

Pollution Problems in the Mediterranean and Relevant Research Priorities

Y. HALIM

Faculty of Science - Moharram Bay, Alexandria (Egypt)

ABSTRACT

Concern among the scientific community about the deterioration of local Mediterranean environments since the early 1960s induced FAO and ICSEM to convene a series of international conferences which stimulated pollution research in the Mediterranean. Attention appears to have been focussed at first on the impacts of urban effluents, radioactive, oil and thermal pollution and, later, on trace metals and synthetic organics.

Soon, numerous pollution research projects, either national, bilateral or sponsored by the EEC or UN Agencies were initiated in several parts of the Mediterranean. Some examples are:

- ASCOP, the Italian-Yugoslav Cooperative Project in the Adriatic Sea,
- EROS, the Project on the European River Ocean System,
- MAST, the Marine Science and Technology Programme, (the latter two EEC sponsored)
- POEM, the Physical Oceanography of the East Mediterranean, and
- FRIMO, the International Research Programme in the Western Mediterranean sponsored by IOC and ICSEM.

Coordination between these numerous research efforts is still lacking. A recent World Bank initiative in the Mediterranean is directed at management and protective measures. The MED POL Programme launched by UNEP in 1975 remains the only co-ordinated research and monitoring programme encompassing all Mediterranean countries.

In spite of many limitations, the Pilot phase of this programme developed the infrastructure, induced baseline pollution research and laid the ground for Phase II.

Phase II encompassed twelve research activities and maintained an assistance component, but no order of priority was assigned to the research areas. Substantial scientific information has been generated on epidemiological hazards, toxicity and bioaccumulation of selected substances, eutrophication and abnormal plankton blooms, ecosystem modifications and on the biogeochemical cycle of specific pollutants. The quality and relevance of the data, however, are uneven and the geographical coverage inadequate. Some programme readjustments are needed for the coming MED POL Phase. They should aim at the selection of a smaller number of priority research areas, the quality assurance of the data and a better geographical coverage. The choice of priority areas should obey certain basic criteria:

- (a) the geographical-scale: Mediterranean-wide problems should be addressed in priority;
- (b) the time-scale: longer time-series are required to differentiate background trends from slow anthropogenic changes;
- (c) the scientific data-base: a multidisciplinary data-base on the coastal oceanographic processes should be developed;
- (d) the socio-economic pressure: the assessment of the inevitable consequences of the anticipated demographic stress on Mediterranean ecosystems is one of the first priorities;
- (e) the implementation of the Protocols and their Annexes: research should aim at the continuous improvement of the Annexes by updating them or proposing amendments as appropriate.

Taking in consideration the recommendations of Mediterranean scientists, the past experience of MED POL and the conclusions of GESAMP on the State of the Marine Environment, six priority research areas are proposed:

1. The comparative study of a specific Mediterranean and basin-wide ecosystem, the Posidonia community.
2. Eutrophication, long-term nutrient build-up and the dynamics of abnormal plankton blooms.
3. The impacts of anticipated global climate change and the development of Mediterranean models.
4. The coastal oceanographic processes, fluxes and biogeochemical cycles.
5. The air-borne fluxes of pollutants in the Mediterranean basin.
6. The consequences of present and anticipated coastal and inland developments and the resulting irreversible damages to the coastal zone.

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