

# THE MINERAL INDUSTRY OF INDIAN OCEAN ISLANDS

By George J. Coakley

## Comoros

The Federal Islamic Republic of the Comoros has a total area of 2,170 square kilometers (km<sup>2</sup>) and is located on three main islands in the Mozambique Channel about two-thirds of the way between northern Madagascar and northern Mozambique. In 1997, the population was 545,000 and the gross domestic product (GDP) per capita, based on purchasing power parity, was estimated to be \$685.

The mineral industry of Comoros continued to be limited to the production of common construction materials, such as clay, sand, gravel, and crushed stone, for local consumption. Quantities were not available but were presumably very low because no significant construction projects have been noted in the press since the early 1980's. Geothermal energy was considered to be possibility for development. The outlook on minerals output, however, was for no significant change. The former French colony was dependent on imports to meet its energy and cement needs.

The economy of Comoros is based on the export of agricultural products, chiefly spices. Political instability in recent years has continued to have a negative affect on the economy.

## Mauritius

The Republic of Mauritius has a total area of 1,860 km<sup>2</sup> and is located about 1,000 kilometers (km) east of Madagascar. In 1996, the population was 1.16 million and the GDP per capita, based on purchasing power parity, was estimated to be a healthy \$10,300. The mineral industry of Mauritius was a negligible factor in an economy that was based chiefly on tourism, financial services, and the export of sugar and textiles. It maintained a favorable foreign investment climate and a Free Port Authority.

Historically, mineral output consisted of the local production and use of basalt construction stone, coral sand, lime from coral, and solar-evaporated sea salt. Quantitative information was rarely available and then appeared to be inconsistent. Data on production of mineral commodities was not available, but on the basis of past activity, Mauritius produced about 7,000 metric tons per year (t/yr) of lime, 6,000 t/yr of salt, 300,000 t/yr of sand, and 1,000,000 t/yr of stone. Environmental concerns regarding the mining of coral sand and its impact on coastal lagoons were being raised.

Polymetallic nodules occurred on the ocean floor at a depth of about 4,000 meters, extending from 400 to 800 km north of Port Louis, northeast of Tromelin Island. The nodules averaged more than 15% each of iron and manganese and more than 0.3% of cobalt, with a concentration averaging from 2 to 6 kilograms per square meter. The abundance of land-based resources of these

commodities made it unlikely that these resources would be developed in the foreseeable future.

Although the country was totally dependent on imports for its energy requirements, oil possibilities were of interest east of the polymetallic nodules area at shallower depth. In the 1970's Texaco had explored the area using geophysics and drilling; the results were inconclusive. Energy consumption came from electricity (10.5%), coal (5.4%) and oil-derived products (84.1%). Mauritius consumed about 570,000 metric tons of oil products in 1993 and was growing at a rate of about 7% per year (Mbendi Information Services, August 17, 1997, Mauritius; Oil industry profile, accessed September 15, 1997, at URL <http://mbendi.co.za/cymroi.htm>).

Steel reinforcing bars were made from imported ingot at three rolling mills. The near-term outlook for the exploitation of minerals other than construction materials was negligible.

## Reunion

Reunion, an overseas department of France, has a total area of 2,510 km<sup>2</sup> and is located about 650 km east of Madagascar. In 1996, the population was 705,000 and the GDP per capita, based on purchasing power parity, was estimated to be \$4,300. It has an agricultural economy dominated by sugar cane exports. Mineral commodities production represented only a small part of the economy of Reunion, although little quantitative information was available. Output of hydraulic cement, made by grinding imported clinker, however, presumably remained substantial, well above 300,000 t/yr. The plant, owned by Ciments de Bourbon S.A. at Le Port, had a capacity of 350,000 t/yr. Additionally, production of basic volcanic rock and sea coast coral undoubtedly continued to meet local construction needs. Little change in future mineral activity was anticipated.

## Seychelles

The Republic of Seychelles is a group of 40 granitic and 50 or more coralline islands with a total area of 455 km<sup>2</sup>, located in the Indian Ocean, northeast of Madagascar. In 1997, the population was around 78,000 and the GDP per capita, based on purchasing power parity, was estimated to be \$7,000. The economy was based on tuna fishing and tourism. Mineral production in Seychelles consisted mostly of unspecified quantities of construction materials—clay, coral, sand, and stone. Although output of guano, an organic phosphate fertilizer comprised of bird droppings, ceased in the mid-1980's, a 5,000-t/yr-capacity plant remained, and occasional small production was unofficially reported.

Granite in the bedrock of Mahe and nearby islands had some economic potential. It had been quarried for dimension stone on a trial basis by an Italian firm in the early 1980's. In 1992, Gondwana Granite, a South African company, was granted a license to extract and export up to 3,000 cubic meters of granite, for use in tile and statuary products. Lime and cement production from the abundant coral also continued to be considered. Preservationists and other environmentally concerned groups, however, opposed both the granite and coral use projects. Polymetallic nodules were known to occur on the ocean bottom near the Admirante Islands. Limited sampling was done in the mid-1980's, but funds for further planned work were not available.

The oil potential of the entire Seychelles region continued to be promoted by the Government-owned Seychelles National Oil Company (SNOC) through the Petroleum Mining Act of 1976. Tar balls from subsurface seeps have long been known to wash up on the beaches of Coetivy Island, as well as on Mahe and some nearby islands. Exploration began in 1969, and by to 1994, 23,150 km of seismic profiles and 27,911 km of aeromagnetic lines had been accumulated. Active exploration through 1995 had failed to discover any commercial petroleum sources. A comprehensive report on the Seychelles geology, hydrocarbon

potential, historical exploration activity, geophysical data availability and on the terms of SNOC's Model Petroleum Agreement are available through this Mbendi Internet site (Mbendi Information Services, August 17, 1997, Seychelles; Oil industry upstream profile, accessed September 15, 1997 at URL <http://mbendi.co.za/indy/oilg/oilgseus.stm>).

### **Major Sources of Information**

Ministry of Economy

Government Building

Moroni, Grand-Comore Island, Comoros

Ministry of Agriculture and Natural Resources

Government House

Port Louis, Mauritius

Bureau de Recherches Géologiques et Minières

46 Bis Rue de Nice, P.B. 1206

Saint-Denis, La Reunion

Ministry of Industry

P.O. Box 648

Victoria, Mahe, Seychelles

Telephone: 248-224030

Fax: 248-225086