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Short Commentary

Sinai… The land of Turquoise - Egypt's Strategic Stock of Mineral Wealth

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Let us first emphasize some important facts about the mining and mineral resources sector in Egypt:

1. Despite the great potential of the mineral wealth sector in Egypt and the spread of many mineral ores in most Egyptian deserts and in large proportions, this sector does not participate in the national product except by a very small percentage represensing not more than 1% in the country's national product.
2. Experts and specialists emphasize that mineral wealth represents the third side in building the economies of countries along with agriculture and industry, and from here it is necessary to exploit these resources optimally, according to procedures and measures to activate research and exploration operations, and use the best ways to extract and exploit them in an economic manner.

Sinai Peninsula is a triangle-shaped peninsula located in Egypt that has an area of about 60,000 square kilometers between the Mediterranean Sea (to the north) and Red Sea (to the south). Its land borders are the Suez Canal to the west and the Palestine-Egyptian border to the northeast. The Sinai Peninsula is in Southwest Asia while the rest of Egypt is in North Africa (Figure 1).

The Sinai Peninsula in the Arab Republic of Egypt is the crossroads of continents and the land of turquoise and the incubator of the most beautiful natural reserves on the planet not only that, God has blessed it with many mineral riches represented in many mineral ores, whether industrial such as cement industry raw materials (limestone, shale, gypsum, iron oxides, sand and gravel), ceramic industry raw materials (feldspar, albyte and kaolin) and ornamental stones (marble and granite) as well as metal ores that are involved in advanced technological industries (copper, lead, zinc, tungsten, molybdenum and manganese) and recently discovered in Sinai some of the precious metals (gold and silver). Sinai is famous for the presence of energy raw materials other than oil, which is coal ore, which is found in many areas, especially the G. Al-Maghara area in North Sinai, as well as the areas of Badaa and Thawra near the Abu Zenima area.

There are also a number of natural salts on the northern coasts of Sinai near the El-Arish City, which produce large quantities of table salt and other industrial salts. The Sinai Peninsula also contains the largest reserves of ultra-pure white sand, which is used in many important industries.

Based on the interest in the reconstruction of Sinai, it was necessary to draw attention to pay attention to its mineral resources and its many treasures and attract investment and reconstruction opportunities to it, so many geological, geophysical and mineralogical studies have tended to discover these mineral resources that can be developed and estimate the reserves of them and the work of many feasibility studies to exploit them optimally.

In this article, the researcher tries to shed light on the most important mineral wealth spread in the Sinai Peninsula in terms of their type and quantities, in order to direct decision-makers and those wishing to invest in the mining sector to the most important mining projects that can be established in the land of Sinai, which helps the emergence of new communities, provide job opportunities and increase the national income of the country.

Among the most important hidden mineral riches in the Sinai Peninsula are:

Turquoise

It is the most famous mineral of the Sinai Peninsula, and is found in the mountains of Wadi Al-Maghara and Sarabit in the city of Al-Tur, and was the first to think about mining turquoise in the last century, Major MacDonald, a retired English officer, in Wadi Al-Maghara in 1854 and built him a house at the foot of a hill inhabited by old miners, and he lived his wife there for five years in collecting the metal, but he did not achieve the success he begged for and died in 1870.

Oil

Petroleum is the most important mineral resource in Sinai. There are many oil fields, including the Gulf of Suez, Belayim, Assal and Abo Rdis, and the region's reserves are estimated at about 237 million barrels of crude oil and natural gases.

White Sand

White sand is found in the Sinai Peninsula in the area of G. Abu Hittat - Paradise Plateau on the Nuweiba - Saint Catherine road and the Abu Zenima area with a total reserve of up to (155 million cubic meters or 330 million tons) of ultra-pure sand. These sands are involved in many important industries, including: luxury glass types - tableware - white glass - transparent packaging - optical glass - crystal - colored glass and others.

Figure 1: Location Map of Sinai Peninsula in the Arab Republic of Egypt.

Ornamental Stones

Ornamental stones, especially granite of various kinds, are spread in the areas of Saint Catherine and Nubia, while marble of sedimentary origin and consisting of hard limestone rocks is found in the areas of Al-Hassana in central Sinai and these raw materials are used for many purposes, including: decorating buildings and facilities - floors - stairs - the manufacture of antiques and statues.

Kaolin

It is one of the distinctive raw materials in Sinai and is located on Nuweiba - Saint Catherine road and the proven reserves of it are estimated at about 15 million tons, as well as the Abu Zenima area, and the reserves are estimated at about 80 million tons and kaolin ores are used in many industries such as: ceramics and Chinese - white cement - medical industries - plastic - refractory bricks and refractories - sanitary ware.

Limestone

It is found in G. Labani, G. Al-Halal, Raysan Unaizah, G. Al-Maghara and G. Al-Jifjafa and is used in the manufacture of cement, chemical industries, fertilizers, paints and in construction and road construction.

Dolomites

It is found around the edges of G. Al-Maghara and G. Al-Halal and is used in construction, road construction and protection of port docks and has many uses, the most important of which are: the production of aggregates necessary for road paving and reinforced concrete, agriculture to improve the soil and restore its acid balance, cement industry, refractories for lining furnaces and molds used in steel production.

