

EU/MAST-MATER database 1996-1999: a reference database of high quality multidisciplinary data collected within the framework of a major international research project, in the Mediterranean Sea

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The EU/MAST-MATER Project (Mass Transfer and Ecosystem Response) has been a major multidisciplinary research effort carried out within the framework of the Marine Sciences and Technology (MAST) Programme of the European Union, during the period 1996-1999. The overall objective of this project was an integrated approach to the entire Mediterranean basin, in its physical, sedimentological, chemical and biological aspects, to study and quantify transfer processes of mass (water, particles, natural and anthropogenic, stable and radioactive elements) and energy between the different compartments (land-sea, sea-atmosphere, upper-deep waters, water-sediment, living-nonliving, pelagos-benthos) in contrasting environments (from eutrophic to oligotrophic), for the examination of the complex interplay of natural processes that operate on a broad spectrum of spatial and temporal scales leading access to the variability of ocean systems. Fifty-four institutions from 11 European countries participated in the project (Belgium, Denmark, France, Germany, Greece, Italy, Norway, Spain, Switzerland, The Netherlands, and United Kingdom) as well as Morocco and Tunisia, corresponding, on the whole, with more than 330 researchers and technicians. During the project implementation, a total of 108 oceanographic cruises (representing more than 1000 days of ship time) were carried out by 12 research vessels and about 254 main scientific equipments were used. This resulted into the collection of a data set consisting of a large amount of a great diversity of various measured parameters.

To achieve a harmonized data management, within the EU/MAST-MATER Project, the "code on data management" issued by EU/MAST was adopted. Due to the large number of research teams participating in the project, it was necessary not only to get and circulate the meta-data and the data, but also to check the coherence and the compatibility of the different data sets and to prepare a final integrated data product. This has been made possible by developing a qualified data management structure, a common protocol (was based on the IOC/ICES and MAST manuals and guidelines) for data formatting and checking and, finally, appropriate software tools to insure timely and standardised implementation of the data management tasks.

The Data Management structure consisted of a Data Manager, with a «Data quality» group and three regional archiving centres, operating in the three sub-basins. To ensure the data management tasks in a timely and practical way, the data centres operated in two ways:

The basic data of physics and bio-chemistry have been formatted at the common MEDATLAS format and full quality control checks have been performed, to insure coherence and compatibility between the different data sets provided by the different laboratories.

The specific data collected in the atmosphere, sediment and biota, were in general, not reformatted at the exchange format, but archived at the original source format of the scientific file. Quality control limited to date and position availability has been made on these data, in addition to the validation made at the source laboratory.

The result is a large data set of recent and high quality data, which can be used not only for the project itself, but also for further studies, including the qualification of new and historical data. To facilitate data dissemination and their use by non-specialists, a data product on CD-ROM was prepared with simple and user friendly software tools for data retrieval and visualisation. A www site was also developed (www.ifremer.fr/sismer/program/mater).