# PRESENTATION

# EXPLORATIONS OPPORTUNITIES IN HEAVY SANDS MINING

***February 2023***

## MOZAMBIQUE LOCATION

Mozambique is located in the Southwest African Continent.
It is bordered to the north with the Republic of Tanzania, the Northeast with Zambia and Malawi, Zimbabwe to the west, the East with the Republic of South Africa and south with the Kingdom of Swaziland.
Extends from Latitude 10 º 27'S of the Rovuma River and 26 º 52 'S of Ponta de Ouro.
It has a coastline of about 2700 km

## SEDIMENTARY MOZAMBIQUE BASIN

**Mozambique is constituted by**

- 1 / 3 of the continental territory is covered by sedimentary rocks
- 2 / 3 covered by igneous and metamorphic rocks

**Mozambique has two major coastal basins:**

- Rovuma Basin -29,500 Km2
- Mozambique Basin-500.000Km2

**Graben and small basins:**

- Basin Maniamba
- Basin of Lake Niassa
- Lower Zambezi Graben
- Middle Zambezi Graben

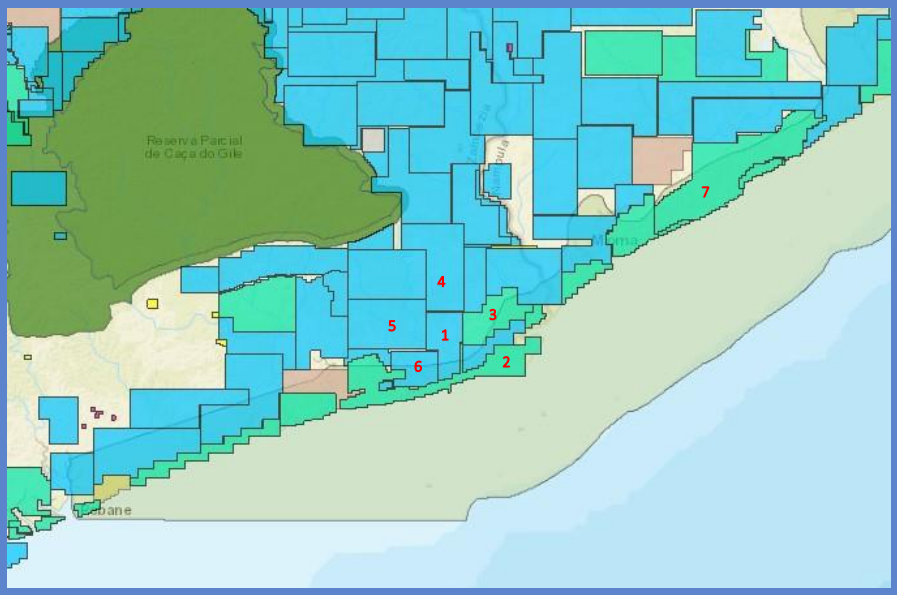
# PROJECT LOCATION

The area in study makes part of an old project undertaken In the 1990's call it Moebase and Naburi mineral sands deposit
Later this area was divided by the government and licensed to other company's

Located in Mozambique on the northern coast of the country at Zambeze Province, Pebane District, 390 km northeast of Beira and approximately 1100 km northeast of the capital, Maputo.

**Fossil Construcoes** holds the exclusive exploration license **Nº 8883L** covering **9547.7ha** under the terms and conditions set out by the Government of Mozambique.


## 8883L EXPLORATION AREA – http://portals.flexicadastre.com/mozambique/en/




**1 – 8883L (Fossil Construcoes)**; 2 – 6953L (TZM Resources, SA); 3 – 6953L (TZM Resources, SA); 4 - 9947L (NC Minerals, Lda); 5 – 10596L (Leading Mining Investment 4, Lda); 6 – 4462L (Shuang Long, Lda); 7 – 735C (Kenmare Moma Mining (Mauritius), Lda)

