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## Geography (UACE 250/2) paper 2 Manufacturing industry in the world

**Industrialization** is a process in which countries become increasingly involved in the production of manufactured goods.

### Major industrial Centres in selected countries in the world

#### Great Britain

**Major industrial centres include:** Midland, Northern East London, Yorkshire, Nottinghamshire, the Lancashire region, the Cumberland region, Great London, South Wales and central Scotland.

**The industries deal** in ship-building engineering, oil refining, textile, chemical, Motor vehicles, luxury etc.

**Major sources of power include:** Coal, oil, Natural gas, (thermal energy), H.E.P from rivers, Nuclear energy from Uranium etc.

#### Germany

**Industrial regions/towns/centres include;** The Ruhr conurbation with towns such as Essen, Duisburg, Dortmund, Bochum etc.

Other industrial towns in Germany include Hamburg, Cologne, Munich, Berlin, Frankfurt etc.

**Types/examples of industries include:** Iron and steel. Heavy machinery, chemical, Engineering, Motor vehicle, ship building, textiles, food processing, electronics etc.

**Types of power include:** Coal, oil, Natural gas, (thermal energy), H.E.P from rivers, Nuclear energy from Uranium etc.

#### U.S.A

**Industrial regions/towns include;**

- The great lakes region e.g. Chicago, Detroit, Duluth, Cleveland, Buffalo etc.;
- The Mid-Atlantic States region e.g. New York, Philadelphia, Washington;
- New England e.g. New Bedford, Providence Manchester, New Haven, Bethlehem Bridge port etc.
- Western region around California, e.g. in Los Angeles, San Francisco, San Diego.
- Other towns e.g. Pittsburg, Atlanta. Birmingham, Houston, St Louis etc.

**Type of industries include** iron and steel, heavy machinery, electrical engineering, motor vehicles, aircrafts, chemical industries, textiles, shipbuilding, food processing, electronics etc.

**Types of power include:** Coal. Oil, Natural gas (thermal power), H.E.P from rivers, Nuclear energy predominantly from Uranium etc.

### **China**

- Manchuria industrial region is located in the North East of china. This is China's greatest area for heavy industry. It's centered on the Anshan-Fushun-Shenyang triangle.
- Industries here include iron & steel. Engineering, Automobile, factory equipment & chemicals.

### **South Africa.**

- The Rand is the largest industrial conurbation in the republic of South Africa.
- It lies in the Orange free-state and Transvaal state, .
- The conurbation is made up towns e.g. Johannesburg, Klerksdorp, Krugersdorp, Springs, Pretoria, Vereeniging etc.
- The types of industries include motor vehicle assembly, Textiles, refining of minerals like iron and gold, manufacture of paper and printing works, heavy engineering /iron and steel works, food processing etc.

### **Factors that favor development of industries**

- Presence of abundant sources of energy from HEP, thermal (coal, petroleum oil, natural gas) and or Uranium.
- The presence of agricultural and mineral raw materials
- Presence of efficient and reliable means of transport such as canals, railways, roads and access to seaport that are used to transport raw materials to industries and manufactured goods such as sheet metal to market.
- The high level of technology such as robots, conveyor belts, automated procedures that are used in industrial process
- Presence of abundant water supply which is used for industrial processes such as cooling, ingredient and cleaning purposes.
- The presence of abundant skilled and semi-skilled labour used in processing for industrial process
- Presence of adequate capital to purchase land, machines, raw materials, pay salaries to workers.
- The presence of relatively cheap vast land for the establishment of large scale industrial plants, storage warehouses, etc.
- The historical factor or industrial revolution presence of industries in an area attract many others in the area to share the benefit of security, social services such as electricity, roads, market, skilled labour etc.
- The supportive or favourable government policies favor investment in an area including tax holidays, development of power; roads and extension of water to industries in that area
- Presence of a ready or large market for industrial products both local and international.
- Security and political stability favor long term industrial investment.

