

MADAGASCAR

The ambitious island nation is capitalizing on its precious natural resources and enviable strategic location

The giant of the Indian Ocean takes major strides

From rare minerals to cash crops, Madagascar is making the most of its national treasures to offer international investors rich rewards

The giant of the Indian Ocean, Madagascar's ambitious national development plan is gathering pace as government reforms boost economic growth, improve the investment climate and increase returns on its abundant natural resources.

Democratic elections in 2013 created long-awaited political stability that has been a catalyst for solid fiscal progress, regional integration and generated a myriad of investment opportunities throughout all sectors of the economy.

Strategically located close to the crossroads of three continents and key international shipping lanes, the world's fourth-largest island benefits from duty-free access to lucrative foreign markets and bilateral political, economic and trade ties with superpowers such as Japan.

During the sixth Tokyo International Conference on African Development (TICAD VI) in Kenya in August, Japanese Prime Minister, Shinzo Abe, held a very positive meeting with Hery Rajaonarimampianina, president of Madagascar.

Abe agreed to loan Madagascar hundreds of millions of dollars for the Toamasina Port expansion project that will utilize advanced technology from Japanese companies to create key marine logistics infrastructure.

The agreement between the two island countries — who share values of tradition and culture — is just the starting point of a bigger and broader cooperation as they look to build on 57 years of diplomatic relations.

In a further sign of the strong confidence international donors have in the republic of 23 million people, in late 2016 the World Bank Group pledged \$1.3 billion for sustainable development in areas like agribusiness and infrastructure — particularly renew-



Hery Rajaonarimampianina
President



Olivier Mahafaly Solonandrasana
Prime Minister

able energy and transport — that will help eradicate poverty.

"Madagascar has a strategic location right in between Asia and Africa and this gives us many opportunities to develop our country," said Rajaonarimampianina.

"We have many natural resources that are beneficial to the development of tourism and present many openings for investors. Our fauna and flora is incredibly diverse and endemic.

"We are working on the business climate as my priority is to create jobs and wealth. To achieve this, we must work hand in hand with the private sector.

"We are undertaking many social, economic and security reforms. Madagascar presents tremendous opportunities within the renewable energy sector, as well as the agribusiness and tourism industries."

The president is eager for Japan to play a major role in socio-economic development. "Japan has always held a special place because of the good cooperation between the two countries for more than 50 years," he said.

"We have worked in different sectors that are very important for our development. These include agriculture, fisheries, health, education and infrastructure. Japan is also the main

investor in the biggest mining project in Madagascar and the wider region — the Ambatovy project for nickel and cobalt.

"Japan is a very traditional country with high standards and a strong development. Its population is well educated, creative and dynamic — all of which is what we need to develop. Madagascar has huge potential and opportunities in all sectors."

Energizing the economy

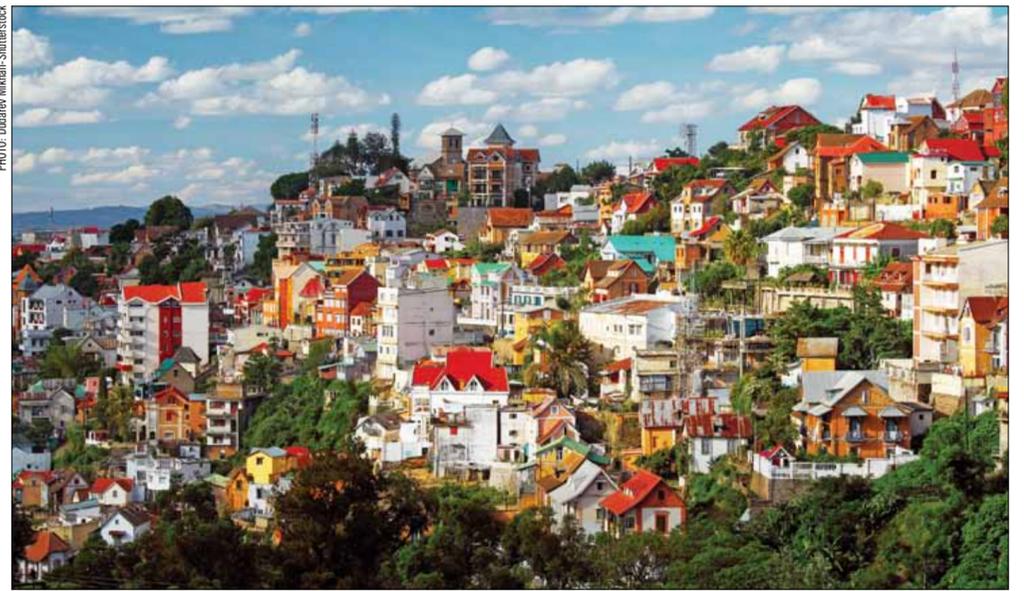
Spearheading this investment drive and modernization program is the Ministry of Energy and Hydrocarbons, where officials understand the importance of having foreign partners — such as Panasonic — to develop such important projects.

