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Geography (UACE 250/2) paper 2 revision questions for Mining in the world

1. Describe the factors limiting the exploitation of mineral resources in either Nigeria or DRC. (25 marks)
(Candidates should select one country and describe the status of the mining industry in the chosen country)

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.
- Mining employs a reasonably large number of the Nigerian working population.

DRC

- The mining sector in DRC is dependent on the following mineral resources e.g. Gold, diamonds, coal, copper, cobalt, uranium, lead, zinc, tin etc.
 - The major mining areas include Katanga province, Equatoria, 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.
- (Candidates are expected to identify and describe the factors limiting the exploitation of mineral resources in the country chosen)

Factors that limit exploitation of minerals in the two countries are similar

- Conflicts over ownership of mineral resources E.g. Ogoni of Niger delta conflicting with the central government and mining companies (shell).
- Political instability brings mining activities to a standstill 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.
- Some mineral Ores are of low grade and unprofitable to mine.
- 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.

2. Describe the conditions that have favored the development of mining industry in either Liberia or Germany. (5marks)

(candidates are expected to choose one country and clearly explain the factors which favored the development of mining industry in the country chosen, the minerals which form the basis of mining industry and the mining sites in the selected country should be identified)

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 minerals include Iron Ore mined around Siege land region, coal in the Ruhr, others include Oil, Lead, Zinc, Bauxite, etc.

The factors which have favored the development of mining industry are more or less similar for the two countries. They include:

- Presence of large deposits of the minerals supporting commercial exploitation
- High levels of technology used e.g. the use of mechanical shoves, dragline excavation, bucket conveyors etc.
- The high grade of minerals e.g. Iron Ore mined around Siege land region, coal in the Ruhr

mode of formation of the minerals making exploitation easy and cheap

- 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.

3. To what extent has transport contributed to the development of the mining industry in either the Great Lakes regions (USA) or the Zambian copper belt? (25marks)

Candidate should select one region or area and throw some light on

- Mining towns and minerals mined.
- Modes of transport used.
- Role of transport in mining industry.
- Other factors that influence the development of mining industry.

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.
- There are also roads leading to different towns.

Roles played by transport in the mining industry are as follows.

- It is used in the movement of labour from or to mining areas
- Transport is used in the transportation of machinery and mining equipment like drilling bits to mining centres to carry out mining
- Transport is used in the transportation of minerals like copper from the copper belt in Zambia to processing centres.

- Transport is used to link to market areas both internal and external for sale of the minerals mined for example copper from Zambia is transported to Dar es salaam for export.
- Transport is used in the transportation of minerals like coal which are used as power sources to mine and process the mined minerals

Other factors include.

- Presence of improved technology such as drilling machines to carry out both mining.
 - Availability of abundant mineral resource to be mined for example copper from Zambian copper belt.
 - Presence of skilled labour such as engineers and technicians to operate mining equipment, carry out mineral survey and exploration and the semi-skilled labour to load and transport minerals extracted, prepare food for the labour etc.
 - Nature of the occurrence of the minerals being near the surface thus easy to extract
 - Presence of large amounts of capital for investing in the mining industry.
 - Presence of permanent water bodies that supply water used in processing the minerals such as the L. Superior waters used in cooling of machines during the process of iron ore into iron and steel.
 - Presence of extensive research and education used in exploring and discovering mineral deposits worth mining for example large copper deposits in the Zambian copper belt
 - Availability of abundant or adequate power sources or energy source like hydro electricity used in mining and processing of the copper and cobalt mineral extracted.
 - Supportive government policy of developing the mining industry through giving licenses to mining companies, extension of electricity and transport routes to mining areas to encourage mineral exploration.
 - Presence of ready market for the mineral resources and mineral products in the local and international market for example iron is highly demanded in the USA for the iron and steel industry and international market like in Japan, China etc.
 - Political stability and security in the Zambia has allowed long term investment in mineral industry.
 - Presence of high grade minerals to allow profits be realized have encouraged mining in the Zambia and Great lakes Region.
4. Assess the impact of the mining sector on the environment in either the Ruhr region of Germany or the Rand region of South Africa.

Candidates should select one region and the mining centres. After which they should bring out the positive and negative impacts of the mining industry

The Ruhr

- The major minerals are: Coal, Natural gas, Iron ore etc.
- Mining centres are: Wesel Duisburg, Essen Bochum, Dortmund etc.

The Rand

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

The effects are more/less the same.

Positive effects

- 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.
- Development of social services e.g. schools, health facilities, housing, electricity etc.
- Establishment of transport and communication network e.g. railways, roads, canals etc.
- Promote trade and international relationships.
- Generation power for use in industries and in homes.
- Promotes research and education.
- Encourages capital inflow/attracts foreign investors.
- Leads to the development of the tourist industry.

Negative effects.

- 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 effects
- 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.

5. Asses the contribution of mining industry to the development of either china or The Republic of south Africa. (25marks)

Candidates are expected to select a country and assess the contribution of mining industries to the country both positive and negative contribution should be discussed.

Republic of South Africa

Positive contributions

- Mineral exports lead acquisition of foreign exchange.
- Mining provide raw materials to industries such as iron to steel industry

- Mining provides employment opportunities for the people
- Mining has led to growth of towns with positive effects such as health care, education, trade and commerce etc.
- Mining has promoted economic diversification thus reducing over dependence on a few activities.
- Source of government revenue through taxes imposed on mining companies and their employes
- Mining has led to acquisition of skills related to mining e.g. Geo Survey, mapping, Geology, mining etc.
- Mining of coal, iron, limestone from Rand, Gold from the Orange free state have reduced foreign exchange spent on importation of oil, cement
- Promotion of international relationship through trade in minerals.
- Mining promoted development of power and energy for domestic and industrial use
- Government revenue from mining industry is used to develop social services such as schools, health facilities etc.

Negative contributions

- Encroachment on agricultural land
- Environmental and water pollution.
- Mining lead to displacement of people
- Accidents leading to destruction of property and loss of life
- Lead to rural urban migration
- Profit repartition
- Mining in south Africa is a basis of instability due to greed between mining companies.
- Over dependence on mineral results in mineral exhaustion.
- Mining leads to regional imbalance or unequal development
- Urbanization due to increased crimes, congestion, poor hygiene etc.
- Lack of labour in agriculture because they work in mining industry.
- Potholes are filled with water harboring vectors such as mosquitoes.

Thank you
Dr. Bbosa Science