- Intensive research to in production processes and marketing to meet customer needs.
- The influence of industrial inertia in that industries tend to be located near each other(s) so as to enjoy economies of scale such as using each other's products as a raw material, sharing of social services like electricity; dumping areas, security, roads have encouraged distribution of the iron and steel industries.
- Favourable climate especially for the space craft industry, film industries especially in U.S.A

### **Contribution of industrialization in a country**

#### **Positive impact**

- It has led to development of urban centres
- Industrialization has led to development of infrastructure e.g. Roads and Railways to create access to markets etc.
- It creates market for agricultural products hence development of agriculture to feed the urban population.
- It has created employment opportunities in the various industries and secondary social service industries like Banking; insurance etc.
- It has led to diversification of the economy in addition to agriculture, forestry etc.
- It is a source of local revenue for the government through local taxation.
- Industrialization enhances both local and international trade.
- It is a source of foreign exchange through exportation of industrial products/creates favourable balance of payment.
- Industrialization enhances tourism.
- It has attracted foreign investments hence increasing inflow of foreign capital.
- It has promoted education and research.
- Industrialization encourages technological advancement for high quality/quantity and better methods of production.
- It has reduced expenditure on foreign imported goods.
- Provision of social services e.g. health, insurance, Banks and education.
- It has encouraged exploitation of natural resources e.g. minerals.
- Promote international relationships through trade.

#### **Negative impact/contribution**

- Industrialization has led to environmental degradation through pollution of land, air and water and resultant effects.
- Industrialization has led to destruction of vegetation i.e. in the process of construction of large industrial plants.
- It has led to urban related problems like crimes, unemployment, traffic congestion etc.
- It destroys agricultural land as preference is made to construct industrial plants.
- Creation of large industrial plants has led to displacement of people.
- Industrialization has encouraged rural urban migration which affects/deprives off labour for rural development.
- It has led to over exploitation of natural resources that serve as raw material that are power

resources like coal.

- Occasional accidents due to use or complicated machinery.
- Industrialization encourages profit repatriation due to presence of foreign investors Increasing mechanization and automation contributes to unemployment
- The development of the industrial towns and their associated infrastructure causes regional imbalances when compared to the rest of the country side.

Contribution of industries to environmental pollution

**Land/soil:** dumping of wastes

**Water:** dumping sewage, industrial effluents and oil spillage

**Vegetation:** destruction of vegetation by hot gases, acidic gases etc.

**Air/atmosphere:** emission of acidic gases, green house gases such carbon dioxide, hot gases, poisonous gases such as carbon monoxide etc.

Other causes of pollution

- Burning of fossil fuel such as in vehicles liberate carbon dioxide
- Improper sewage and garbage disposal
- Burning of solid and liquid wastes
- Excessive use of fertilizers pollute water bodies via surface run off.
- Leakages from nuclear reactors
- River and lake silting
- Excessive use of pesticides
- Improper disposal of wastes from medical installation

Factors responsible for changes in patterns of industrial development in a given industrial area

- Strategic location/coastal location attract new industries due to easy importation of bulky raw materials and exportation of manufactured goods.
- Changes in raw materials i.e. replacement of agricultural raw materials such as cotton, silk with synthetic fibres such as polyesters necessitates change in industrial set up.
- Changes in industrial inputs due exhaustion of raw materials such as timber, iron etc may lead to closure of some industries.
- Presence of skilled labour in other regions forces some industries to reallocate.
- Limited land for expansion hassled to reallocation of some factories.
- Intensive research has attracted new industries and forces others to reallocate
- Development of efficient transport network to other regions has enabled some industries to reallocate
- Increase in population has attracted many industries to the region due to increase in labour

force and market.

- Innovation of new modern and efficient technology has led to reallocation of industries to and from New England
- Government policy of redistribution, diversification of industries may promote growth of some industrial sector.
- Availability of water to be used in production processes attracts new industries in the in the region
- Industrial inertia in the great lake region has continued to influence location in the New England state; industries tend to reallocate near each other to benefit from joint research, security, skilled labor etc.
- Specialization and zoning requires similar industries to be located in same areas favoring reallocation to enable industries acquire inputs and market cheaply

### **Obstacles to industrial development in Africa**

- Shortage of capital to invest in construction of industries.
- Shortage of skilled labour
- Small domestic market
- Under developed road network
- Political instability that limit long term investment in industries.
- Low technology
- Colonial policies that favor primary sectors such as agriculture
- Poor government policies that discourage industrial development.
- Land locked countries incur high costs to obtain raw materials and its exports.
- Lack constant supply of low materials
- Inadequate and unstable supply of energy/power
- Competition for market with developed countries
- Corruption and embezzlement of funds
- Profit repatriation limits expansion of industries.
- Limited backward and forward linkages.

### **Steps being taken to promote industrialization in Africa**

- Protection of local market by levying heavy import duties.
- Banning importation of good produced locally
- Subsidizing viable industries
- Provision of credit at low interest
- Attracting local and foreign investors.
- Forming trading organization
- Improvement of transport network.
- Ensuring political stability
- Supporting research in industrial development
- Developing energy resource

Thank you

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