"Our energy sector has a legal framework that is secure and guarantees investments above all," said former Energy Minister Rodolphe Ramanantsoa. "We expect to go much further with our renewable energy projects."

Given Madagascar's tremendous mineral and hydrocarbons potential, the extractive sector is another priority area for the government. New petroleum and mining codes will accelerate development, attract major international investors and boost competitiveness.

Exploration is a key component and will have a very important impact on socioeconomic development, with the government working closely with the private sector to establish an attractive legal framework. The discovery of oil in the Mozambique canal area is also a very promising development.

The showcase mining project is Ambatovy, one of the most ambitious industrial undertakings in the history of Madagascar, east Africa and the Indian Ocean region. Ambatovy — which involves Japan's Sumitomo — will produce 60,000 tonnes of refined nickel and 5,600 tonnes of refined cobalt every year for the next three decades, meaning



Madagascar's colorful and cosmopolitan capital, Antananarivo, is among the areas benefiting from international investment.

it is poised to become the world's biggest lateritic nickel mine.

"The final outcome from these 30 years of Ambatovy is a revenue of \$4.5 billion for the state, as well as the creation of 7,300 jobs," said Zafilahy Ying Vah, minister of mining and oil. "Such a project has a real impact on the economy of the region as it has consumed hundreds of millions of dollars of Malagasy products."

"Japan is our key partner in the Ambatovy project through Sumitomo, but we want more investors and private companies here. Sumitomo is the pioneer, but there are enough openings for other Japanese investors in the mining, oil and gas sectors."

Such new arrivals will become involved with OMNIS, the dynamic agency created 41 years ago that manages, develops and promotes the national petroleum and mineral resources.

OMNIS endeavors to develop partnerships with oil and mining companies by creating incentives and competitive environments

for foreign investments and examines the latest exploration data to facilitate easy and reliable prospect appraisal.

By employing a multidisciplinary team of highly qualified technical staff with valuable experience of large-scale project management, OMNIS is perfectly equipped to handle new investigation techniques and contribute to economic growth.

Bonaventure Rasoanaivo, general manager of OMNIS, is excited about the many opportunities that the new petroleum and mining codes will create, particularly as his company is working with more than a dozen oil companies across 18 blocks.

"These companies are well advanced within the exploration phase and most of them would be able to start the drilling process in 2017," he explained. "To make these drilling activities profitable, the oil companies are seeking technical and financial partners to absorb the massive investments required to do so.

"Our main goal is to find technical and financial partners to increase the potential of Madagascar's oil and gas sector.

"Once the new petroleum code is introduced, OMNIS will release an international tender for more than 40 offshore block, as well as the few remaining onshore blocks," he revealed. "The new petroleum code will improve the business climate and make Madagascar more attractive to international companies."

"It will also clarify the role of OMNIS and the ministry. A national oil company will be set up and OMNIS will become the regulatory body. Better transparency and governance will help attract investors.

According to the senior executive, OMNIS has acquired tremendous expertise during its 40 years of existence, meaning the enterprise possesses all the competences and skills required for developing Madagascar's abundant natural resources. "We are working closely with



Bonaventure Rasoanaivo
General Manager, OMNIS

the oil companies to give them our know-how," he added. "We have many different experts working here in OMNIS: mining engineers, geologists, drillers and so on.

"Our experts are trained abroad, which helps us assist these international companies. OMNIS benefits from the expertise of these companies so it's a win-win situation that allows us to reach international standards."

All that glitters is not always gold

Buried treasures like precious minerals and metals can be found across the island, meaning Madagascar is a magnet for miners

Famous for the opulence of its subsoil and geo-diversity, Madagascar is rich in untapped reserves of rare minerals and precious metals that are increasingly catching the eyes of international investors looking for lucrative returns.

Among its buried treasures are industrial and metallic minerals such as ilmenite, graphite, limestone, gypsum, dolomite, silica, mica, titanium, quartz, gold, platinum group, silver, iron, copper, zinc, nickel, cobalt and chromite.

Madagascar's terrain is also home to jewels such as rubies, sapphires and emeralds, with the mining of such natural gems afforded priority status by the government as it looks to develop the sector sustainably.