## Deposit Geology

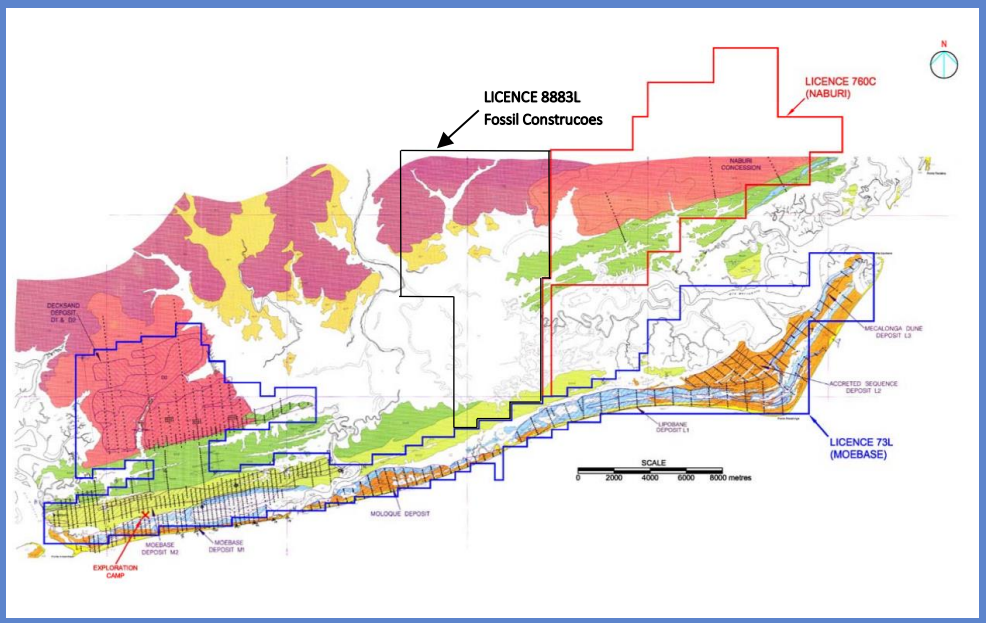
Heavy mineral sands generally include all those minerals with a specific gravitytypically greater than 2.9. The more valuable components of a heavy mineral sands deposit include the titanium oxide minerals ilmenite and rutile, zircon (zirconium silicate), garnets, monazite and xenotime. Heavy mineral sands deposits are typically concentrated in beach formations, which may be of paleo or modern age. Modern beach deposits are formed as exposed beach placers feed sand to coastal dune systems which accumulate as foredunes along the coastline.

## Regional Geology

The Moebase and Naburi heavy minerals sands deposits are located in the northern regions of the Mozambique Basin. The Mozambique Basin is one of a series of large sedimentary basins formed on the eastern continental margin of Africa as a result of rifting and subsequent break-up of the Gondwana super-continent. Rifting produced sedimentary basins that were filled with conglomerates, sand, shale and deep-water marine limestones. At the same time, thermal uplift and continental drift initiated a major erosional cycle in the sub-continent. Denudation is still active and manifests itself in the mountains associated with the Great Escarpment.

As the continents moved apart a stable passive continental margin was formedapproximately 65 million years ago and sand dominated marginal marine sediments were deposited along the coastal basins. Large quantities of sediment were flushed down the major river systems and fed into the Mozambique Basin. The end result of this sedimentary cycle is the formation of heavy mineral sands placers along the coastline. Relative sea-level changes have exposed these sediments, which define a coastal plain from Richards Bay in the south to the Moebase-Angoche area north of the Zambezi in Mozambique. The paleo shoreline (Pleistocene) deposits have been covered by relatively young alluvial and coastal (Holocene) formations which generallylie in unconformity to the older deposits.

The hinterland of the coastal plain of Zambezia Province comprises Precambrian basement and Mesozoic volcanics. The adjacent coastal zone consists of 15 cover types ranging in age from Pleistocene to Holocene. These include the older proluvial Decksand deposits, coastal plain and drainage channel alluvium deposits of various ages, migratory dunes and extensive developments of accreted beach/dunecomplexes which have exploration potential for heavy minerals.




Study on the Moebase and Naburi Mineral Sands Deposits, Mozambique from the 1990's block

## Mineralization

Mineralization in the deposits consists of a typical heavy mineral sands suite with magnetite, garnets, staurolite, amphiboles, pyroxenes, titaniferous minerals and zircon. The valuable heavy mineral fraction (VHM) consists of ilmenite, altered ilmenite (leucoxene), rutile and zircon. Ilmenite is present as two fractions, a high chrome (>0.11 % $Cr_2O_3$) and a low chrome (<0.11% $Cr_2O_3$) ilmenite. The total heavy mineral (THM) content in the deposit's averages 4.8% for the coastal and 3.1% for the hinterland and alluvial deposit.

The final Products that mineral separation plants produce are elements:

- Ilmenite
- Rutile
- Zircon

## Financial Analysis

This chapter is an extended and important part of the project that is based on many aspects requiring a precise study of all variants of the project.

It's presented below an average cost of project implementation and average prices of ilmenite, rutile and zircon taken from publicly available sources and information.

**Project Infrastructure Cost**

| Facility | Cost (US$) |
|---|---|
| Temporary Services for Construction | 2,833,000 |
| Project Infrastructure | 39,451,000 |
| **Total** | 42,284,000 |

**Mineral Prices**

| Mineral | US$/t (FOB site) |
|---|---|
| Ilmenite | 125 |
| Rutile | 677 |
| Zircon | 1148 |

## Considerations

- Fossil Construcoes is executing a preliminary report based on superficial samples and from 8 drilled holes;
- Research project is required to determinate the possible working areas, environmental impact, social impact;
- For resource determination and market viability will be necessary drilling depth to assess the extent of mineralization and calculate the potential of the area;

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