producing assessments of the demersal resources to serve as references for their sustainable management.

At the start, the priority of the survey programme was to elaborate and build a common data bank on the trawlable exploited species, independently of the data obtained from the exploitation systems. Then the intention was to contribute to the assessment of the demersal species by characterisation of their distribution, abundance and demographic features. By repetition of the surveys over time, it was proposed to build year-after-year indicators on trends concerning these resources. Furthermore, it was considered that given the enlargement of the surveys to target a wider range of species than the ones presently exploited, the data collected in this series of trawl surveys might favour studies on relationships between fishery and ecosystem. Hence, the MEDITS programme intended to contribute to the reduction of data deficiency often highlighted in the area, and to the development of scientific collaborations with a view to improve assessments of the demersal resources as well as the exploited ecosystems.

During the first few years (1994-1996), the programme was mainly devoted to set down the foundations for the common database and its enlargement in the Adriatic. Urgently, the interest for a full valorization of the data and spreading of the results was strengthened. A first international symposium in Pisa (Italy) in 1998 constituted a first milestone in that direction. During the years 2000 and 2001, an improvement in the estimates of abundance and population parameters of a large amount of target species was carried out through the European funded project SAMED (Stock assessment in the Mediterranean). The present volume intends to reach a new level with this purpose.

After an introductory chapter presenting the common objectives and methodology, two main sections constitute the core of this volume. The bulk of the book is formed by a series of directed papers intending to provide an overall view of the distribution patterns, abundance and population characteristics of the main target species for the Mediterranean trawl fishery throughout the study geographical range. Then, different approaches contributing to build biological and ecological knowledge on these resources are presented. The volume is completed by a series of useful appendixes, such as the list of all previously published references using MEDITS data, totally or partially, or generated by the MEDITS surveys.

In many cases, the MEDITS series is still too short for identifying consistent time trends in abundance of the demersal resources in the Mediterranean. Nevertheless, for the first time, it has given much new information on the distribution of these species at a large scale in the basin. It is for this reason why the first priority for research inside the MEDITS programme was to describe the present status of the species, including the distribution of their nurseries.

The global descriptions presented in the volume show that the main related characteristic is the very high diversity of situations among the species and the areas. Some species present very high variations in space-time distribution and abundance. For most of them, the strongest relationships are identified between spatial distribution and bathymetry. Furthermore, a longitudinal trend from the western to the eastern basins is often described, with the highest values in one or the other basin, depending of the species and parameter.

The wide diversity of distribution patterns among species raises the question on the definition of limits for biogeographical units in the Mediterranean. To try to solve this problem, different approaches have been proposed from species assemblage analyses during the symposium in Pisa and in this volume. They are a first step before application at the full MEDITS scale.

Differences in demographic structures may be due to variations in exploitation patterns and hydrological and ecological conditions. In some situations, the sampling scheme may amplify the effects of these factors due to the seasonal nature of biological parameters (*e.g.* full survey timing according to local moments of species recruitment). It will be necessary to strengthen the characterization and quantification of relationships between the observed demographic structures and their environment, including fishing activity. Different approaches to solve this question were proposed in Pisa and in this volume. The perspectives are huge, and we may anticipate a lot of promising research as well as work about monitoring reinforcement. Indeed, as the MEDITS surveys constitute the first large scale network for monitoring the living resources in the Mediterranean, we may anticipate that it should also offer in the future, a useful support for

enlargement towards a more integrated ecosystem approach.

Establishing the database has mobilized competency and willingness of a large number of scientists in the involved countries. All the partners should be warmly thanked for their collaboration. Actually, it is they who have built the databank which presently contains almost 213,000 recordings of species abundance at about 1,100 stations distributed in the northern part of the Mediterranean basin from the Alboran Sea to the Aegean Sea (an area of more than 516,000 km?), and studied in the course of eight yearly surveys. Their activity has been made possible thanks to the full support and encouragement of the European Commission (Directorate for Fisheries), all the countries and institutes involved in the programme, and other organizations such as COPEMED, whose contribution was completely decisive for enlargement of the programme in the south.

The Scientific, Technical and Economic Committee for Fisheries (STECF-EU, February 2000) has set the MEDITS survey in the highest priority group of survey data to be collected for monitoring the fisheries of the European Union referring to the Council Regulation establishing the Community programmes for the collection of data in the fisheries sector. Activity inside MEDITS has been guided by the quest for high quality data, owing to a high level of international collaboration, and the scientific progress these data allow concerning the state of the demersal resources and ecology in the Mediterranean, and their usefulness for improving fishery management. We hope that the results will incite further support for the continuation of the data series and development of research activity in this field.

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