Prime Minister Olivier Mahafaly Solonandrasana said the mining code will improve transparency and efficiency.

The new legislation will create a sturdy platform for growth that will have a positive impact on the national economic plan.

"Mining represents only 2 percent of GDP at present, so there is still much to do," he acknowledges.

"We are looking for partnerships that benefit all parties. We must show mining investors we have a solid policy — a clear policy that convinces them to come to Madagascar.

"Investors certainly come for the profit, but we also want to see that this gives a puff of oxygen to the economy."

Featuring a high heat stability that makes it popular as a refractory material, chromium extracted from chromite is mainly used in chrome plating and alloying for the manufacturing of corrosion resistant stainless steel and super-alloys.

Madagascar has significant deposits of this steely-gray, lustrous, hard and brittle metal, with efforts to extract the material spearheaded by Kraomita Malagasy (KRAOMA).

Chromite deposits operated by KRAOMA are at Ankazotoalana and Bemanevika.

The unrefined products are treated at the factory at Brieville to obtain finished products: rocky chromium and concentrated chromium.

After the factory, minerals are transported to the station of Morarano and Moramanga for export at the port of Tamatave.

According to CEO Arsène Rakotoarisoa once the new mining code is implemented, KRAOMA will become the national mining company and the exploitation of chromium will be managed by a subsidiary of the enterprise.

"The general philosophy of the national company of mines is to implement specific companies to manage each mineral," the senior executive explained.

"We are convinced of our potential and believe there is a reserve of at least 20 million tonnes of chromium in Madagascar.

"In addition, there are other untapped minerals investors can exploit, although they will probably not require such massive investment like that seen at

Ambatovy.

"People here often say that Madagascar is rich, but the population is poor. This is why I have always campaigned for mining activities, whether industrial or small scale, to have a direct impact on the population.

"Mining companies should contribute to the improvement of quality of life of the population: construction of schools, reconstruction of communal roads, hospitals, markets, the supply of energy and potable water.

"We are trying to formalize this sector by telling small scale operators we have let them carry out their activities, but now we need to reorganize this field.

"Our job at KRAOMA is to use our credibility with authorities to explain to the population why we require this reorganization.

"We do not want to exclude these miners. We will always allow them to operate with alluvial gold, but gold in general has to be exploited in an industrial way," Rakotoarisoa continued.

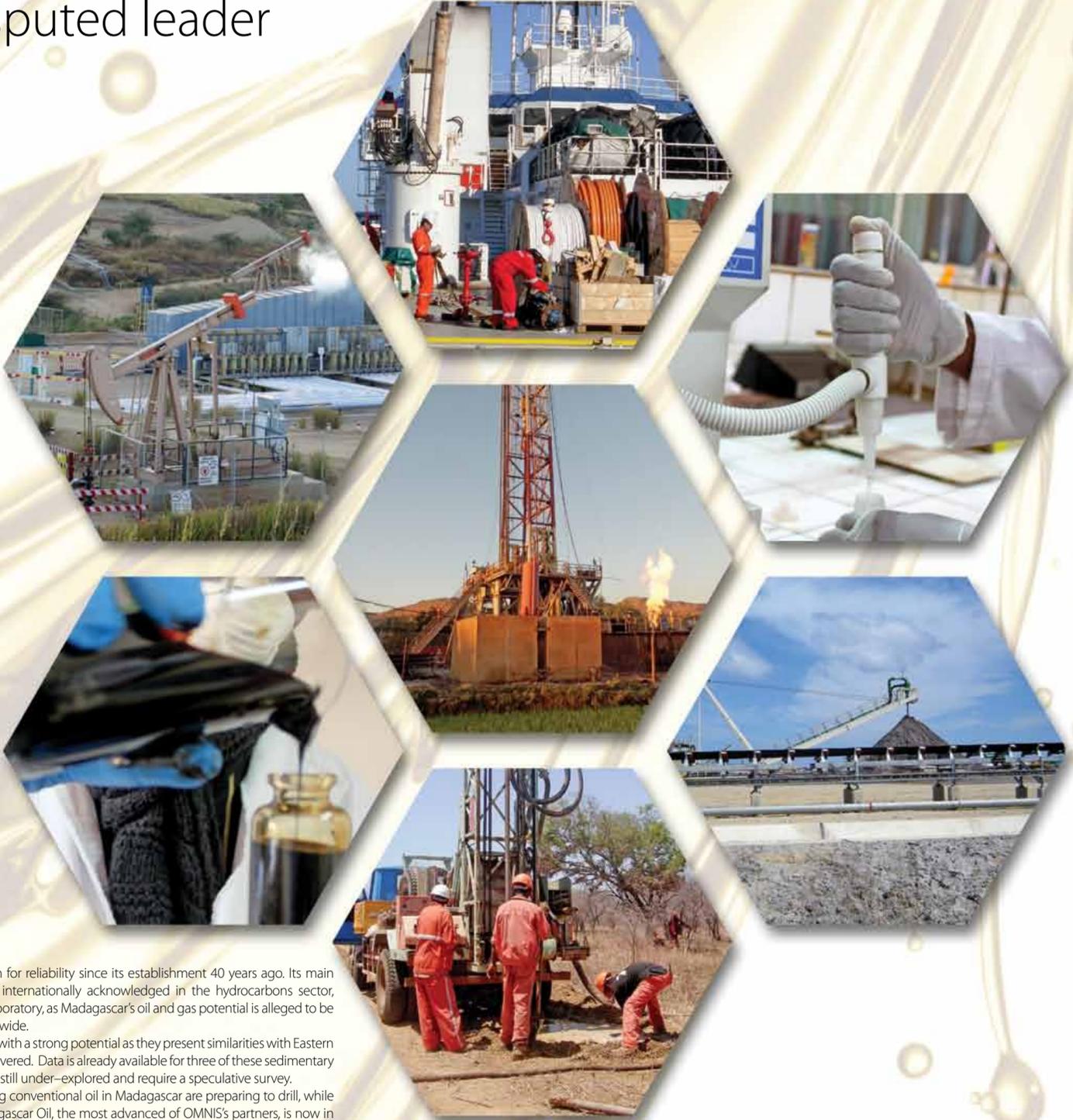
"This is the only way we can really control and govern the resources from which the local public, communities and regions would benefit."

