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Mining is the process whereby mineral ores in commercial quantities are obtained from earth crust and purified to a form in which they can be sold.

Types of minerals

- Metallic mineral include gold, copper, iron, lead etc.
- Nonmetallic minerals include sulphur, petroleum oil, diamond, asbestos etc.

Mining in selected countries

Nigeria

- The major mineral exploited in Nigeria include, petroleum and natural gas in the Niger delta coal in the Benue valley and Enugu, Tin from Jos plateau, Gold at Ibadan etc.
- Nigeria is one of leading oil producers on the African continent and also a member of OPEC.
- The major mining towns include; Enugu, Ibadan, Warri, Port Harcourt, Calabar, etc.

DRC

- The major mineral are gold, diamonds, coal, copper, cobalt, uranium, lead, zinc, tin etc.
- The major mining areas include Katanga province, Kasai, Kivu and the coastal areas of DRC.
- The major mining towns include; Kasai, Kipushi, Kisangani, Lubumbashi, Mbuji mayi, etc.
- DRC is one of the leading copper producers on the African continent and worldwide.

Liberia

- . The major minerals are Iron Ore, Gold, Diamond, etc.
- The mining sites include, the Bie hills, the Bong hills, the Mano river valley, the Bomi hills, Wologos area and the Nimba Mountains.

Germany

- The major minerals are: coal, natural gas, iron ore etc.
- Mining centres are: Wesel, Duisburg, Essen, Bochum, Dortmund etc.
- Mining sites are: Siegen region (iron ore), Ruhr (Coal, Natural gas, Iron ore) etc.

USA/ Great Lakes region

- Minerals mined include iron, nickel, copper around Lake Huron, salt around Lake Erie, Uranium North East of Lake Superior coal in Cleveland.
- Mode of transport: St. Lawrence sea-way, canals, railway etc.

Zambian Copper belt

- Minerals mined include copper from Ndola to the border Mountain of DRC at Kipushi /Lubumbashi. Other minerals include Cobalt.
- Mode of transport: Tazama / Tanzara railway from Beira to Lobito and Ndola to Dar-es-salaam.

The Rand of South Africa

- The major minerals are Gold, Diamonds, Copper, Coal, Chrome, iron ore etc.
- Major mining centres are: Johannesburg, springs, Germistone, Kruggersdorp etc.

Ghana

- Major mineral are gold from Ashanti uplands, Huni valley; diamond from Akwatia and Brim valley; petroleum from Jubilee field etc.

Libya

- Major mineral are petroleum from Bouri, Elephant etc.

The factors which have favored the development of mining industry in a country

- Presence of large deposits of the minerals supporting commercial exploitation.
- High levels of technology used e.g. the use of mechanical shovels, dragline excavation, bucket conveyors etc.
- The high grade of minerals.
- Efficient transport systems by use of water, roads, railway etc.
- Presence of skilled and unskilled labour to work in the mines and in the industries.
- Presence of large market for the minerals.
- Presence of capital for investment in the mining industry.
- The good government policy to support the mining industry, industrialization, local and foreign investment.
- Improved research e.g. on mineral reserves, prospects technology etc.

- Presence of water e.g. for softening the ground, for mixing solutes, for cooling etc.
- Availability of power for running the mining technology and the processing industries
- The political stability promoting local and foreign investment.

Factors that limit exploitation of minerals developing countries

- Conflicts over ownership of mineral resources E.g. Ogoni of Niger delta conflicting with the central government and mining companies (shell).
- Political instability/insecurity scares away investors e.g. M23 rebels in DRC and Boko Haram rebels in Nigeria.
- Limited market for minerals/decline in demand limits mining.
- Fluctuation in world market prices for minerals e.g. petroleum (Nigeria), copper (DRC).
- Poorly developed transport networks e.g. poor roads and railways interfere with transportation of minerals.
- Thick vegetation cover in Nigeria and DRC limits the surveying, exploration and exploitation of minerals.
- Unfavorable climatic factors e.g. excessive rain /poor drainage which lead to flooding of mines.
- Inadequate skilled labour which calls for dependence of experts from foreign countries which are expensive.
- Poorly developed technology which limits mining and leads to production of poor quality mineral products.
- Limited capital resources for investing the exploration and exploitation of mineral resources.
- Profit repatriation by foreign companies reduces capital for reinvestment e.g. shell in Nigeria.
- Existence of minerals in small and scattered quantities makes them non-economical to exploit.
- Nature of occurrence of minerals/ Deep depth of mineral Ores and thus uneconomical to exploit.
- Accidents in mine which scare away the labor force e.g. collapsing of mines which bury miners underground.
- Environmental pollution.
- Inadequate power supply coupled with the high cost of power makes mining unprofitable.
- Mineral exhaustion due to over exploitation e.g. copper in DRC.
- Unsupportive government policies where governments do not consider mining as a priority sector.
- Limited research thus limiting prospection exploration, surveying and exploitation and processing of minerals.
- Inadequate water supply for exploitation and processing of minerals e.g. northern Nigeria
- Strikes and demonstrations which paralyse mining activities and lead to destruction of property.
- Corruption and embezzlement.

Contributions of mining industry

Positive effects of mining industry

- Diversification of the economic activities.
- Source of employment to the population.
- Source of revenue to the government.
- Source of foreign exchange earnings.
- Provides raw materials for industrial development/ raw materials for construction
- Development of urban centres.
- Promotes development of social services e.g. schools, health facilities, housing, electricity etc.
- Promotes establishment of transport and communication network e.g. railways, roads, canals etc.
- Promote trade and international relationships.
- Generation power for domestic and industrial use.
- Promotes research and education.
- Encourages capital inflow/attracts foreign investors.
- Improvement of international relationship through trade
- Leads to the development of the tourist industry.
- Mining has led to acquisition of skills related to mining e.g. Geo Survey, mapping, Geology, mining etc.

Negative contributions of mining industry

- Removal of fertile top soils- leads to loss of agricultural land.
- Destruction of vegetation cover.
- Pollution of air, water and land resources.
- Leads to mineral exhaustion.
- Leads to urbanization and its negative effects such as insecurity, congestion, poor hygiene.
- Leads to rural-urban migration.
- Leads to political instability in developing countries due to greed.
- Accidents during mining such as collapse of the mine killing employs and property.
- Displacement of the local occupants.
- Destruction of landscape.
- Encourages strikes especially in South Africa.
- Unemployment due to use of advanced technology.
- Lack of labour in other sectors such agriculture because majority of able young men are employed in mining industry
- Potholes are filled with water harboring vectors such as mosquitoes.

Thank you
Dr. Bbosa Science