



## **Field Monitoring and Environmental Assessment**

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The three year COLASU project launched on July 1st 2002, succeeded in carrying out a thorough study on two lagoons in North Africa. The Nador lagoon in Morocco, the second largest lagoon of northern Africa, and El Meleh, a small coastal lagoon located near the town of Slimene in Tunisia.

The first step of the research was focused on understanding the present state of the lagoons by conducting major sampling campaigns to collect data on soils, sediments and water which led to maps showing the present pollution distribution in the lagoons. The project built a database of regional maps, using Geographic Information Systems, as a spatial analytical tool, to contribute towards the analysis and interpretation of the human impact on the lagoon environment at the catchment scale.

To gain further insight into the direct effect of human activities on the lagoon, the water treatment stations of Nador and Slimene, and the Marost aquaculture concern in Nador lagoon were chosen for the application of the Life Cycle Assessment (LCA). This tool is used to assess the environmental impact of a system from the production of raw materials to the disposal of the final waste products (ISO 14040). Further research into the possible linking of the two decision-making tools, i.e. coupling the LCA with GIS, led to a new innovative approach, whereby the system under investigation is not an industrial process but an ecosystem. This novel approach was tested by assessing the impact factors on the eutrophication potential in both lagoons.

The relevant stakeholders and endusers were involved throughout every step of the project by informative letters and seminars, and at the end of three years are being given a series of practical recommendations for sustainable lagoon management.

Specific recommendations in the form of technical cards are drawn with regard to wastewater treatment and aquaculture. Broader 'good practice' recommendations, aimed at stakeholders concerned with the overall management of coastal zones, include a description of the harmful effects of heavy metals on human health.

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