MADAGASCAR MINING
Endless opportunities

«KRAOMA S.A. (KRAOMITA MALAGASY) is the only company on the entire the red island which operates high-scale chromite. The company's main activity is the mining, processing and export of chromite mineral.»

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Deeply committed to the sustainable development of Madagascar's petroleum and mineral resources, OMNIS is the undisputed leader in its field



OMNIS has earned itself a solid reputation for reliability since its establishment 40 years ago. Its main activities are developing rapidly and are internationally acknowledged in the hydrocarbons sector, mineral and drilling fields and inside the laboratory, as Madagascar's oil and gas potential is alleged to be amongst the greatest in Africa, if not worldwide.

Madagascar has five sedimentary basins with a strong potential as they present similarities with Eastern African basins where oil and gas were discovered. Data is already available for three of these sedimentary basins, while the two remaining basins are still under-explored and require a speculative survey.

Most of the oil companies now exploring conventional oil in Madagascar are preparing to drill, while in non-conventional oil exploration, Madagascar Oil, the most advanced of OMNIS's partners, is now in its production and commercialization stage. Madagascar Oil, in partnership with OMNIS expects to produce between 6,000 and 10,000 bpd in the first phase, for local consumption, and between 100,000 and 150,000 bpd later on for local consumption and exportation. Another OMNIS partner is continuing with a production trial of its gas pilot unit in the southern part of Madagascar. The project is currently focusing on a feasibility study of the electrification of the region, and will look at Madagascar as a whole later on.

OMNIS expects to promote approximately 40 offshore oil blocks, as well as all onshore free blocks, once the new petroleum code is promulgated. Not only is OMNIS the regulatory authority for petroleum activities in Madagascar, it is also in charge of the promotion of uranium. As the reference point for oil and gas as well as uranium companies wishing to take part in the development of the sector, OMNIS will continue to ensure the creation of an incentivized and competitive environment for investments, and access to up-to-date exploration data to allow easy and reliable prospect appraisal.

Madagascar's potential in figures

05 sedimentary basins : 1, 104, 900 km²

- Morondava : 616, 200 km²
- Majunga: 171, 200 km²
- Ambilobe: 46, 500 km²
- East Coast: 196, 700 km²
- Ambre Cape: 74, 300 km²

Oil and Gas Resources Evaluation:

- Conventional : Geological resources: 1587 MMBBLS
- Proven nonconventional reserves:
- Tsimiroro heavy oil: 1.7 MMBBLS
- Bemolanga sandstone oil: 2 MMBBLS

Gas Resources :

- Manambolo Ouest : 2.9 Tcf)
- Sikily : 1.085 Tcf
- Toliary : 0.7 Tcf

More precisely:

- 40 blocks to be called for tenders
- 225 petroleum blocks requiring geophysical survey
- Currently 6 000 — 10 000 bbls/day heavy oil production and later 100 000 — 150 000 bbls/day



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