Coal deposits

Coal deposits are located in Sinai in G.Al-Maghara area and the proven reserves of it in G. Al-Maghara are 27 million tons, of which about 21 million tons can be mined, and there is also located in Abu Zenima and Oyoun Moussa areas, and the proven reserve has been estimated at about 18.5 million tons, it is used as fuel for power plants and cement factories.

The Carbon Baby

They are natural deposits containing carbon-coal materials, found east of Abu Zenima, and used as fuel in power plants and cement manufacturing. Its reserves are about 75 million tones per square kilometer.

Manganese Deposits

Manganese ores are found in South Sinai in the Um Bojmeh area, and appear as lenses associated with dolomite limestone rocks in the Middle Carboniferous Age, and this area has reserves of about 3 million tons, and is currently exploited by the wholly-owned Sinai Manganese Company, which replaced the British Sinai Company more than 66 years ago. There are also deposits of manganese ore in the Sharm el-Sheikh area of South Sinai, associated with iron ore, and the percentage of manganese in this area is about 45%, and this area is considered to have an estimated reserve of about 30 thousand tons, according to information documented by the Mineral Resources Authority. It is used in many important industries such as: pharmaceutical industries - battery industry - aluminum - bronze.

Lead, Zinc, Silver and Gold

Lead, zinc, silver and gold spread in the Sinai Peninsula in the area of Um Zureik and Al-Kid near the city of Dahab, it has been discovered high concentrations of lead and zinc in the area of Um Zureik west of the Gulf of Aqaba and about 45 km from the city of Sharm el-Sheikh . These concentrations exist in the form of ranges in sedimentary rocks and concentrations range from 1% to more than 12% for lead and from 1% to 8% for zinc . This has been monitored these concentrations superficially and in depth where monitoring it at a depth of 79 m in the form of a carrier layer and the results showed the presence of galena metal by between 1-3% and the main zinc mineral, which is sphalerite by between 1-8% with the monitoring of other high concentrations of silver (3000 ppm). There are also some studies that refer to the discovery of gold ore in the vicinity of sedimentary rocks near the Abu Zenima area, as well as some areas in the city of Taba.

Copper

The Sinai Peninsula is famous for the presence of copper ore, which has been exploited since the era of the pharaohs, and the most important areas that contain ore are the Samra area near the city of Dahab, Al-Ruqaita near Saint Catherine, and the monument and Sarabid Al-Khadem near the city of Abu Zenima. Copper is used in many important economic industries as well as in many alloys and in the manufacture of paints.

Sulphur

Sulfur and pyrite ores are among the raw materials that are used in many industries, especially the fertilizer industry, and sulfur ore is found in two areas, the first in north El-Arish, which is of sedimentary origin, and the second region, which is the Mount Ferrani area in South Sinai, where sulphur is present in the form of pyrite ore in large quantities.

Feldspar

It is located in South Sinai and is used in many important industries such as: glass industry - ceramics - toothpaste - sandpaper materials - borsillin - paint and polishing materials.

Black sand

The beaches of the city of El-Arish abound and contain a lot of heavy and important metals such as magnetite, illuminate, rutile, zircon and are used in many important iron industries such as the manufacture of paints - alloys dyes - textiles - paper - leather - glass and refractory bricks.

Gypsum Deposits

Gypsum deposits are located in the Ras Al-Malab area and Wadi Al-Seih in South Sinai and are used in many industries, the most important of which are: the manufacture of fertilizers - cement and other construction purposes.

Shale Sediments

Shale deposits are widely spread in the area of Abu Zenima, the area of Wadi Firan, the area of Al-Tur and the area of Oyoun Musa. It is used in many industries, including: ceramic industry - as a filter material - brick industry - cement industry - drilling fluids - refractories industry - cosmetics and some pharmaceutical preparations.

Sand and Gravel Deposits

Sand and gravel deposits are spread in various places in the Sinai Peninsula and these deposits are included in many purposes such as: the manufacture of building and construction materials and as filter agents in water purification plants.

Salt

Sodium chloride (table salt) is found around Lake Bardawil in the form of salts and is used in the production of table salt, food industries, chemical industries and drilling oil wells. The most recent use of salt is the use of rock salt mines as a safe place for burying nuclear waste.

Bentonite

It has economic importance in the drilling of oil and groundwater wells, and is located between the areas of Oyoun Moussa and Ras Sidr. Reserves are estimated at hundreds of millions of tons.

Groundwater

North Sinai Governorate enjoys a huge reserve of groundwater in a group of deep aquifers, which opens up investment opportunities in the agricultural and industrial fields and the subsequent reconstruction and other economic activities.

By reviewing the wealth of the Sinai Peninsula, it becomes clear to us the importance of benefiting from these riches from the establishment of industrial projects that increase the value of these raw materials, which absorb a lot of labor and establish new urban communities aimed at reconstructing Sinai and increasing its effectiveness in supporting national income, especially with the presence of various energy sources, road network, ports and other elements of infrastructure.

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