NEW STUDIES WILL ASSESS IMPACTS OF MARINE MINING

The Benguela Current Large Marine Ecosystem (BCLME) Programme is to fund a number of studies that will examine the cumulative effects that offshore petroleum extraction and marine diamond mining have on the marine environment of the Benguela region.

The BCLME Programme is a joint initiative by the governments of Angola, Namibia and South Africa to manage and utilise the resources of the Benguela Current Large Marine Ecosystem in a sustainable and integrated manner. It is funded by the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP), contributions by the three member countries.

In 2004 the BCLME Programme will fund eight studies, worth an estimated US $737 000 (R4.8 million), in the fields of biodiversity, ecosystem health and pollution. Four of the studies will focus on the environmental impacts of marine mining and petroleum extraction. These studies will complement the studies on marine living resources and environmental variability that have already been initiated by the BCLME Programme.

The extent of marine mining

Marine diamond mining is undertaken along the west coasts of South Africa and Namibia, and all three countries in the Benguela region are involved in petroleum exploration and production. Although a number of impact assessment studies have been conducted, little is known about the collective effect that marine mining operations have on the marine environment over a long period of time.

Similarly, insufficient knowledge exists with respect to the cumulative impacts of petroleum exploration and production activities in the BCLME, particularly in Angolan waters.

Extensive offshore petroleum production activities take place in Angola's northern provinces of Cabinda and Zaire, and intensive drilling is taking place on the continental slope between Cabinda and Luanda. It is not unrealistic to expect that several hundred wells will be drilled in the next decade.

Environmental concerns

There are two consequences of these activities that concern the management of the Benguela Current Large Marine Ecosystem, namely the effect that the discharge of drilling mud and cuttings has on benthic organisms such as crabs, shrimps and marine worms; and the effect that the discharge of toxic production water from offshore platforms has on marine life, particularly plankton, fish eggs and larvae.

A third, indirect effect is that of exclusion of fishing activities in buffer areas around each rig or pipeline. This could be beneficial for fish populations, as long as pollution or disturbance effects are small.

Focus of programme

Initially the BCLME Programme is to focus on the compilation of available information relating to offshore drilling activities. The petroleum industry already invests in routine data sampling for operational purposes and the Programme will fund a project to determine which data are available and if it is useful for assessing the state of the marine environment.

Once this assessment is completed attention will be turned towards establishing a baseline for environmental data and setting up monitoring studies in the vicinity of drilling activities.

A similar project has been designed to access environmental data collected by marine diamond mining companies. Numerous impact assessment studies have been conducted during the preparation of Environmental Management Programme Reports for existing shore-based, near-shore and offshore mining operations and BCLME researchers will attempt to summarise this information into an easily accessible format.

The emphasis of the project will be on the cumulative effects (over space and time) of all the sources of sediment disturbance and chemical input and distribution within the near-shore (<30m) and offshore zones (>30m) where diamonds are mined.

Two other studies have been designed to test the cumulative impacts of marine diamond mining. The first of these is an assessment of the cumulative effects of sediment discharges from on-shore and

■ **Several hundred oil wells will be drilled off Angola in the next decade.**

A diver working from a small boat in shallow water (10 – 30m), using small scale, diver assisted equipment.

near-shore diamond mining activities and the second is an assessment of the cumulative impacts of scouring sub-tidal areas and kelp cutting by divers, with particular reference to rock lobster populations.

Off the South African and Namibian coasts, major discharges of fine sediment from shore-based diamond processing plants and diver operations within the near-shore zone (from the shore to a depth of approximately 40m) occur as a by-product of mining operations. There is concern, particularly from the fishing industry, that these turbid waters may impact negatively on the ecosystems and fisheries resources in the vicinity of mining operations.

Mining vs fishing

In the Northern Cape Province and southern Namibia there is on-going conflict between mining operators and the rock lobster fishing industry. In the past, individual studies documented the negative effects that shore-based and near shore mining have on rock lobster. These include a reduction of food availability or the degradation of rock lobster habitat through the smothering of reefs or the reduction of kelp cover.

Most studies have found these impacts to be localised, short term and minor, however, questions remain about the cumulative effects of reef smothering and the cumulative degradation of kelp cover. Added to these problems is the issue of periodic incursions of low oxygen water that is characteristic of the productive west coast.

Both of the BCLME Programme's studies have been designed to examine the repetitive impacts of a range of mining activities. The issues of greatest concern, and those that are currently least understood, relate to the impact on near-shore reefs of sediment discharges from continual or expanding mining operations, and the repeated cutting of kelp in shallow reef areas.