

MARINE SCIENCE

In Mexico, marine science is primarily the responsibility of university research centres. The most important research centre is the *Instituto de Ciencias del Mar y Limnología (ICML)*, Institute of Marine Science and Limnology, at the *Universidad Nacional Autónoma de México (UNAM)*, National Autonomous University of Mexico. Others include facilities at the Mexican Society for the Study of Marine Mammals, and the Research Center of Quintana Roo.

These facilities are almost entirely government-financed and notoriously underfunded. There are only about 400 oceanographers in all of Mexico's universities, to cover 11,000 kilometres of coastline on two oceans. There are large technological gaps and much of the equipment in use needs upgrading.

The dependence on public financing, combined with the concentration of marine science at the universities, has led to an academic focus, with little pragmatic research. The *ICML's* activities are mostly educational. Scientists from this research centre predict that if the present situation continues, there will be even greater insufficiencies and technological needs. The little practical scientific research that has been done has focused primarily on environmental issues. This situation creates substantial opportunities for private consultants who can obtain funding for research work from private or international sources.

OCEAN ENVIRONMENTAL PROTECTION AND REMEDIATION

Mexico's coastal environment is seriously contaminated. Pollution comes from the discharge of industrial and municipal waste and from agricultural run-off. Spills from offshore oil and gas operations and boats are also a serious problem. Stocks of marine animals are not efficiently managed. These problems have remained uncontrolled, partly because of a lack of appropriate technology and partly because of gaps in the regulatory system.

The *Secretaría de Marina Armada de México (SMAM)*, Mexican Navy, is responsible for protecting marine resources and monitoring environmental impacts, in addition to its mandate to defend against intruders and apprehend drug traffickers. The *SMAM* has an ecological protection plan that includes warning the national environmental authorities about potential problems. The program includes watch-dog functions such as environmental monitoring and surveillance, as well as remediation activities. The *SMAM* is also active in conducting awareness-raising conferences and coordinating the activities of various levels of government.